



Merck KGaA

(Darmstadt, Germany)

EUR 500,000,000 Subordinated Fixed to Reset Rate Notes due June 2079 with a First Call Date September 2024

and

EUR 1,000,000,000 Subordinated Fixed to Reset Rate Notes due June 2079 with a First Call Date March 2029

Merck KGaA, incorporated in the Federal Republic of Germany, (the "**Issuer**" and, together with its consolidated subsidiaries, the "**Merck Group**", the "**Group**" or "**Merck**") will issue EUR 500,000,000 in aggregate principal amount of subordinated notes subject to interest rate reset at 5 year intervals commencing on the first reset date on December 18, 2024 (the "**NC5.5 Notes**") and EUR 1,000,000,000 in aggregate principal amount of subordinated notes subject to interest rate reset at 5 year intervals commencing on the first reset date on June 25, 2029 (the "**NC10 Notes**" and, together with the NC5.5 Notes, the "**Notes**" and each a "**Series**"), each on June 25, 2019 (the "**Issue Date**") at an issue price of 99.355 % of their principal amount in respect of the NC5.5 Notes (the "**NC5.5 Issue Price**") and 100.000 % of their principal amount in respect of the NC10 Notes (the "**NC10 Issue Price**" and together, with the NC5.5 Issue Price, each an "**Issue Price**"). The Notes are issued in denominations of EUR 100,000 each (the "**Specified Denomination**").

The NC5.5 Notes shall bear interest on their principal amount (i) from and including the Issue Date to but excluding December 18, 2024 (the "**NC5.5 First Reset Date**") at a rate of 1.625 % *per annum* (the "**NC5.5 Fixed Interest Rate**"); (ii) from and including the NC5.5 First Reset Date to but excluding December 18, 2029 at the relevant 5 year swap rate for the relevant reset period plus a margin of 194.8 basis points *per annum* (the "**NC5.5 Initial Margin**"); (iii) from and including December 18, 2029 to but excluding December 18, 2044 at the relevant 5 year swap rate for the relevant reset period plus a first step-up margin (being equal to the NC5.5 Initial Margin plus 25 basis points *per annum*); and (iv) from and including December 18, 2044 to but excluding June 25, 2079 (the "**Maturity Date**") at the relevant 5 year swap rate for the relevant reset period plus a second step-up margin (being equal to the NC5.5 Initial Margin plus 100 basis points *per annum*).

The NC10 Notes shall bear interest on their principal amount (i) from and including the Issue Date to but excluding June 25, 2029 (the "**NC10 First Reset Date**" and together with the NC5.5 First Reset Date, each a "**First Reset Date**") at a rate of 2.875% *per annum* (the "**NC10 Fixed Interest Rate**"); (ii) from and including the NC10 First Reset Date to but excluding June 25, 2049 at the relevant 5 year swap rate for the relevant reset period plus a first step-up margin (being equal to the NC10 initial margin of 268.8 basis points *per annum* (the "**NC10 Initial Margin**") plus 25 basis points *per annum*); and (iv) from and including June 25, 2049 to but excluding June 25, 2079 (the "**Maturity Date**") at the relevant 5 year swap rate for the relevant reset period plus a second step-up margin (being equal to the NC10 Initial Margin plus 100 basis points *per annum*).

During each interest period interest is scheduled to be paid annually in arrear, with respect to the NC5.5 Notes, on December 18 of each year, and, with respect to the NC10 Notes, on June 25 of each year (each an "**Interest Payment Date**"), commencing, with respect to the NC5.5 Notes, on December 18, 2019 (short first and short last coupon), and, with respect to the NC10 Notes, on June 25, 2020.

Upon the occurrence of a Change of Control Event (as defined in § 5(7)(c) of the terms and conditions of the NC5.5 Notes (the "**NC5.5 Terms and Conditions**") and of the terms and conditions of the NC10 Notes (the "**NC10 Terms and Conditions**" and, together with the NC5.5 Terms and Conditions, the "**Terms and Conditions**"), the interest rate payable on the Notes will be increased by an additional 500 basis points *per annum* above the otherwise applicable rate, if the Issuer does not redeem the Notes in whole (as set out in § 4(4) of the Terms and Conditions).

The Issuer is entitled to defer payments of interest on any Interest Payment Date ("**Deferred Interest Payments**") and may pay such Deferred Interest Payments voluntarily at any time, but only has to pay such Deferred Interest Payments under certain circumstances as set out in the relevant Terms and Conditions.

Unless previously redeemed or purchased and cancelled, the Notes will be redeemed at par on the Maturity Date.

Each Series of Notes may be separately redeemed in whole but not in part at the option of the Issuer at an amount per Note equal to the Specified Denomination plus (i) interest accrued on the Note to but excluding the date of redemption but yet unpaid and (ii) any outstanding Deferred Interest Payments due and payable, (A) in case of the NC5.5 Notes, with effect (i) as of any date during the period from and including September 18, 2024 (the "**NC5.5 First Call Date**") to and including the NC5.5 First Reset Date and (ii) on any Interest Payment Date thereafter, and (B) in case of the NC10 Notes, with effect (i) as of any date during the period from and including March 25, 2029 (the "**NC10 First Call Date**" and together with the NC5.5 First Call Date, each a "**First Call Date**") to and including the NC10 First Reset Date and (ii) on any Interest Payment Date thereafter.

The Issuer may also redeem each Series of Notes separately in whole but not in part at any time following a Rating Agency Event, a Tax Event, or an Acquisition Event (each as defined in the relevant Terms and Conditions), in each case, at an amount per Note (i) equal to 101% of the Specified Denomination if the redemption occurs prior to the relevant First Call Date or (ii) equal to the Specified Denomination if the redemption occurs on or after the relevant First Call Date, plus, in each case, (i) interest accrued on the Note to but excluding the date of redemption but yet unpaid and (ii) any outstanding Deferred Interest Payments due and payable on the Note. Additionally, the Issuer may redeem the Notes in whole but not in part at any time following a Gross-up Event and a Change of Control Event (each as defined in the Terms and Conditions) or if the Issuer has redeemed or repurchased and cancelled at least 80% of the originally issued aggregate principal amount of the relevant Series, in each case, at an amount per Note equal to the Specified Denomination plus (i) interest accrued to but excluding the date of redemption but yet unpaid and (ii) any outstanding Deferred Interest Payments.

Each Series of Notes will initially be represented by a temporary global note in bearer form (a "**Temporary Global Note**"). Interests in a Temporary Global Note will be exchangeable, in whole or in part, for interest in a permanent global note in bearer form (a "**Permanent Global Note**") and together with the Temporary Global Notes, the "**Global Notes**") not earlier than 40 days after the Issue Date (the "**Exchange Date**"), upon certification as to non-U.S. beneficial ownership. The Global Notes will be deposited with a common depositary for Clearstream Banking S.A and Euroclear Bank SA/NV (together, the "**Clearing System**").

This prospectus (the "**Prospectus**") constitutes a prospectus within the meaning of Article 5.3 of Directive 2003/71/EC of the European Parliament and of the Council of November 4, 2003 (as amended or superseded, the "**Prospectus Directive**"). This Prospectus will be published in electronic form together with all documents incorporated by reference on the website of the Luxembourg Stock Exchange (www.bourse.lu).

This Prospectus has been approved by the Commission de Surveillance du Secteur Financier, Luxembourg ("**CSSF**") in its capacity as competent authority under the Luxembourg Act dated 10 July 2005 relating to prospectuses for securities (*Loi du 10 juillet 2005 relative aux prospectus pour valeurs mobilières*, the "**Luxembourg Prospectus Law**"). By approving this Prospectus, the CSSF gives no undertaking as to the economic and financial opportuneness of the transaction and the quality or solvency of the Issuer in line with the provisions of Article 7 (7) of the Luxembourg Prospectus Law.

This Prospectus will be published in electronic form together with any supplement thereto and all documents incorporated by reference on the website of the Luxembourg Stock Exchange (www.bourse.lu).

Application has been made to the Luxembourg Stock Exchange for the Notes to be listed on the official list of the Luxembourg Stock Exchange (the "**Official List**") and to be admitted to trading on the Luxembourg Stock Exchange's regulated market "Bourse de Luxembourg", appearing on the list of regulated markets issued by the European Commission. The Luxembourg Stock Exchange's regulated market is a regulated market for the purposes of Directive 2014/65/EU (as amended, "**MiFID II**").

The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area ("**EEA**"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of MiFID II; or (ii) a customer within the meaning of Directive (EU) 2016/97 (as amended, the "**Insurance Distribution Directive**"), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the "**PRIIPs Regulation**") for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Following the respective First Reset Date, amounts payable under the Notes are calculated by reference to the annual swap rate for swap transactions denominated in Euro with a term of 5 years, which appears on the Reuters Screen Page ICESWAP2 and which is provided by ICE Benchmark Administration Limited ("**IBA**"). As at the date of this Prospectus, IBA appears on the register of administrators and benchmarks established and maintained by the European Securities and Markets Authority ("**ESMA**") pursuant to article 36 of the Benchmark Regulation (Regulation (EU) 2016/1011) (the "**Benchmark Regulation**").

Prospective purchasers of the Notes should ensure that they understand the nature of the Notes and the extent of their exposure to risks and that they consider the suitability of the Notes as an investment in light of their own circumstances and financial condition. Investing in the Notes involves certain risks. Please review the section entitled "*Risk Factors*" beginning on page 8 of this Prospectus.

Joint Bookrunners

Banco Bilbao Vizcaya Argentaria, S.A.	Bank of China	Barclays	BayernLB
BNP PARIBAS	BofA Merrill Lynch	Commerzbank	Deutsche Bank
DZ BANK	Goldman Sachs International	Helaba	J.P. Morgan
Landesbank Baden- Württemberg	Mizuho Securities	NatWest Markets	SEB
Société Générale Corporate & Investment Banking	Standard Chartered Bank	UniCredit Bank	

RESPONSIBILITY STATEMENT

Merck KGaA is solely responsible for the information given in this Prospectus. The Issuer hereby declares that, having taken all reasonable care to ensure that such is the case, the information contained in this Prospectus for which it is responsible, is, to the best of its knowledge, in accordance with the facts and contains no omission likely to affect its import.

NOTICES

This Prospectus should be read and construed with any supplement thereto and with any other documents incorporated by reference.

The Issuer has confirmed to Banco Bilbao Vizcaya Argentaria, S.A., Bank of China Limited, London Branch, Barclays Bank PLC, Bayerische Landesbank, BNP Paribas, Commerzbank Aktiengesellschaft, Deutsche Bank Aktiengesellschaft, DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, Goldman Sachs International, Landesbank Hessen-Thüringen Girozentrale, J.P. Morgan Securities plc, Landesbank Baden-Württemberg, Merrill Lynch International, Mizuho Securities Europe GmbH, NatWest Markets Plc., Skandinaviska Enskilda Banken AB (publ), Société Générale, Standard Chartered Bank and UniCredit Bank AG (the "**Joint Bookrunners**") that this Prospectus is true and accurate in all material respects and is not misleading; that any opinions and intentions expressed herein are honestly held and based on reasonable assumptions; that there are no other facts with respect to the Issuer, the omission of which would make this Prospectus as a whole or any statement herein or opinions or intentions expressed herein misleading in any material respect; and that all reasonable enquiries have been made to verify the foregoing.

The Issuer has undertaken with the Joint Bookrunners to prepare a supplement to this Prospectus or a new prospectus in the event that any significant new factor, material mistake or inaccuracy relating to the information included in this Prospectus, which is capable of affecting the assessment of the Notes, arises or is noted after the date of this Prospectus.

No person has been authorized by the Issuer to give any information or to make any representation not contained in or not consistent with this Prospectus or any other document entered into in relation to the Notes or any information supplied by any Issuer or such other information as is in the public domain and, if given or made, such information or representation should not be relied upon as having been authorized by the Issuer, the Joint Bookrunners or any individual Joint Bookrunner.

No representation or warranty is made or implied by the Joint Bookrunners or any of their respective affiliates, and neither the Joint Bookrunners nor any of their respective affiliates make any representation or warranty or accept any responsibility, as to the accuracy or completeness of the information contained in this Prospectus.

Neither the delivery of this Prospectus nor the offering, sale or delivery of any Note shall, in any circumstances, create any implication that the information contained in this Prospectus is true subsequent to the date upon which this Prospectus has been published or most recently supplemented or that there has been no adverse change in the financial position of the Issuer since the date hereof or, as the case may be, the date upon which this Prospectus has been most recently supplemented or the balance sheet date of the most recent financial statements which are deemed to be incorporated into this Prospectus by reference is correct at any time subsequent to the date on which it is supplied or, if different, the date indicated in the document containing the same.

This document may only be communicated or caused to be communicated in circumstances in which section 21(1) of the Financial Services and Markets Act 2000 ("FSMA") does not apply.

The Notes have not been and will not be registered under the United States Securities Act of 1933, as amended (the "**Securities Act**"), and will include Notes in bearer form that are subject to U.S. tax law requirements. Subject to certain exceptions, Notes may not be offered, sold or delivered within the United States or to U.S. persons, see "*Subscription and Sale — Selling Restrictions*".

The distribution of this Prospectus as well as the offering, sale, and delivery of the Notes in certain jurisdictions may be restricted by law.

Persons into whose possession this Prospectus comes are required by the Issuer and the Joint Bookrunners to inform themselves about and to observe any such restrictions. For a description of certain restrictions on offers, sales and deliveries of Notes and on the distribution of this Prospectus and other offering material relating to the Notes, see "*Subscription and Sale — Selling Restrictions*".

This Prospectus may not be used for the purpose of an offer or solicitation by anyone in any jurisdiction in which such offer or solicitation is not authorised or to any person to whom it is unlawful to make such an offer or solicitation.

This Prospectus does not constitute an offer or an invitation to subscribe for or purchase Notes and should not be considered as a recommendation by the Issuer or any Joint Bookrunners that any recipient of this Prospectus should subscribe for or purchase Notes. Each recipient of this Prospectus shall be taken to have made its own investigation and appraisal of the condition (financial or otherwise) of the Issuer.

This Prospectus contains assessments of market data and information derived therefrom which could not be obtained from any independent sources. Such information is based on the Issuer's own internal assessments and may therefore deviate from the assessments of competitors of Merck or future statistics by independent sources. As regards the market positions of Merck, Merck's own estimations are mainly based on company data which either is derived from information by competitors or from data provided by independent research companies.

For the avoidance of doubt the content of any website referred to in the Prospectus does not form part of this Prospectus.

The language of this Prospectus is English. Any part of this Prospectus in the German language constitutes a translation except for the Terms and Conditions where the English part constitutes a translation. The German text of the Terms and Conditions is controlling and binding. In respect of the documents incorporated by reference, the German language version is controlling and binding in relation to the documents listed in the table of documents incorporated by reference in the section "*Documents Incorporated by Reference*".

MIFID II PRODUCT GOVERNANCE / PROFESSIONAL INVESTORS AND ECPS ARE THE ONLY TARGET MARKET

Solely for the purposes of each manufacturer's product approval process, the target market assessment in respect of the Notes has led to the conclusion that: (i) the target market for the Notes is eligible counterparties and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Notes to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Notes (a "**distributor**") should take into

consideration the manufacturers' target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Notes (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

PRIIPS REGULATION / PROHIBITION OF SALES TO EEA RETAIL INVESTORS

The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the EEA. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of MiFID II; or (ii) a customer within the meaning of the Insurance Distribution Directive, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. Consequently, no key information document required by the PRIIPs Regulation for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Where acting as agent on behalf of a disclosed or undisclosed client when purchasing, or making or accepting an offer to purchase, any Notes (or any beneficial interests therein) from the Issuer and/or the Joint Bookrunners the foregoing representations, warranties, agreements and undertakings will be given by and be binding upon both the agent and its underlying client.

BENCHMARK REGULATION: STATEMENT ON REGISTRATION OF BENCHMARK ADMINISTRATOR

Following the respective First Reset Date, interest amounts payable under the Notes are to be calculated by reference to the annual swap rate for swap transactions denominated in Euro with a term of 5 years, which appears on the Reuters Screen Page ICESWAP2 and which is provided by IBA. As at the date of this Prospectus, IBA appears on the register of administrators and benchmarks established and maintained by ESMA pursuant to article 36 of the Benchmark Regulation.

STABILIZATION

IN CONNECTION WITH THE ISSUE OF THE NOTES, MERRILL LYNCH INTERNATIONAL (THE "**STABILISING MANAGER**") (OR ANY PERSON ACTING ON BEHALF OF THE STABILISING MANAGER) MAY OVER-ALLOT NOTES OR EFFECT TRANSACTIONS WITH A VIEW TO SUPPORTING THE MARKET PRICE OF THE NOTES AT A LEVEL HIGHER THAN THAT WHICH MIGHT OTHERWISE PREVAIL. HOWEVER, STABILISATION MAY NOT NECESSARILY OCCUR. ANY STABILISATION ACTION MAY BEGIN ON OR AFTER THE DATE ON WHICH ADEQUATE PUBLIC DISCLOSURE OF THE TERMS OF THE OFFER OF THE NOTES IS MADE AND, IF BEGUN, MAY CEASE AT ANY TIME, BUT IT MUST END NO LATER THAN THE EARLIER OF 30 DAYS AFTER THE ISSUE DATE OF THE NOTES AND 60 DAYS AFTER THE DATE OF THE ALLOTMENT OF THE NOTES. ANY STABILISATION ACTION OR OVER-ALLOTMENT MUST BE CONDUCTED BY THE STABILISING MANAGER (OR ANY PERSON ACTING ON BEHALF OF THE STABILISING MANAGER) IN ACCORDANCE WITH ALL APPLICABLE LAWS AND RULES.

ALTERNATIVE PERFORMANCE MEASURES

Certain terms used in this Prospectus and financial measures presented in the documents incorporated by reference are not recognized financial measures under International Financial Reporting Standards (IFRS) ("**Alternative Performance Measures**") and may therefore not be considered as an alternative to the financial measures defined in the accounting standards in accordance with generally accepted accounting principles. The Issuer has provided these Alternative Performance Measures because it believes they provide investors with additional information to assess the economic situation of the Issuer's business activities. The definition of the Alternative Performance Measures may vary from the definition of identically named alternative performance measures used by other companies. The Alternative Performance Measures used by the Issuer should not be considered as an alternative to measures derived in accordance with IFRS as measures of operating performance. These Alternative Performance Measures have limitations as analytical tools and should not be considered in isolation or as substitutes for analysis of results as reported under IFRS.

FORWARD-LOOKING STATEMENTS

This Prospectus contains certain forward-looking statements. A forward-looking statement is a statement that does not relate to historical facts and events. They are based on analyses or forecasts of future results and estimates of amounts not yet determinable or foreseeable. These forward-looking statements are identified by the use of terms and phrases such as "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "predict", "project", "will" and similar terms and phrases, including references and assumptions. This applies, in particular, to statements in this Prospectus containing information on future earning capacity, plans and expectations regarding Merck Group's business and management, its growth and profitability, and general economic and regulatory conditions and other factors that affect it.

Forward-looking statements in this Prospectus are based on current estimates and assumptions that the Issuer makes to the best of its present knowledge. These forward-looking statements are subject to risks, uncertainties and other factors which could cause actual results, including Merck Group's financial condition and results of operations, to differ materially from and be worse than results that have expressly or implicitly been assumed or described in these forward-looking statements. Merck Group's business is also subject to a number of risks and uncertainties that could cause a forward-looking statement, estimate or prediction in this Prospectus to become inaccurate. Accordingly, investors are strongly advised to read the section "*Description of Merck and the Merck Group*" of this Prospectus. This section includes more detailed descriptions of factors that might have an impact on Merck Group's business and the markets in which it operates.

In light of these risks, uncertainties and assumptions, future events described in this Prospectus may not occur. In addition, neither the Issuer nor the Joint Bookrunners assume any obligation, except as required by law, to update any forward-looking statement or to conform these forward-looking statements to actual events or developments.

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RISK FACTORS

Below is a description of risk factors that are material for the assessment of the market risk associated with the Notes and risk factors that may affect the Issuer's ability to fulfil its obligations under the Notes. Any of these risks could have a material adverse effect on the financial condition and results of operations of Merck. The market price of the Notes could decline due to any of these risks, and investors could lose all or part of their investments.

Potential investors should carefully consider these risk factors outlined below in addition to all other information in this Prospectus and consult with their own professional advisors should they deem it necessary before deciding upon the purchase of the Notes. In addition, investors should bear in mind that several of the described risks can occur simultaneously and thus have, possibly together with other circumstances, a stronger impact. The order in which the risks are described neither indicates the probability of their occurrence nor the gravity or significance of the individual risks nor the scope of their financial consequences. Additional risks of which the Issuer are not presently aware could also affect the business operations of Merck and have a material adverse effect on Merck's business activities and financial condition and results of operations.

Words and terms that are defined in the Terms and Conditions of the Notes below or elsewhere in this Prospectus have the same meaning in this section "Risk Factors".

Potential investors should, among other things, consider the following:

Risk factors relating to the Issuer and the Group

The Group's ability to market pharmaceutical products is subject to strict regulations by government authorities.

The development, manufacture, marketing, import and advertising of drugs are subject to extensive and restricting government regulations. In almost all jurisdictions in which the Group operates, the market launch of new drugs or new dosages of drugs requires regulatory approval. The development and approval processes are very cost-intensive and time-consuming. Moreover, the result of the process cannot always be predicted because it depends on the outcome of scientific studies on the one hand and possible statutory and regulatory measures on the other. In such cases, the Group weighs the additional costs against the expected benefits to decide whether it is commercially reasonable to further invest in the development of such drugs. Moreover, it can sometimes take several years to determine whether a drug is approvable. In addition, the required regulatory approvals for drugs may be delayed or denied or drugs may not be approved for all indications for which marketing authorization applications were submitted.

If the Group is not successful in obtaining regulatory approval or positive reimbursement decisions for the marketing of new drugs or existing drugs for new indications in time or at all, or if the Group were to encounter other regulatory hurdles, this could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Even after approval, drugs are still the subject of regulatory or legal action if new facts concerning their safety and efficacy come to light. For example, subsequent to the EMA's recommendation to suspend the marketing authorization for the psoriasis treatment Raptiva® (efalizumab) in the European Union (EU), Biopharma deliberately withdrew this product from all markets in and outside of Europe in 2009. The decision to suspend and withdraw the marketing authorizations was made because of safety concerns, including the occurrence of virologically confirmed cases of progressive multifocal

leukoencephalopathy (PML) in patients. In addition, there is a risk that claims may be brought against the Group in connection with any suspension of marketing authorizations.

Regulatory measures can also relate to statutory requirements for product labelling. Changes in product labelling could influence decisions of doctors on whether or not to prescribe the relevant products. Moreover, regulatory action can have a considerable impact on the marketing of drugs by the Group or even force the Group to withdraw products from the market.

The move of the EMA from the United Kingdom to The Netherlands as consequence of Brexit could have a negative impact on the registration process in the EU in particular driven by time delays.

Any of the factors mentioned above could have a negative impact on the Group's business, financial condition, results of operations and prospects.

Due to the uncertainties associated with the process of developing new drugs, the Group may be unable to successfully develop new drugs and other pharmaceutical products and launch them in a timely manner.

The Group's success in the pharmaceutical industry in part relies on launching newly developed drugs in a timely manner. Whether a drug can be introduced to the market cannot be predicted in advance. Drugs that were considered very promising in Phase I studies may prove to be unsuitable for regulatory approval in Phase II and Phase III clinical trials. This might also be the case for drugs which are already approved in other indications but cannot meet primary endpoints in subsequent studies targeting different indications and patient populations. For example, in December 2018, Merck and Pfizer Inc. announced that that data from a planned interim analysis of the Phase III JAVELIN Ovarian 100 study of avelumab did not support the study's initial hypothesis, and therefore the alliance made the decision to terminate the trial in alignment with the independent Data Monitoring Committee.

Reasons for negative trial outcomes may include ineffectiveness in certain indications, previously unknown side effects appearing in later phases, risk-benefit analyses that can produce a negative result, or changes in the competitive environment that can make continuing development commercially impractical.

Due to the uncertainties associated with the process of developing new drugs, no assurance can be given that the Group will be able to successfully develop and launch new drugs and other pharmaceutical products in a timely manner. The aforementioned factors also influence the development and approval process of new indications for drugs that have already been approved, the approval of drugs or drug delivery devices that have been approved in certain geographies in additional geographies that require regional-specific registration studies.

Should the Group be unable to successfully develop new drugs and other pharmaceutical products or to launch them in a timely manner this could have a negative impact on the Group's business, financial condition, results of operations and prospects.

If the Group would be unable to arrange and maintain alliances and other cooperation agreements with third parties, this could impair the Group's financial capabilities and ability to develop new drugs and other pharmaceutical products.

In the pharmaceutical sector, the Group is increasingly making use of opportunities for partnerships with 3rd parties, particularly by entering into cooperation agreements with other pharmaceutical and biotech companies. As a result, the Group depends on its partners to, among other things, fulfil their

contractual obligations, fulfil their delivery and quality obligations and maintain the underlying patents. However, the Group's contractual partners may be unable to do so or terminate partnerships owing to limited financial resources or other reasons.

The Group could also be unable to enter into the required cooperation agreements at suitable terms and conditions, or at all, in the future. Against the backdrop of further consolidation in the biotech industry, it could become more difficult for the Group to find suitable partners for cooperation agreements in this field. In addition, there is a strong competition among pharmaceutical and biotech companies for the acquisition of licenses for technologies and active ingredients developed by third parties.

A deviation from the strategic targets of the Group defined in this area could have a negative impact on the Group's business, financial condition, results of operations and prospects.

The Healthcare Business Sector is affected by rising pressure on healthcare costs worldwide.

The Healthcare Business Sector is strongly influenced by the structure of the public healthcare systems in the relevant countries and the resulting market structures. In particular, regulations that vary by country apply to the selection, price and dispensing of physician-prescribed drugs and to the reimbursement or payment of the cost of such drugs by the relevant health insurance funds, country-specific social security institutions and public health services. Market structures are also shaped by the relevant national regulations on drug pricing and market access. These market structures can force the Group to lower its prices for drugs or change sourcing strategies to market them efficiently. Furthermore, in some markets, major customers of pharmaceutical products (government agencies, health insurance companies or certain healthcare providers) have such market power that they can exert substantial price pressure on pharmaceutical producers such as the Group. In many countries, healthcare regulations and regulatory mechanisms are subject to frequent changes, often at short notice.

In some cases, new regulations can substantially change the marketing conditions for drugs. For example, in the United States, policies are frequently proposed that could adversely impact the pricing or utilization of the Group's biopharmaceutical products provided to patients in government-administered healthcare programs. Accordingly, investments made in reliance on an existing market structure could prove to be not cost effective or worthless and existing market positions could be at risk. In general, any measure aimed at decreasing the costs of drug provision applicable to pharmaceutical manufacturers in the countries in which the Group operates may reduce its sales and profitability. In addition, in Europe certain countries serve as reference points for the determination of prices in other countries, and increasingly also in other regions such as Latin America, the Middle East and Asia.

Any regulatory developments in these countries that adversely affect the market structure, or the price of the Group's products could have a negative impact on the Group's business, financial condition, results of operations and prospects.

The increasingly stringent regulatory environment for the specialty chemical industry could have a negative effect on the Group's production costs and the product portfolio in its Life Science and Performance Materials Business Sectors.

In its chemicals business, the Group must adhere to a multitude of regulatory specifications regarding the manufacture, testing and marketing of many of its products. More stringent regulations worldwide can have a negative impact on the Group's production costs and product portfolio. Specifically, in the European Union, the Group is subject to the European Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals ("REACH"), which is designed

to ensure a high level of protection for people and the environment. It demands comprehensive tests for chemical products. Test procedures required by REACH can be costly and time-intensive and may lead to a rise in production costs. Moreover, the use of chemicals in production could be restricted, which would make it impossible to continue manufacturing certain products. As the Group is constantly pursuing research and development in substance characterization, and in the possible substitution of critical substances, the occurrence of this risk is thought unlikely. Nevertheless, it could still have a negative impact on the Group's business, financial condition, results of operations and prospects.

A decline in the business or financial performance of the Group's customers, including general economic conditions or cyclical factors affecting key customers' industries can result in a decline in demand for the Group's products.

The destabilization of political systems (as for example in Turkey or the Middle East), the possible establishment of trade barriers, sanctions and foreign exchange policy changes can lead to declines in sales in certain countries and regions. Potential negative macroeconomic developments, for example in Argentina, can also impact the business of the Group.

The Performance Materials Business Sector is exposed to the cyclical nature of the industries in which its key customers operate and volatilities of the markets. In general, weak business conditions for the Group's customers in key markets result in weak sales of the Group's products. Such developments are often amplified by the fact that the Group and its competitors cannot easily reduce existing production capacity and the corresponding costs or otherwise adapt the production processes.

The products of the Life Science Business Sector are used in manufacturing and research processes, making it important for the business to establish close collaboration with its customers starting in early stages of the manufacturing design process. Any decline in sales, economic difficulties or regulatory measures faced by a customer, or any voluntary or involuntary suspension or termination by a customer of its production of a product, could simultaneously affect the sales of the Life Science Business Sector as it may be forced to curtail or stop delivery of its products to that customer. In respect of the products of the Life Science Business Sector' used for the research and development universities, hospitals and stand-alone research institutes, any reduction in private or public research and development budgets could negatively affect the Life Science Business Sector.

For many customers in the life science and specialty chemicals industries, the Group is presently the single source supplier for one or several critical components used in their production lines. However, increasingly customers are seeking to implement a second source of products, which may result in existing customers becoming able to choose another supplier to supply components that are presently supplied by the Group. This could result in a loss of future business opportunities or future sales for the Group.

A weak economy is also intensifying cost pressure on national healthcare systems and in turn on the pharmaceutical industry in various countries, and, as a result, is also increasing the frequency and scope of regulatory and governmental interventions in market structures. Also, certain individual products of the Group and product lines in the pharmaceutical sector are frequently not covered by health insurance, which results in consumers having to bear the cost of these products. The sales of these products are therefore more sensitive to economic cycles.

All of the abovementioned factors could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Increased competition in all business sectors could have an adverse effect on the Group's sales and adversely affect its future growth potential.

The Group must compete with numerous firms in each of the pharmaceutical, specialty chemicals and life science industries. Some of these competitors have greater financial, marketing or research and development resources at their disposal. Growing competitive pressure could have a material adverse effect on sales and prices of the Group's products and services.

The Healthcare Business Sector could be exposed in the future to increased competitive pressure from products that are currently in clinical development or that have recently been launched. Moreover, competitive pressures could further increase due to the market entry of new suppliers of generics, biosimilars or bioidenticals to the Group's existing products.

The Life Science Business Sector directly competes with two of its significant distributors. If these distributors stop selling the products of the Life Science Business Sector or materially changed the terms of the underlying distribution agreements, the sales and earnings of the Life Science Business Sector could be adversely affected in the short term.

The liquid crystals business, which contributes a substantial part of the Performance Materials Business Sector's sales, is facing a situation of increasing competition. Thus, it cannot be ruled out that this will reduce the Group's market share and margins attainable in the liquid crystal business. It is also possible that competitors will gain some of the Group's business as a result of developments within their own portfolio. In addition, while patent protection exists for several products and technologies, the protection of some key patents in liquid crystal technology has already expired.

In the Performance Materials Business Sector, growing competition for high-volume commodity products for simpler applications has already led to increased price pressure, which will continue to grow in the future with respect to this business sector's other product ranges.

Increased competition, whether due to the aforementioned or other factors, could have a material adverse effect on the market position of the Group and therefore the volume of products it sells, as well as attainable prices and realizable margins.

Increased competition in the pharmaceutical industry resulting from biosimilars, bioidenticals or generics could have an adverse effect on sales and growth potential of the Healthcare Business Sector.

In the Healthcare Business Sector, both the Group's biopharmaceutical products and classic pharmaceutical business are exposed to increased competition from rival products.

Biological products from the Healthcare Business Sector could come under greater competitive pressure from biosimilars. Specific regulatory directives apply to the development and approval of competing biosimilars that use the reference data of already approved biological products. Existing frameworks in both the EU and the United States enable biosimilars to enter the markets as soon as the exclusive rights of the original products expire. The products Rebif[®], Erbitux[®] and Gonal-f[®] as well as the Group's general medicine products could be affected in particular.

Although the effects of corresponding risks are taken into account as far as possible in the Group's plans for the countries and regions concerned, the increased competitive pressures could nevertheless adversely affect the Group's business, financial condition, results of operations and prospects.

Due to the international nature of the Group's activities, the Group is confronted with various legal, regulatory, economic, social and political circumstances and environments that entail risks.

The Group manufactures products in a number of countries and offers its products and services worldwide. In some of the countries in which the Group manufactures its products, to which the Group exports its products or in which the Group provides services, conditions are significantly different from those in Western Europe, and there is less stability in the economic, political and legal systems. This is particularly the case in a number of countries in Asia, Eastern Europe, South America and Africa that the Group has identified as growth markets for its products. In the past, these countries have repeatedly experienced political and economic crises. For this reason, the Group is exposed to a number of factors that it cannot influence. In addition to political, economic and social stability, these factors include exchange controls and capital transfer restrictions or taxation, import/export restrictions and duties, the possible erection of trade barriers, monetary policy changes and other regulatory restrictions. Each of these factors that the Group cannot influence could lead to declines in sales in certain countries and regions and impact the Group's business, financial condition, results of operations and prospects.

The United Kingdom's departure from the EU could adversely affect the Group's business.

The United Kingdom's intended exit from the European Union ("**Brexit**") gives rise to risks for the Group's existing business in the United Kingdom (2018: sales of EUR 636 million, 1,442 employees and 5 production sites), including the devaluation of the pound sterling, a weakening of the United Kingdom's economy, taxation effects, regulatory changes, the creation of trade barriers such as tariffs as well as, particularly in the event of a Brexit without a transition phase ("**hard Brexit**"), operational risks due to, for example, delays in the supply chain that could have an impact on the Group's profitability.

To analyse these risks and in order to counteract them early in a targeted manner, the Group has established internal working groups that considered various scenarios, including the possibility of a "hard Brexit". Although mitigation measures have been developed for these scenarios (including a relocation of the marketing authorization holder for drugs currently registered via the United Kingdom, changes to supply routes and the planned build-up of inventories of critical products), which aim to ensure market access and the stability of the supply chain, there can be no assurance that these measures will be completely successful or sufficient. In addition, there is a risk that the Brexit will result in political and macroeconomic developments with negative impact on the Group's business.

Any of the factors mentioned above could have material negative effects on the Group's net assets, financial position and results of operations.

Rising raw material prices and other production costs could adversely affect the profitability of the Group's business.

In addition to general price increases, the Group's procurement and production operations in particular depend on the availability and purchase prices of raw materials as well as packaging materials. Raw materials prices are themselves subject to considerable cyclical fluctuations. The Group's costs of production are affected by, in particular, market prices of precious metals and metal compounds, alcohols, sodium and potassium compounds, as well as to a certain degree by the price of crude oil. These price fluctuations primarily affect the Performance Materials Business Sector and the Life Science Business Sector. Price fluctuations also have a secondary effect on the Healthcare Business Sector in the form of changes in the cost of pharmaceutical active ingredients purchased. The Group is dependent on individual suppliers of upstream products for some of its main products. In the event that

one of these suppliers curtails or discontinues production, or supply is disrupted, this would possibly have a critical impact on Group operations concerned.

If goods that the Group requires for its business activities are not available or if the Group is not able to compensate for or pass on to customers increases in the price of such materials in the future, this could adversely affect the Group's business, financial condition, results of operations and prospects.

The Group could be subject to contractual claims and product liability claims from product defects that could lead to substantial expenses and liabilities.

Companies in the chemical and pharmaceutical industries are subject in particular to the risk of lawsuits alleging negligence, product liability, violations of warranty obligations and other contractual or statutory claims relating to product defects. Such lawsuits may include claims based on personal injury or death alleged to be caused by a product of the Group, in particular pharmaceutical products. These lawsuits often involve claims for substantial amounts of damages, including compensation for consequential damage and substantial costs for legal representation. In addition, chemical or pharmaceutical products (drugs and other healthcare products) may be the subject of recalls or patent infringement suits. For this reason, there can be no assurance that extensive claims will not be asserted against the Group in the future or that large-scale product recall measures will not be necessary. As many of the Group's products are further integrated into customer production processes, the Group may increasingly become exposed to contractual claims or product liability claims. Some countries in which the Group operates have a special legal framework for pharmaceutical products that could increase the risk of product liability claims being asserted and/or the ultimate costs of defending against such claims. In addition, the Group could incur high expenses based on product liability claims, other violations of duties of care or contractual provisions, recall measures or penalties imposed for these reasons by public authorities. These events can also adversely affect the Group's reputation and therefore reduce market acceptance of the Group's products. All of the foregoing factors could adversely affect the Group's business, financial condition, results of operations and prospects.

The product portfolios of the Group's Performance Materials and the Life Science business sectors include some substances that are classified as hazardous to health and the environment. On January 20, 2009, the Globally Harmonised System of Classification and Labelling of Chemicals ("GHS") entered into force. Today the labelling of substances according to the GHS is mandatory in the European Union for pure substances as well as for mixtures and the Group classifies its products according to EU-GHS and provides GHS-labeled products. In addition to obvious changes regarding the labeling elements (e.g. new hazard pictograms and the signal word) GHS lowers some classification thresholds (e.g. for acute toxicity). As a consequence, the wording of the hazard communication under GHS already has changed fundamentally. Although all chemical products in the Group portfolio remain physically the same, their labels display more often and more severe hazards under GHS. Such a classification leads to an increased perception by third parties that the Group's products are hazardous to health and the environment and may deter some customers from buying these products. In addition, even with an up-to-date hazard communication in place, the possibility that the environment, the health or even the life of humans is affected cannot be ruled out, particularly in case of improper use of a product, or due to unknown product characteristics. Such consequences can also occur due to contamination during the production process. The foregoing risks could expose the Group to unanticipated product liability or similar claims.

It is possible that damage, losses or liability on the part of the Group will either not be sufficiently covered by existing insurance policies or not insured at all.

The Group has a number of insurance policies to cover risks arising from its business activities. Most notably, those risks include the risk of operational failures due to force majeure – for example natural disasters such as floods or earthquakes – and product liability risk which can lead to considerable claims for damages and costs to avert damages. It is uncertain whether the insurance policies offer sufficient coverage in individual cases. For example, insurance coverage for product liability risks arising from drugs does not apply until a certain threshold has been reached, below which the insurance benefits do not apply, unless stipulated otherwise by law. In addition, various active ingredients used in the pharmaceutical industry are generally excluded from insurance coverage due to unilateral conditions imposed by the insurance industry. Moreover, it is also uncertain whether the Group will be able to continue to obtain suitable insurance coverage for all business risks on economically acceptable terms in the future.

The Group might not be able to adapt to technological changes and changing customer preferences or to continue to develop and successfully launch innovative products.

The Group operates in the pharmaceutical, specialty chemical and life science industries. All three are characterized by fierce competition and intense research and development activity as well as associated rapid technological change and constant changes in customer preferences. As part of its strategy, the Group also focuses on products that require above-average research and development spending. The Group's success therefore depends on its continued ability to cost-effectively develop innovative products, launch these products on the market and therefore to address current technological developments in a timely manner. The Group competes with numerous companies, which include small niche suppliers as well as large international corporations. New developments and adaptations may cause technical problems or delays in their implementation, can fail entirely or be rejected by the market.

If competitors were to develop their current products and technologies more quickly than the Group or launch alternative products or technologies that are more cost-effective, of higher quality or are for other reasons more attractive than the Group's products, this could adversely affect demand for the Group's products.

The Group faces the risk of a temporary ban on products/production facilities or of non-registration of products due to non-compliance with quality standards.

The Group is required to comply with the highest standards of quality in the manufacture of its products (Good Manufacturing Practice or official pharmacopoeia). In this regard, the Group is subject to the supervision of the regulatory authorities. If the Group fails to comply with the requisite quality standards, conditions imposed by national regulatory authorities could result in a temporary ban on products/production facilities and possibly affect new registrations with the respective authority.

Depending on the product concerned and the severity of the potential breach of quality standards, this could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Healthcare Business Sector generates a significant part of its sales with four products.

In the fiscal year 2018, the Healthcare Business Sector generated EUR 1,438 million (23% of its net sales) from the sale of Rebif[®], EUR 816 million (13% of its net sales) from the sale of Erbitux[®],

EUR 733 million (12% of its net sales) from the sale of Glucophage[®] and EUR 708 million (11% of its net sales) from the sale of Gonal-f[®]. In the year ended December 31, 2018, the Healthcare Business Sector generated 42% of the Group's net sales. Due to this concentration, the successful marketing or launch of comparable products by competitors or the results of clinical comparative efficacy trials involving competing products already approved could have a material adverse effect on the Healthcare Business Sector's sales and earnings and therefore the Group's business, financial condition, results of operations and prospects. For example, since 2014, Rebif[®] has faced tougher competition as a result of significant changes in the market environment for MS products. Several new competitors to Rebif[®] have entered the market in the last years and further are expected to come. Strategies for defending market share are in place and their impact as well as the development of the market are being monitored on an ongoing basis.

Furthermore, it is possible that Rebif[®] is not sufficiently protected. Apart from a formulation patent expiring in 2022 in the US, Rebif[®] is currently protected by a covenant not to sue in the United States pursuant to an agreement entered into by Merck with competing patent claimants. This covenant not to sue, instead of a true licensing agreement, covers the "Sugano" patents in the United States. The last of the currently granted Sugano patents expires in the US in June 2033. This US patent is the most important property right relating to interferon beta, which is the active ingredient of Rebif[®]. In the event of infringement of this US patent, for example by biosimilars manufacturers, the Group, through Merck Serono SA, a subsidiary of Merck, does not have the enforcement right to take court action against such infringement due to provisions of the agreement referred to above. In Europe, data exclusivity in respect of Rebif[®] has expired. The only protection still available in Europe is in respect of a HSA-free Rebif[®] formulation through a formulation patent which extends protection until 2024 and another granted patent which has been in-licensed from a third party.

No assurance can be given that the Group will be able to recruit or retain qualified employees in the future.

The Group is to a great extent dependent on highly qualified executives and technical experts, in particular in the area of research and development. In past years, there has been intense competition in the Group's markets for employees with scientific, technical or industry-specific knowledge. The Group's success has depended and will continue to depend on recruiting and retaining highly qualified employees. In the event that the Group experiences high rates of employee turnover in critical positions or if specialist teams are poached by the Group's competitors, it will require time and additional costs to quickly refill the open positions from the labour market. The Group is therefore continuously investing in internal talent development as well as tailored retention measurements to limit this organizational impact. Nevertheless, the loss of qualified employees or ongoing difficulties in the hiring of suitable employees could materially adversely affect the Group's business, financial condition, results of operations and prospects.

The Group is subject to risks arising from legal disputes.

The Group's business can be adversely affected by the detrimental outcome of legal disputes and investigations by government agencies, the outcome of which is not certain. Litigation risks include in particular risks in the areas of product liability, competition and antitrust law, pharmaceutical law, patent law, trademark law, data protection law, tax law, and environmental protection. Pending legal disputes and investigations which could materially adversely affect the Group's business, reputation, financial condition and results of operations include, but are not limited to, the following:

Merck is involved in a patent dispute with Biogen Inc., Massachusetts (United States) ("**Biogen**") in the United States. Biogen claims that the sale of Rebif® in the United States infringes on a Biogen patent. The disputed patent was granted to Biogen in the United States in 2009. Subsequently, Biogen sued Merck and other pharmaceutical companies for infringement of this patent. Merck defended itself against all allegations and brought a countersuit claiming that the patent is invalid and not infringed by the Group's actions. A Markman hearing took place in January 2012, leading to a claims construction decision in the first quarter of 2016. A court-ordered mediation proceeding did not lead to an agreement between the parties. On February 23, 2018, a jury found in favour of Merck. This jury verdict was, however overturned by the preceding federal district judge. For the time being the patent is thus deemed to be valid and to have been infringed. Merck filed an appeal in October 2018 with the United States Court of Appeals of the Federal Circuit challenging the district judge's ruling.

In the Performance Materials Business Sector, Merck is involved in a legal dispute with JNC Corporation, Japan, ("**JNC**"). JNC claims that by manufacturing and marketing certain liquid crystals mixtures, Merck infringes on JNC patents. Merck maintains that JNC's patent infringement assertion is invalid owing to relevant prior art and has filed the corresponding nullity actions, which in three cases were already successful in first-instance proceedings. JNC has filed complaints in each case. In a correction trial, a decision in favor of JNC was issued in the second instance. Both Merck and the Korean Patent Office have filed complaints with the Korean Supreme Court. In parallel, JNC filed two patent infringement suits. In each of the cases, a first-instance and second-instance decision was taken in Merck's favor, respectively. While in one of these cases JNC appealed, in the second case the time for filing an appeal passed without JNC appealing the respective court decision.

A new formulation of Levothyrox (Euthyrox), which was developed by Merck on a request from regulatory authorities, was first launched in France in the second quarter of 2017. In the course of 2017 and ongoing during 2018, a significant number of patients started to complain about reported side effects leading to extensive media coverage. Patients have filed legal claims before civil courts asking for compensation from Merck or for a medical expertise. Several civil proceedings are ongoing. As of the date of this Prospectus, all decisions have been rendered in favour of Merck, except for one summary judgement against which an appeal has been filed by Merck before the French supreme court. In the largest collective civil action (Lyon court) initiated by 4,115 claimants for an alleged lack of information, the first instance fully rejected all claims made against Merck by a ruling rendered on March 5th, 2019. An appeal has been filed by the claimants.

In connection with the divested generics business, Merck has been subject to investigations by the Office of Fair Trading ("**OFT**") in the United Kingdom. In March 2013, the OFT informed Merck of the assumption that a settlement agreement entered into in 2002 between Generics (UK) Ltd., at that time a subsidiary of Merck, and several subsidiaries of GlaxoSmithKline in connection with the antidepressant drug paroxetine violates British and European competition law. The investigations into Generics (UK) Ltd. started in 2011, without this being known to Merck. The investigations were extended to Merck in 2013. On February 12, 2016, the OFT issued an infringement decision to a number of companies and Merck appealed this decision. The Competition Appeals Tribunal has since submitted the relevant legal questions to the European Court of Justice (CJEU) for a preliminary ruling.

In December 2011, the Brazilian federal state of São Paulo sued Merck for damages because of alleged collusion between various pharmaceutical companies and an association of patients suffering from psoriasis and vitiligo. The collusion is alleged to have been intended to increase sales of the medicines from the companies to the detriment of patients and state coffers. Moreover, patients are also suing for

damages in connection with the product Raptiva[®]. As of the date of this Prospectus, seven of the eight individual lawsuits have been dismissed.

On July 6, 2017, Merck received notice from the European Commission ("EU Commission"), in connection with the antitrust review proceedings for the acquisition of Sigma-Aldrich, in which the EU Commission informed Merck of its preliminary conclusion that Merck and Sigma-Aldrich allegedly transmitted incorrect and/or misleading information within the scope of the acquisition of Sigma-Aldrich. The EU Commission received registration of the merger on April 21, 2015 and granted clearance on June 15, 2015 subject to the condition that Merck and Sigma-Aldrich divest parts of the European solvents and inorganic chemicals businesses of Sigma-Aldrich in order to resolve antitrust concerns. According to the preliminary viewpoint of the EU Commission communicated in the letter dated July 6, 2017, Merck and Sigma-Aldrich withheld in this connection important information about an innovation project allegedly relevant for certain laboratory chemicals of significance to the analysis by the EU Commission. According to the EU Commission, the innovation project should have been included in the remedies package. At present, an EU Commission administrative procedure is still pending that could lead to a fine being imposed by the EU Commission. Merck is entitled to appeal against a decision the EU Commission may pass. The ongoing investigations are limited to the examination of violations of EU merger control procedures and do not affect the validity of the EU Commission's decision to approve the merger.

Merck is involved in various legal disputes with Merck & Co. Inc., Kenilworth, NJ, US of the United States (outside the United States and Canada: Merck Sharp & Dohme ("MSD")), among other things due to breach of the co-existence agreement between the two companies and / or trademark / name right infringement regarding the use of the designation "Merck". In this context, Merck has sued MSD in various countries and has been sued by MSD in the United States.

The Group has set up provisions for risks arising from several of the aforementioned legal disputes in an amount deemed appropriate by the Group. The amount of these provisions, however, may be insufficient to cover all damages or costs and expenses arising from these legal disputes. In addition, the Group could be found liable for damages in cases for which no provisions have been booked.

All of the above cases and described risks, individually or in aggregate, could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group may not be successful in protecting its intellectual property and knowhow sufficiently. Moreover, there can be no assurance that all of the Group's patents are valid or that the Group has sufficient legal protection against infringement and circumvention.

The Group has a large number of patents and other intellectual property rights at its disposal that are important for its business success. The patent application process, patent maintenance and enforcement are time-consuming and expensive. There can be no assurance that the Group will be granted the necessary patents based on currently pending and future application processes. Even if patents raise a presumption of their validity under law, their approval alone does not necessarily ensure that they are valid or that any patent claims can be asserted successfully in the required or desired scope.

The Group could find it necessary to enforce and protect patents, licenses and other intellectual property rights by taking legal action. Such processes can be time-consuming and expensive. Moreover, there can be no assurance that all of the Group's patents are valid or that the Group has sufficient legal protection against infringement and circumvention. In this case, the Group could lose such legal

disputes, which could limit, prevent or at least substantially delay the further marketing or launch of products.

The Group also depends on the existence and protection of its trademark rights, which comprise the names of many of its key products and are registered in the countries in which the Group sells the majority of its products. A trademark is the exclusive right to use a registered mark and prevent third parties using such trademark by appropriate means including court actions. Effective trademark protection, therefore, requires extensive controls and subsequent research. If the Group does not identify the illegal use of its trademarks early enough or at all, or if the Group is unsuccessful in taking court action to protect its trademark rights, this could adversely affect the reputation and image of the Group at the customer level or could adversely affect its ability to effectively protect its trademarks.

The Group could infringe the intellectual property rights of third parties or could have to rely on fee-based use of third-party intellectual property.

There is a risk that the Group could infringe on third-party patents or other industrial property rights, because the Group's competitors apply for patents and receive patent protection for a significant number of inventions. If this were to occur, the Group could be prevented from using the relevant technologies in the countries in which the industrial property rights were granted. This holds true regardless of whether the Group had used these technologies before in other countries in a permitted way and itself had not applied for a patent, possibly due to reasons of confidentiality.

In all of these cases, the Group could be denied the opportunity to manufacture or market products, and the Group would then be forced, if applicable, to acquire licenses or change manufacturing processes. Moreover, the Group could be liable for damages for patent infringement or infringement of other intellectual property. In addition, the Group's competitors could prohibit the Group from producing or selling such products in countries in which the respective competitor holds higher priority patent protection. The Group could also be forced to rely on obtaining access to third-party technologies by acquiring licenses, which would result in corresponding expenses. However, there can be no assurance that the Group will be able to obtain all licenses required for the success of its business on reasonable terms and conditions in the future. In addition, there can be no assurance that licenses acquired were granted in the required scope.

Any of the above described circumstances could materially adversely affect the Group's business, financial condition, results of operations and prospects.

The lack of availability of good quality materials or services that the Group requires for its business activities can adversely affect the Group's results.

The Group depends on the availability of certain materials and services for its production processes. In addition, the Group also partly uses external contract manufacturers to manufacture products. In both cases, the Group places considerable demands on suppliers and contract manufacturers with regard to the quality of the materials supplied and services performed. If such suppliers and contract manufacturers were unavailable temporarily or permanently, were no longer able or willing to supply or manufacture products for other reasons or were unable to meet the Group's quality standards, the Group could be unable to replace these shortfalls at short notice. The same could apply in case of shortfalls within the internal supply chain.

This could then lead to a situation in which the Group could no longer manufacture individual products, at least temporarily, or the amount needed, which in turn could materially adversely affect the Group's business, financial condition, results of operations and prospects.

The Group is exposed to risks relating to acquisitions and divestments.

Acquisitions, business alliances and in-licensing have been and will be an important opportunity to diversify into new product areas and markets or to complement the Group's existing portfolio. Carrying out acquisitions, such as the Versum Acquisition described in " – *The benefits that Merck may realize from the Versum Acquisition could be materially different from the Group's expectations*", involves risks. For instance, any acquisition carries the risk that the price paid is considered too high by the market, that the acquisition proves to be less successful than anticipated, that the acquired company or business does not develop as expected by the market, and that sales and earnings targets pursued by way of the acquisition are not met. In addition, any acquisition is subject to potential tax risks or the risk that the Group will not be able to integrate the acquired company into the Group as planned or only at a higher cost than originally planned, or that any intended synergy effects cannot be realized to the extent planned or cannot be realized at all. Furthermore, acquisitions may involve the risk that liabilities related to the acquired business or company are assumed which may not be recoverable from the respective seller.

With respect to the large acquisition of Sigma-Aldrich Corporation in 2015 remaining risks still apply. These are risks regarding the ability of the Group to achieve the cost savings and synergies contemplated by the transaction within the expected timeframe and regarding the ability of the Group to promptly and effectively integrate the business of Sigma-Aldrich Corporation and the Group as well as potential tax risks.

The Group continues to examine possibilities to expand its business through acquisitions and in-licensing in the pharmaceutical, specialty chemical and life science industries. The Group could thus grow further through additional acquisitions or in-licensing. Additionally, no guarantee can be given that additional suitable acquisition targets or license partners can be found or that further acquisitions that are identified as strategically important can be realized.

Divestments on the other hand can lead to disruptions during the disposal process and liability vis-à-vis the buyer or additional expenses, for instance through indemnity clauses and guarantee commitments or long-term supply contracts. Furthermore, the achieved selling price could be perceived as too low by the market's.

If any of the aforementioned risks materialize, this could materially adversely affect the Group's business, financial condition, results of operations, cash flows and prospects.

Due to a complex group structure and the geographic reach of the Group's business activities, the Group could incur greater tax liabilities than expected and be affected by the levy of additional customs duties, contributions or other fees.

The companies of the Group operate in many countries that have complex tax systems. Due to the nature of operating activities performed by the Group, the tax issues the Group faces are complex. In the future, this could lead to disputes with tax authorities and could further lead to an increase in tax liabilities for the Group, even for past periods. The Group has corporate structures in place which may be scrutinized by authorities and could potentially lead to increased tax liabilities. All these effects and in addition, the

introduction of new customs duties, levies or other fees or increases in existing ones, could adversely affect the Group's business, financial condition, results of operations and prospects.

Changes in exchange rates and interest rates can adversely affect the Group's sales, profits and cash flows.

The Group operates worldwide and therefore also generates a substantial portion of its sales, earnings and expenses in currencies other than the euro. The foreign currencies involved include the U.S. dollar, the Swiss franc, the Japanese yen, the Chinese renminbi, the Taiwan dollar and the Korean Won in particular. Changes in the exchange rates of the relevant currencies versus the euro can have two different effects. First, because income and expenses in the relevant currencies seldom match up in the same period, unfavourable developments in exchange rates of these foreign currencies versus the euro can lead to a difference between the actual value of the product or service provided and the consideration received (transaction effect) due to cross-border deliveries of goods and performance of services. A negative difference has a direct effect on the Group's financial position and results of operations. Second, the Group's financial position and results of operations are affected by the translation of the financial statements of the consolidated subsidiaries prepared in the respective local currencies into euro, the Group's reporting currency in the course of consolidation of financial information (translation effect).

Furthermore, Merck Financial Services GmbH ("**Merck FS**") as the central financing entity for Merck, provides intercompany deposits, loans and in-house bank accounts in more than 30 currencies to Merck subsidiaries. Any change in currency exchange rates versus the euro, Merck FS's reporting currency, has a direct effect on Merck's profits. However, as almost all currency exposure arising from these activities is hedged by Merck FS, the effects are rather small.

The Group is also exposed to interest rate changes. Financing costs of future financing activities such as notes issues or loans are directly correlated with the interest rate levels. Rising interest rates before refinancing would reduce profits.

As most of the notes issued by the Group have fixed interest rates and funds are reinvested internally or on the capital markets with shorter maturities, the Group's profits can also be adversely affected by declining interest rates.

The effects of the international financial crisis on countries with high levels of sovereign debt can adversely affect the Group's sales, profits and cash flows.

The Group's customers include, primarily within the Healthcare Business Sector, sovereign countries and state-owned entities such as hospitals or public health services. Due to the lingering effects of the international financial crisis, some countries are experiencing severe economic problems and are burdened by a high level of sovereign debt. Due to this situation, such countries could reduce orders or order volumes with the Group. Furthermore, such countries might partially or totally cease payments to the Group for goods and services delivered in order to balance their budgets or to avoid even higher levels of sovereign debt. Such reduced orders and a cessation of payment could materially adversely affect the Group's business, financial condition, results of operations and prospects.

Default risks, in particular financial counterparties and customers defaulting on their receivables can adversely affect the Group's sales, profits and cash flows.

Default risks arise in connection with financial investments as well as receivables in operating business. The Group's counterparties may not be able to meet their contractual obligations. Defaults may materially adversely affect the Group's business, financial condition, results of operations and prospects.

Changes in fair values of tangible and intangible assets can adversely affect the Group's profits.

The values of individual items in the balance sheet are exposed to the risk of changing market and business circumstances and thus also to changes in fair values. This applies in particular to the high level of intangible assets including goodwill, which have become significantly more important in the consolidated financial statements due to the acquisitions of Merck Serono SA in 2007, Millipore Corporation in 2010, AZ Electronic Materials S.A. in 2014 and Sigma-Aldrich Corporation in 2015, as well as the related purchase price allocations. A need for write-downs in the future could significantly impact profit and could materially adversely affect the Group's business, financial condition, results of operations and prospects.

Possible confusion with MSD (Merck Sharp & Dohme) by customers could adversely affect the Group's business.

One of Group's competitors, US-based MSD (Merck Sharp & Dohme), operates under a similar name in the US and Canada. Yet there is no affiliation between the two companies. However, the use of "Merck" as a name and trademark is regulated by an agreement between Merck and MSD. In the US and Canada, MSD holds the rights to use "Merck" as a name and trademark, while Merck operates under the name and trademark EMD Serono, MilliporeSigma and EMD Performance Materials. Merck holds the rights to its name and trademark in the rest of the world, including key sales markets in Europe and Asia. Despite these regional distinctions, there is a risk that customers may confuse the two brands and therefore attribute products, and possible quality problems at MSD to the Group. Moreover, negative press about MSD could, for example, damage the reputation of the Group.

The Group is subject to a variety of statutory environmental regulations and could therefore be exposed to the risk of liability due to non-compliance or past pollution.

All of the Group's businesses worldwide are subject to a number of continually changing, developing and increasingly complex environmental and health protection requirements and regulations with regard to the handling of chemicals and hazardous substances. These regulations relate to the emission of pollutants, waste water and garbage disposal, and the investigation and elimination of soil and groundwater pollution. In the past, these requirements have resulted in the need to invest in equipping and retrofitting the Group's plants. The Group assumes that investments will be required for this purpose in the future as well. This would apply in particular if the regulations to be observed by the Group were to be considerably tightened. The Group can neither influence this risk, nor predict its effects. Any increase in the expenses required to meet such obligations could materially adversely affect the Group's business, financial condition, results of operations and prospects.

As of December 31, 2018, the Group operated 90 production facilities in a number of countries. Some of these locations have been used for industrial purposes for a long time. There can be no assurance that substances hazardous to the environment have not leaked into the air, groundwater or soil of the production facilities or neighbouring properties in the past or that these substances do not otherwise pose a hazard to the environment and that the Group will not be held responsible for remediation. This

applies regardless of whether the Group caused the pollution and also applies, depending on local laws, in principle to properties formerly owned by the Group that have been sold. Despite a contractual exclusion or limitation of liability in respect of the buyer, there can be no assurance that the Group will not be held responsible under public or private law as the former owner or user for environmental pollution that may become known in the future. The Group has provisions in place for the remediation of already identified soil and groundwater contamination. Even if the Group has defined standards for environment friendly operations and checks compliance on a regular basis, there can be no assurance for the future that the Group will not release substances in the course of its business activities that pollute the environment and that a company of the Group will not be held responsible for remediation.

The costs of the remediation of pollution that the Group would be liable for could materially adversely affect the Group's business, financial condition, results of operations and prospects. In addition, upon realization of these risks, the Group's public image or the Group's relationships with customers could suffer.

Unforeseen business interruptions at individual production facilities can lead to production bottlenecks and sales shortfalls at the Group.

Although the Group applies stringent technology and safety standards to the construction, operation and maintenance of its production plants, and chemical processes are performed in multi-purpose plants, as is common in the industry, the risk of business disruptions and interruptions cannot be ruled out. These may occur due to external factors that cannot be influenced by the Group (e.g. natural catastrophe or terrorism) or for other reasons, such as fire, explosions or the release of poisonous substances or substances hazardous to health. For example, in 2011, volumes of Xirallic® pigments declined significantly as a result of supply bottlenecks due to the temporary shut-down of the business unit's site in Onahama (Japan) caused by one of the strongest earthquakes Japan had ever experienced. To raise its future supply reliability, the business unit commissioned a second production site for Xirallic® pigments in Germany in early 2012, which helped the business to regain market share lost in this segment in 2011. In all of these cases there is a risk that people, third-party property or the environment could be harmed. The Group has purchased insurance policies to cover such risks in amounts it has deemed appropriate (e.g. property damage, third-party liability and business interruption insurance). However, no assurance can be given that this insurance coverage is sufficient. Furthermore, risks of production outages and the related supply bottlenecks can be triggered by technical problems in production facilities. The Group is working to continuously mitigate the risks by making regular investments, setting up alternative sourcing options and maintaining inventory levels.

Any business interruption that is not compensated for by corresponding insurance benefits or safety stock would result in a loss of sales. These events can also adversely affect the Group's reputation as well as business, financial condition, results of operations and prospects.

The Group faces risks due to product-related crime and espionage.

As a manufacturer and supplier of high-quality pharmaceuticals and chemicals, the Group – like other companies in the chemical and pharmaceutical industries – faces certain risks due to crime. These include, among others, theft, diversion, misuse and counterfeiting of products (including attempts at these crimes). The professionalism and complexity of product-related crime has increased significantly in recent years. In relevant cases, the Group works closely and trustfully with the competent law enforcement authorities on global level as well as in the countries concerned. To combat product-related crime, the Group established a cross-functional network covering all business segments ("Merck Anti-

Counterfeiting Operational Network"), which provides a reliable interface to authorities, associations and peer industry. This group has been successful in uncovering a number of illicit underground production facilities over the past years and is also influencing business activities and decision-making processes.

At the Group, the protection against the unwanted loss of information ("**Data Theft**") in possible form is managed under the headlines "cyber-security" and "anti-espionage". Above all, particular focus is given to the protection of trade secrets, sensitive, strategic and competitive business information as well as to general data protection schemes. This includes digital and non-digital working environments. With the aim of preventing unwanted loss of proprietary or confidential information, a high-ranking Intellectual Property Management Committee was established at the Group and a Data Leakage Prevention solution is subsequently rolled out in sensitive business areas. It applies a holistic protection concept that, in addition to technical IT security, information and data protection measures, also comprises further targeted security measures. Nevertheless, the risk of a loss of information due to espionage is classified as possible despite the measures taken and could materially adversely affect the Group's business, financial condition, results of operations and prospects.

The Group depends on efficient and secure operations and the further integration of IT and data processing systems.

The ability of the Group to keep its business running depends on the efficient and secure operation of its IT systems in all business sectors and supporting Group Functions. The growing connectivity of the IT landscape and the increasing dependency on IT make it necessary to invest heavily in maintenance, harmonization and enhancement. As example the acquisitions of Merck Serono SA, Millipore Corporation, AZ Electronic Materials S.A. and Sigma-Aldrich Corporation have required the integration and enhancement of different IT systems. In conjunction with constantly new legal and regulatory requirements, data processing represents an increasingly resource-consuming and therefore costly activity. Likewise, complications with the changeover of IT systems could negatively impact the earnings situation. Close monitoring of critical IT projects serves to mitigate this risk.

IT risks having an impact on business results could occur when information is not available in time, is erroneous, incomplete or unintentionally disclosed. Security vulnerabilities in IT solutions and insufficient contingency planning measures can materialize in incidents that affect the entire Group. The outsourcing of IT systems and the increased utilization of cloud-based solutions entail a higher risk of loss of availability, integrity and confidentiality. Moreover, data privacy violations owing to incorrect authorizations or incorrect processing can create a negative reputation.

To ensure that all IT risks are identified, assessed and that appropriate measures to reduce the risks to an acceptable level are taken, the Group is running an Information Security Management Framework based on ISO 27001. Risk Management is the foundation of the framework. It ensures that IT related risks are regularly identified and assessed in collaboration with the Group's business. Beside the already existing controls against threats which are continuously monitored and evaluated, additional measures are implemented if applicable. Furthermore, insurance solutions for cybercrime offenses are in place at Group level.

Notwithstanding this, IT systems and the data processed on these systems are generally susceptible to disruptions or damage. The disruption of the operation of these systems or the loss of important data, for example due to e-crime cannot be completely ruled out. The disruption of the operation of the IT systems used by the Group can affect the ability of the Group to efficiently run its business, production

and development processes, and therefore could materially adversely affect the Group's business, financial condition, result of operations and prospects.

The Group maintains a number of pension plans that, under certain circumstances, may not be covered by sufficient provisions or financed with sufficient assets in the future.

The Group offers access to certain pension plans to its employees in various countries, the structure of which depends on the legal, business and financial circumstances in the respective countries. The Group's pension obligations comprise both defined benefit and defined contribution plans and include both liabilities arising from current pensions, as well as entitlements to pensions to be paid in the future. The amount of liabilities is based on certain actuarial assumptions, which include among others discount factors, life expectancy, projected pension increases, future developments of wages and salaries, and the expected return on plan assets. If actual developments, particularly with regard to discount rates, differ from these assumptions, this could lead to a substantial increase in pension liabilities on the balance sheet and therefore to higher additions to provisions for pensions. If pension assets do not perform as expected, the Group will have to increase the amount of these provisions.

The Group can be exposed to risks from the use of social media.

The Group and its employees are active on numerous social media channels. The consistent and legally compliant use of the channels and their content is important in terms of increasing awareness of the Group's brand, among other things. Merck takes precautions and implements processes to ensure awareness of the proper handling of social media, controlling publication and actively managing communication. Nevertheless, reputational risks could result, for instance through public dialogs in social media.

There can be no assurance that the Group's control and risk management systems provide sufficient protection against losses arising from business risks or fraudulent actions.

The Group has control and risk management systems in place to identify business and financial risks at an early stage and take appropriate action to manage them. The control and risk management systems are designed to ensure that risks are monitored in a timely manner, all business transactions are properly accounted for, and reliable data on the Group's financial position is always available. When the Group makes acquisitions, it aims to bring the acquired units' control and risk management systems in line with those of the Group as quickly as possible. However, the control and risk management systems cannot provide absolute protection against losses arising from business risks or fraudulent actions and these issues could adversely affect the Group's business and reputation.

The interests of major shareholders of the Group may conflict with the interests of the Holders of Notes.

In the event that circumstances arise in which the interests of the major shareholders of Merck or of E. Merck KG the general partner holding an equity interest of approximately 70% of the total capital of Merck conflict with the interests of the Holders of Notes, the Holders of Notes may be disadvantaged by the ability of the major shareholders of Merck KGaA or of E. Merck KG to veto or otherwise block actions of Merck KGaA or any other company of the Group that may be in the interest of the Holders of Notes.

The benefits that Merck may realize from the Versum Acquisition could be materially different from the Group's expectations.

On April 12, 2019, Merck announced that it had signed a definitive agreement to acquire all the issued and outstanding shares of Versum Materials, Inc., USA, ("**Versum**") for US\$ 53 per share in cash the "**Versum Acquisition**"). Versum is a supplier of innovation-driven, high-purity process chemicals, gases and equipment for semiconductor manufacturing. Versum reported annual sales of approximately € 1.2 billion in its fiscal year 2018 of which more than two thirds were generated in Asia. Versum is headquartered in Tempe, Arizona, United States, had approximately 2,300 employees in 2018 and operates 15 manufacturing and seven research and development facilities throughout Asia and North America.

In the assessment of Merck, the Versum Acquisition could further strengthen Merck's Performance Materials business sector and its position as a leading supplier for electronic materials. Merck expects increased scale, product and service depth, true global presence, a strengthened supply chain and an expansion of the portfolio to include factory equipment, specialty gases and services. The aim of the Versum Acquisition is to create a leading electronic materials player focused on the semiconductor and display industries.

The Versum Acquisition was approved at a special meeting of Versum's stockholders on June 18, 2019. However, the consummation of the Versum Acquisition is uncertain at the time of this Prospectus and requires the satisfaction of customary closing conditions, including regulatory clearances. Should the Versum Acquisition not be consummated and should Merck publicly announce that it no longer intends to pursue the Versum Acquisition, the Terms and Conditions of the Notes provide for a right of the Issuer to call the Notes for redemption as described under "*Risk factors relating to the Notes — The Notes may be called and redeemed at the option of the Issuer on certain dates and at any time upon the occurrence of certain events. If the Notes are so redeemed, Holders of the Notes are exposed to the risk of a lower yield than expected.*"

In order to finance the Versum Acquisition, Merck has entered into a facility agreement with Bank of America Merrill Lynch, BNP Paribas Fortis and Deutsche Bank. The facility agreement consists of a USD 4.02 billion bridge loan and a USD 2.28 billion term loan. Merck plans to replace the bridge loan until the closing of the Versum Acquisition, *inter alia*, by issuing several series of subordinated and senior notes, including the Notes.

Although Merck was able to inspect and review internal documents of Versum and speak to key employees of the company in preparation of the acquisition process (customary due diligence for a transaction of this type and size), there can be no guarantee that Merck had access to all relevant information at the time of the investment decision. The valuation of Versum and the determination of the offered cash amount per Versum share was based on certain assumptions and the information available to Merck at the time and it cannot be ruled out that these assessments prove to be erroneous or incorrect.

The Versum Acquisition involves a number of risks, including, but not limited to:

- unexpected losses of key employees of Versum;
- extraordinary or unexpected legal, regulatory, contractual or other costs;
- challenges in managing the increased scope, geographic diversity and complexity of operations;

- mitigating contingent and/or assumed liabilities;
- the possible loss of customers and/or other business partners;
- control issues in a situation where Merck does not exercise sole control of Versum;
- the increase of Merck's leverage level.

Merck may not be able to realise the anticipated synergies, future earnings, transfer of know-how or other benefits that it intends to achieve from the Versum Acquisition. Merck cannot guarantee that the acquisition will yield benefits that are sufficient to justify the expenses the Group will incur. In addition, Merck may not be successful in consummating the Versum Acquisition. In this case, the expenses incurred would not realize the anticipated benefits for Merck.

The materialisation of any of the risks described above could have material adverse effects on the business, financial condition and results of operations of the Group.

Risk factors relating to the Notes

The Notes may not be a suitable investment for all investors

Potential investors should consider whether an investment in the Notes is appropriate in their respective circumstances and should consult with their legal, business, and tax advisors to determine the consequences of an investment in the Notes and to get their own idea about the investment.

An investment in the Notes is only suitable for investors who

- possess the required knowledge and experience in financial and business matters to evaluate the chances and risks of an investment in the Notes and the information contained or incorporated by reference into the Prospectus or any supplement thereto;
- have access to, and knowledge of, appropriate analytical tools to evaluate such chances and risks in the context of the potential investor's particular financial situation and to evaluate the impact the Notes will have on their overall investment portfolio;
- understand thoroughly the terms of the Notes and are familiar with the behaviour of the financial markets;
- are capable of bearing the economic risk of an investment in the Notes, including where the currency for principal or interest payments is different from the potential investor's currency;
- know that it may not be possible to dispose of the Notes for a substantial period of time, if at all; and
- are able to evaluate (either alone or with the help of a financial advisor) possible scenarios for economic, interest rate and other factors that may affect its investment and ability to bear the applicable risks.

The Notes are long-term securities in which an investment constitutes a financial risk for a long period.

The Notes will be redeemed on June 25, 2079, unless they have been previously redeemed or repurchased and cancelled. The Issuer is under no obligation to redeem the Notes at any time before this date. The Holders have no right to call for their redemption. Certain market expectations may exist among investors in the Notes with regard to the Issuer making use of a right to call the Notes for

redemption prior to their scheduled maturity. Should the Issuer's actions diverge from such expectations, the market value of the Notes could be adversely affected, and the liquidity of the Notes could be reduced.

Prospective investors should be aware that they may be required to bear the financial risks of an investment in the Notes for a long period and may not recover their investment before the end of this period.

The Holders are exposed to risks relating to fixed interest rate notes.

Until the respective First Reset Date of the Notes, the Notes bear interest at a fixed rate for the initial fixed rate period. A Holder of a fixed interest rate Note carries the risk that the prices of the Notes can fall as a result of changes in the interest rate on the market. While the nominal interest rate of the Notes is fixed for the entire initial fixed rate period of the Notes and thereafter will be reset every five years to the reference rate plus the relevant margin specified in the relevant Terms and Conditions, the current interest rate on the capital market ("**market interest rate**") typically changes on a daily basis. As the market interest rate changes, the price of a Note with a fixed interest rate also changes – but in the opposite direction. If the market interest rate increases, the price of a Note with a fixed interest rate typically falls until the yield of such a Note approximately equals the market interest rate. If the market interest rate decreases, the price of a fixed interest rate Note typically increases, until the yield of such Note is approximately equal to the market interest rate. Holders should be aware that movements of the market interest rate can adversely affect the market price of the Notes and can lead to losses for Holders if they sell their Notes.

In addition, the credit spread of the Issuer, on which the initial fixed interest rate and the margins applicable with regard to the determination of the interest rate for each Reset Period was based, may change. A credit spread is the margin payable by the Issuer to the Holders as a premium for the assumed credit risk of the Issuer. Credit spreads are offered and sold as premiums on current risk-free interest rates or as discounts on the price.

Factors influencing the credit spread include, among other things, the creditworthiness and rating of the Issuer, probability of default, recovery rate, remaining term to maturity of obligations under any collateralisation or guarantee and declarations as to any preferred payment or subordination. The liquidity situation, the general level of interest rates, overall economic developments, and the currency, in which the relevant obligation is denominated may also have a positive or negative effect.

Investors are exposed to the risk that the credit spread of the Issuer widens, resulting in a decrease in the price of the Notes.

The Holders are exposed to risks relating to the reset of interest rates linked to the 5-year Swap Rate.

Starting with the end of the initial fixed interest rate period, the Notes bear interest at a rate which will be determined on each respective reset date at the 5-year swap rate for the relevant reset period plus a margin.

Investors should be aware that the performance of the 5-year swap rate and the interest income on the Notes cannot be anticipated.

Due to varying interest income, investors are not able to determine a definite yield of the Notes at the time they purchase them, so that their return on investment cannot be compared with that of investments having longer fixed interest periods.

Investors in the Notes should bear in mind that neither the current nor the historical level of the 5-year swap rate is an indication of the future development of such 5-year swap rate.

Furthermore, during each Reset Period, it cannot be ruled out that the price of the Notes may fall as a result of changes in the market interest rate, as the market interest rate fluctuates. During each of these periods, the investor is exposed to the risk as described under "*The Holders are exposed to risks relating to fixed interest rate notes*".

Risks associated with the reform of interest rate 'benchmarks'

Following the respective First Reset Date, interest amounts payable under the Notes are calculated by reference to the annual swap rate for swap transactions denominated in Euro with a term of 5 years, which appears on the Reuters Screen Page ICESWAP2.

This swap-rate, the underlying Euro Interbank Offered Rate ("**EURIBOR**") and other interest rates or other types of rates and indices which are deemed "benchmarks" (each a "**Benchmark**" and together, the "**Benchmarks**") have become the subject of regulatory scrutiny and recent national and international regulatory guidance and proposals for reform. Some of these reforms are already effective whilst others are still to be implemented. These reforms may cause such Benchmarks to perform differently than in the past, or to disappear entirely, or have other consequences which cannot be predicted. Any such consequence could have a material adverse effect on the Notes.

International proposals for reform of Benchmarks include the European Council's regulation (EU) 2016/1011 of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014 (the "**Benchmark Regulation**") which is fully applicable since 1 January 2018.

The Benchmark Regulation could have a material impact on the Notes, including in any of the following circumstances:

- a rate or index which is a Benchmark may only be used if its administrator obtains authorisation or is registered and in case of an administrator which is based in a non-EU jurisdiction, if the administrator's legal benchmark system is considered equivalent (Art. 30 Benchmark Regulation), the administrator is recognised (Art. 32 Benchmark Regulation) or the relevant Benchmark is endorsed (Art. 33 Benchmark Regulation) (subject to applicable transitional provisions). If this is not the case, Notes linked to such Benchmarks could be impacted; and
- the methodology or other terms of the Benchmark could be changed in order to comply with the terms of the Benchmark Regulation, and such changes could have the effect of reducing or increasing the rate or level or affecting the volatility of the published rate or level, and could have an impact on the Notes, including determination of the rate by the Issuer, the Calculation Agent or an independent adviser, as the case may be.

In addition to the aforementioned Benchmark Regulation, there are numerous other proposals, initiatives and investigations which may impact Benchmarks.

Following the implementation of any such potential reforms, the manner of administration of Benchmarks may change, with the result that they may perform differently than in the past, or Benchmarks could be eliminated entirely, or there could be other consequences which cannot be predicted.

Any changes to a Benchmark as a result of the Benchmark Regulation or other initiatives, could have a material adverse effect on the costs of administering or otherwise participating in the setting of a Benchmark and complying with any such regulations or requirements. Investors should be aware that any changes to a relevant Benchmark may have a material adverse effect on the value of the Notes.

Under the terms and conditions of the Notes, certain benchmark replacement provisions will apply in case a Benchmark (or any component part thereof) used as a reference for the calculation of interest amounts payable under the Notes were to be discontinued or otherwise unavailable:

If a Benchmark (or any component part thereof) used to calculate interest amounts payable under the Notes for any interest period has ceased to be calculated or administered, the Issuer shall endeavour to appoint an independent adviser, which must be an independent financial institution of international repute or other independent financial adviser experienced in the international capital markets. Such independent adviser will be tasked with determining whether an officially recognized successor rate to the discontinued Benchmark exists. If that is not the case, the independent adviser will attempt to find an alternative rate which, possibly after application of adjustments or spreads, can replace the discontinued Benchmark. If the independent adviser determines a successor rate or alternative rate (the "**New Benchmark Rate**"), such rate will replace the previous Benchmark for purposes of determining the relevant rate of interest. Such determination will be binding for the Issuer, the Calculation Agent, the Paying Agents and the Holders of Notes. Any amendments pursuant to these fallback provisions will apply with effect from the respective effective date specified in the terms and conditions of the Notes.

If the Issuer fails to appoint an independent adviser or if the adviser fails to determine a New Benchmark Rate following a discontinuation of a relevant Benchmark, the reference rate applicable to the immediately following reset period shall be the original benchmark rate determined on the last preceding interest determination date, provided, however, that, in case of the first reset period, the reference rate shall be the original benchmark rate on the screen page on the last day preceding the interest determination date on which such original benchmark rate was displayed.

The replacement of a Benchmark could have adverse effects on the economic return of the Holder of Notes compared to the applicable original benchmark rate.

Holders are subject to the risk of a partial or total failure of the Issuer to make interest and/or redemption payments.

Any person who purchases the Notes is relying on the creditworthiness of the Issuer and has no rights against any other person. Holders are subject to the risk of a partial or total failure of the Issuer to make interest and/or redemption payments that the Issuer is obliged to make under the Notes. The worse the creditworthiness of the Issuer, the higher the risk of loss (see also "*Risk factors relating to the Issuer*" above). A materialisation of the credit risk may result in partial or total failure of the Issuer to make interest and/or redemption payments under the Notes.

In addition, even if the likelihood that the Issuer will be in a position to fully perform all obligations under the Notes, when they fall due actually has not decreased, market participants could nevertheless be of that opinion. Market participants may in particular be of such opinion if market participants' assessment of the creditworthiness of corporate debtors in general or debtors operating in the industries sector adversely change. If any of these risks occur, third parties would only be willing to purchase the Notes for a lower price than before the materialisation of said risk. The market value of the Notes may therefore decrease.

Interest payments under the Notes may be deferred at the option of the Issuer.

Holder should be aware that interest may not be due and payable (*fällig*) on the scheduled Interest Payment Date, and that the payment of the resulting Deferred Interest Payments is subject to certain further conditions. Failure to pay interest as a result of an interest deferral will not constitute a default of the Issuer or a breach of any other obligations under the Notes or for any other purposes. Holders will not receive any additional interest or compensation for the deferral of payment. In particular, the resulting Deferred Interest Payments will not bear interest.

Any deferral of interest payments will likely have an adverse effect on the market price of the Notes. In addition, as a result of the interest deferral provision of the Notes, the market price of the Notes may be more volatile than the market prices of other debt securities on which interest accrues that are not subject to such deferrals and may be more sensitive generally to adverse changes in the Issuer's financial condition.

The Holders have no voting rights.

The Notes are non-voting with respect to general meetings of the Issuer. Consequently, the Holders cannot influence any decisions by the Issuer to defer interest payments or to optionally settle such Deferred Interest Payments or any other decisions concerning the capital structure or any other matters relating to the Issuer.

The Holders' only remedy against the Issuer is the institution of legal proceedings to enforce payment or to file an application for insolvency proceedings.

The only remedy against the Issuer available to the Holders for recovery of amounts which have become due in respect of the Notes will be the institution of legal proceedings to enforce payment of the amounts or to file an application for the institution of insolvency proceedings. On an insolvency or liquidation of the Issuer, any Holder may only declare its Notes due and payable and may claim the amounts due and payable under the Notes, after the Issuer has discharged or secured in full (i.e. not only with a quota) all claims that rank senior to the Notes.

The Holders have limited rights in German insolvency proceedings.

In an insolvency over the assets of the Issuer, claims against the Issuer under the Notes would be treated as deeply subordinated insolvency claims (*nachrangige Insolvenzforderungen*). According to section 174 paragraph 3 of the German Insolvency Code, deeply subordinated insolvency claims must not be registered with the insolvency court unless the insolvency court handling the case has granted special permission allowing these deeply subordinated insolvency claims to be filed which is not the rule, but the exception. The Holders would not participate in any creditors' committee (*Gläubigerausschuss*) pursuant to German Insolvency Code and would have very limited rights within the creditors' assembly (*Gläubigerversammlung*) pursuant to German Insolvency Code. They may be invited to participate in the creditors' assembly but would not be entitled to vote within such meetings (section 77 paragraph 1 of the German Insolvency Code).

In case of insolvency plan proceedings (*Insolvenzplanverfahren*) the Holders generally would have no voting right on the adoption of an insolvency plan presented by the Issuer, the relevant insolvency administrator or custodian (sections 237 and 246 of the German Insolvency Code). In addition, their claims would be waived after the adoption of the insolvency plan unless the insolvency plan makes an exception to this general rule (section 225 paragraph 1 German Insolvency Code).

The Notes do not include express events of default or a cross default.

The Holders should be aware that the Terms and Conditions of the Notes do not contain any express event of default provisions. There will also not be any cross default under the Notes.

There is no limitation on issuing further debt ranking senior to, or pari passu with, the Notes.

There is no restriction on the amount of debt which the Issuer may issue ranking senior or equal to the obligations under or in connection with the Notes. Such issuance of further debt would reduce the amount recoverable by the Holders upon insolvency or liquidation of the Issuer or may increase the likelihood that the Issuer is required or permitted to defer payments of interest under the Notes. Holders will not be protected under the terms of the Notes in the event of a highly leveraged transaction, a reorganization or a restructuring, merger or similar transaction that may adversely affect Holders.

The Notes may be called and redeemed at the option of the Issuer on certain dates and at any time upon the occurrence of certain events. If the Notes are so redeemed, Holders of the Notes are exposed to the risk of a lower yield than expected.

The Issuer may redeem all outstanding Notes of each Series (i) during the period from and including the relevant First Call Date to and including the relevant First Reset Date or on any Interest Payment Date thereafter, or (ii) for reason of minimal outstanding amount, or (iii) if the Issuer has become or will become obligated to pay Additional Amounts in respect to the Notes due to withholding or deduction or on account of, any current or future taxes or any other dues imposed, levied, collected, or withheld by or on behalf of Germany, or for its account or from or for the account of an area municipality authorised to raise taxes or an agency in Germany, or (iv) if interest payable in respect of the Notes is or will no longer be fully income tax deductible, or (v) S&P or any other rating agency eligible under the Terms and Conditions publishes that the Notes due to a change in hybrid rating methodology or the interpretation thereof will no longer be eligible for the Initial Category of Equity Credit (as defined in the Terms and Conditions) or a higher category of equity credit (or such similar nomenclature as being used by such rating agency), or (vi) upon the occurrence of a Change of Control Event (as defined in § 5(7) of the Terms and Conditions), or (vii) upon occurrence of an Acquisition Event (as defined in § 5(3) of the Terms and Conditions).

If the Notes are redeemed prior to their scheduled maturity, Holders of the Notes are exposed to the risk that due to such redemption their investment will have a lower than expected yield. In such circumstances, the investor might not be able to reinvest the redemption proceeds in a comparable security at an effective interest rate as high as that of the Notes.

The Notes are subordinated to senior and subordinated obligations of the Issuer.

The Issuer's obligations under each Series of Notes are unsecured deeply subordinated obligations of the Issuer ranking junior to all unsubordinated obligations and to all subordinated obligations within the meaning of section 39 paragraph 1 of the German Insolvency Code (*Insolvenzordnung*) and at least pari passu amongst themselves and with all present unsecured obligations of the Issuer which rank junior to all unsubordinated obligations and to all subordinated obligations under section 39 paragraph 1 of the German Insolvency Code, except for any subordinated obligations required to be preferred by mandatory provisions of law or as expressly provided for by the terms of the relevant instrument. The obligations of the Issuer under the Notes are senior only to the claims of the Issuer's general partners (*persönlich haftende Gesellschafter*) and limited partnership shareholders (*Kommanditaktionäre*) arising out of their respective participation in the equity of the Issuer.

In the event of winding-up, dissolution, liquidation of the Issuer the obligations of the Issuer under the Notes, and in case of the insolvency of the Issuer or composition or other proceedings for the avoidance of insolvency of the Issuer, the rights of the Holders towards the Issuer under the Notes are subordinated to the claims of all holders of unsubordinated obligations and subordinated obligations within the meaning of section 39 paragraph 1 of the German Insolvency Code, so that in any such case payments in respect of the Notes will not be made until all claims against the Issuer under obligations which rank senior to obligations of the Issuer under the Notes have been satisfied in full (i.e. not only with a quota).

Investors should take into consideration that liabilities ranking senior to the Notes may also arise out of events that are not reflected on the Issuer's balance sheet, including, without limitation, the issuance of guarantees or other payment undertakings. Claims of beneficiaries under such guarantees or other payment undertakings will, in liquidation or insolvency proceedings of the Issuer, become unsubordinated or subordinated liabilities and will therefore be paid in full before payments are made to the Holders.

There is no active public trading market for the Notes.

There is currently no secondary market for the Notes. Application has been made to the Luxembourg Stock Exchange for each Series of Notes to be admitted to trading on the Regulated Market of the Luxembourg Stock Exchange, which is a regulated market for the purposes of Directive 2014/65/EU, and to be listed on the Official List of the Luxembourg Stock Exchange. There can, however, be no assurance regarding the future development of a liquid secondary market for the Notes or the ability of Holders to sell their Notes or the price at which Holders may be able to sell their Notes. If such a market were to develop, the Notes could trade at prices that may be higher or lower than the initial offering price depending on many factors, including prevailing interest rates, Merck's operating results, the market for similar securities and other factors, including general economic conditions, performance and prospects, as well as recommendations of securities analysts. The liquidity of, and the trading market for, the Notes may also be adversely affected by declines in the market for debt securities generally. Such a decline may affect any liquidity and trading of the Notes independent of Merck's financial performance and prospects. In an illiquid market, an investor might not be able to sell the Notes at any time at fair market prices. The possibility to sell the Notes might additionally be restricted by country specific reasons. A buyer of a Note must therefore be prepared to retain the Notes until final redemption.

An investment in the Notes may be subject to the risk of inflation.

The inflation risk is the risk of future money depreciation. The real yield from an investment is reduced by inflation. The higher the rate of inflation, the lower the real yield on the Notes. If the inflation rate is equal to or higher than the nominal yield, the real yield is zero or even negative.

There may be transaction costs and/or charges in connection with the purchase or sale of the Notes.

When the Notes are purchased or sold, several types of incidental costs (including transaction fees and commissions) are incurred in addition to the purchase or sale price of the Notes. Credit institutions as a rule charge commissions which are either fixed minimum commissions or pro-rata commissions, depending on the order value. To the extent that additional – domestic or foreign – parties are involved in the execution of an order, including but not limited to domestic dealers or brokers in foreign markets, Holders may also be charged for the brokerage fees, commissions and other fees and expenses of such parties (third party costs). These incidental costs may significantly reduce or eliminate any profit from holding the Notes.

The income under the Notes may be reduced by taxes.

Potential purchasers and sellers of the Notes should be aware that they may be required to pay taxes or other documentary charges or duties in accordance with the laws and practices of the country where the Notes are transferred or other jurisdictions. In some jurisdictions, no official statements of the tax authorities or court decisions may be available for financial instruments such as the Notes. Potential investors are advised not to rely on the tax summary contained in this Prospectus but to ask for their own tax adviser's advice on their individual taxation with respect to the acquisition, sale and redemption of the Notes. Only these advisors are in a position to duly consider the specific situation of the potential investor.

Risk of change in market value.

The market value of the Notes is influenced by a change in the creditworthiness (or the perception thereof) of the Issuer and by the credit rating of the Issuer and a number of other factors including, but not limited to, market interest and rate of return and certain market expectations with regard to the Issuer making use of a right to call the Notes for redemption during the period from and including the relevant First Call Date to and including the relevant First Reset Date or on a certain Interest Payment Date thereafter.

The value of the Notes depends on a number of interacting factors, including, but not limited to, economic and political events in Germany or elsewhere, factors affecting the capital markets in general and the stock exchanges on which the Notes are traded. The price at which a Holder can sell the Notes might be considerably below the issue price or the purchase price paid by such Holder.

Risk of change in rating.

Ratings assigned to the Issuer by certain independent rating agencies are an indicator of the Issuer's ability to meet its obligations in a timely manner. The lower the assigned rating is on the respective scale the higher the respective rating agency assesses the risk that obligations will not be met at all or not be met in a timely manner. The market value of the Notes from time to time is likely to depend upon the level of credit rating assigned to the long-term debt of the Issuer. Rating agencies may change, suspend or withdraw their ratings at short notice; in particular the proposed acquisition of Versum Materials (see "*Risk factors relating to the Issuer*" – "*The benefits that Merck may realize from the Versum Acquisition could be materially different from the Group's expectations*" above) may result in the lowering of the rating agencies' assessment of the credit worthiness of the Issuer which may result in a downgrade of the Issuer's credit rating and a downgrade of the rating assigned to the Notes. A rating's change, suspension or withdrawal may affect the price and the market value of the outstanding Notes. An investor may thus incur financial disadvantages as he may not be able to sell the Notes at a fair price. The Notes are expected to be assigned a credit rating by Moody's, S&P and Scope Ratings. The ratings may not reflect the potential impact of all risks related to the structure, market and additional factors discussed herein, and other factors that may affect the value of the Notes. In addition, Moody's, S&P, Scope Ratings or any other rating agency may change its methodologies for rating securities with features similar to the Notes in the future. This may include the relationship between ratings assigned to an issuer's senior securities and ratings assigned to securities with features similar to the Notes, sometimes called "notching". If the rating agencies were to change their practices for rating such securities in the future and the ratings of the Notes were to be subsequently lowered, this may have a negative impact on the trading price of the Notes. A credit rating is not a recommendation to buy, sell or hold securities and may be revised or withdrawn by the rating agency at any time.

No assurance can be given as to the impact of any possible judicial decision or change of laws or administrative practices after the date of this Prospectus.

The Terms and Conditions of the Notes are based on German law in effect as at the date of this Prospectus. No assurance can be given as to the impact of any possible judicial decision or change to German law or administrative practice or the official application or interpretation of German law after the date of this Prospectus.

A potential investor may not rely on the Issuer, the Joint Bookrunners or any of their respective affiliates in connection with its determination as to the legality of its acquisition of the Notes.

Each potential investor in the Notes must determine, based on its own independent review and such professional advice as it deems appropriate under the circumstances, that its acquisition of the Notes is fully consistent with its (or if it is acquiring the Notes in a fiduciary capacity, the beneficiary's) financial needs, objectives and condition, complies and is fully consistent with all investment policies, guidelines and restrictions applicable to it (whether acquiring the Notes as principal or in a fiduciary capacity) and is a fit, proper and suitable investment for it (or if it is acquiring the Notes in a fiduciary capacity, for the beneficiary), notwithstanding the clear and substantial risks inherent in investing in or holding the Notes.

A potential investor may not rely on the Issuer, the Joint Bookrunners or any of their respective affiliates in connection with its determination as to the legality of its acquisition of the Notes or as to the other matters referred to above.

Without independent review and advice, an investor may not adequately understand the risks inherent with an investment in the Notes and may lose parts or all of its capital invested without taking such or other risks into consideration before investing in the Notes.

Because the Global Notes are held by or on behalf of Euroclear and Clearstream, Luxembourg, investors will have to rely on their procedures for transfer, payment and communication with the Issuer.

Each Series of Notes will be represented by one or more Global Notes. Such Global Notes will be deposited with a common depository for Euroclear and Clearstream, Luxembourg. Investors will not be entitled to receive definitive notes. Euroclear and Clearstream, Luxembourg will maintain records of the beneficial interests in the Global Notes. While the Notes are represented by one or more Global Notes, investors will be able to trade their beneficial interests only through Euroclear and Clearstream, Luxembourg and the Issuer will discharge its payment obligations under the Notes by making payments to the common depository for Euroclear and Clearstream, Luxembourg for distribution to their account holders. A holder of a beneficial interest in the Global Notes must rely on the procedures of Euroclear and Clearstream, Luxembourg to receive payments under the Notes. The Issuer has no responsibility or liability for the records relating to, or payments made in respect of beneficial interests in, the Global Notes.

Certain rights of the Holders under the Terms and Conditions may be amended or reduced or even cancelled by Holders' resolutions and any such resolutions will be binding for all Holders of the respective Series of Notes. Any such resolution may effectively be passed with the consent of less than a majority of the aggregate principal amount of the respective Series of Notes outstanding.

Since the Terms and Conditions of each Series of Notes provide for meetings of Holders of the respective Series of Notes or the taking of votes without a meeting, the Terms and Conditions of such

Series of Notes may be amended by majority resolution of the Holders of such Series of Notes and a Holder is subject to the risk of being outvoted by a majority resolution of the Holders of the respective Series of Notes. The rules pertaining to resolutions of Holders are set out in the German Act on Debt Securities of 2009 (*Schuldverschreibungsgesetz* – "**SchVG**") and are for the most part mandatory. According to the SchVG the relevant majority for Holders' resolutions is generally based on votes cast, rather than on the aggregate principal amount of the relevant Notes outstanding, therefore, any such resolution may effectively be passed with the consent of less than a majority of the aggregate principal amount of the respective Series of Notes outstanding. As such majority resolution is binding on all Holders of the respective Series of Notes, certain rights of such Holder against the Issuer under the Terms and Conditions of such Series of Notes may be amended or reduced or even cancelled.

If a Holders' representative will be appointed for the respective Series of Notes the Holders of the respective Series of Notes may be deprived of their individual right to pursue and enforce their rights under the respective Terms and Conditions against the Issuer.

Since the Terms and Conditions of each Series of Notes provide that the Holders of the respective Series of Notes are entitled to appoint a Holders' Representative by a majority resolution of such Holders, it is possible that a Holder may be deprived of its individual right to pursue and enforce its rights under the Terms and Conditions of such Series of Notes against the Issuer, such right passing to the Holders' Representative who is then exclusively responsible to claim and enforce the rights of all the Holders of the relevant Series of Notes.

Exchange rate risks and exchange controls.

The Notes are denominated in Euro. Potential investors should bear in mind that an investment in the Notes involves currency risks. This presents certain risks relating to currency conversions if a Holder's financial activities are denominated principally in a currency or currency unit (the investor's currency) other than Euro. These include the risk that exchange rates may change significantly (including changes due to devaluation of the Euro or revaluation of the investor's currency) and the risk that authorities with jurisdiction over the investor's currency may impose or modify exchange controls. An appreciation in the value of the investor's currency relative to the Euro would decrease (i) the investor's currency-equivalent yield on the Notes, (ii) the investor's currency equivalent value of the principal payable on the Notes and (iii) the investor's currency-equivalent market value of the Notes.

In addition, government and monetary authorities may impose (as some have done in the past) exchange controls that could adversely affect an applicable currency exchange rate. As a result, Holders may receive less interest or principal than expected, or no interest or principal.

Financial Transactions Tax ("FTT")

On February 14, 2013, the European Commission published a proposal (the "**Commission's Proposal**") for a Directive for a common financial transactions tax (the "**FTT**"). According to the Commission's Proposal, the FTT shall be implemented in certain EU Member States, including Germany (the "**Participating Member States**").

Pursuant to the Commission's Proposal, the FTT shall be payable on financial transactions provided at least one party to the financial transaction is established or deemed established in a Participating Member State and there is a financial institution established or deemed established in a Participating Member State which is a party to the financial transaction or is acting in the name of a party to the transaction. The FTT shall, however, not apply to (inter alia) primary market transactions referred to in

Article 5(c) of Regulation (EC) No 1287/2006, including the activity of underwriting and subsequent allocation of financial instruments in the framework of their issue. Thus, the issuance of the Notes should not be subject to the FTT.

The rates of the FTT shall be fixed by each Participating Member State but for transactions involving financial instruments other than derivatives shall amount to at least 0.1% of the taxable amount. The taxable amount for such transactions shall in general be determined by reference to the consideration paid or owed in return for the transfer. The FTT shall be payable by a financial institution established or deemed established in a Participating Member State which is a party to the financial transaction, acting in the name of a party to the transaction or where the transaction has been carried out on its account. Where the FTT due has not been paid within the applicable time limits, each party to a financial transaction, including persons other than financial institutions, shall become jointly and severally liable for the payment of the FTT due.

According to the coalition agreement between the German Christian Democratic Party (CDU) and the German Social Democratic Party (SPD), the current German government still has the intention to introduce a FTT. In June 2018, Germany and France agreed to further pursue the implementation of a FTT in the EU for which the current French financial transaction tax (which is mainly focused on transactions regarding shares in listed companies with a market capitalization of more than EUR 1 billion), could serve as a role model.

Nevertheless, the FTT remains subject to negotiation between the Participating Member States and was (and most probably will be) the subject of legal challenge. It may still be adopted and be altered prior to its adoption, the timing of which still remains unclear. Moreover, once any directive has been adopted (the "**Directive**"), it will need to be implemented into the respective domestic laws of the still Participating Member States and the domestic provisions implementing the Directive might deviate from the Directive itself. Finally, additional EU Member States may decide to participate.

Prospective investors should consult their own tax advisers in relation to the consequences of the FTT associated with subscribing for, purchasing, holding and disposing of the Notes.

TERMS AND CONDITIONS OF THE NC5.5 NOTES

ANLEIHEBEDINGUNGEN

Diese Anleihebedingungen sind in deutscher Sprache abgefasst und mit einer Übersetzung in die englische Sprache versehen. Der deutsche Wortlaut ist allein rechtsverbindlich. Die englische Übersetzung dient nur der Information.

§ 1

DEFINITIONEN UND AUSLEGUNG

Soweit aus dem Zusammenhang nicht etwas anderes hervorgeht, haben die nachfolgenden Begriffe in diesen Anleihebedingungen die folgende Bedeutung:

"**5-Jahres-Swapsatz**" hat die in § 4(2)(e) festgelegte Bedeutung.

"**Akquisitionsereignis**" hat die in § 5(3) festgelegte Bedeutung.

"**Alternativ-Benchmarksatz**" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"**Anfängliche Eigenkapitalanrechnungskategorie**" hat die in § 5(3) festgelegte Bedeutung.

"**Anfängliche Marge**" hat die in § 4(2)(b) festgelegte Bedeutung.

"**Anpassungsspanne**" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"**Anwendbarer Zinssatz**" hat die in § 4(1) festgelegte Bedeutung.

"**Benchmark-Änderungen**" hat die in § 4(2)(h)(v) festgelegte Bedeutung.

"**Benchmark-Ereignis**" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"**Berechnungsstelle**" hat die in § 7(2) festgelegte Bedeutung.

"**CBL**" hat die in § 2(3) festgelegte Bedeutung

"**Clearingsystem**" hat die in § 2(3) festgelegte Bedeutung.

"**Code**" hat die in § 8(4) festgelegte Bedeutung.

"**Dauerglobalurkunde**" hat die in § 2(2)(a) festgelegte Bedeutung.

"**Depotbank**" hat die in § 14(3) festgelegte Bedeutung.

"**Emittentin**" hat die in § 2(1) festgelegte Bedeutung.

TERMS AND CONDITIONS

These Terms and Conditions are written in the German language and provided with an English language translation. The German text will be the only legally binding version. The English language translation is provided for convenience only.

§ 1

DEFINITIONS AND INTERPRETATION

Unless the context otherwise requires, the following terms shall have the following meanings in these Terms and Conditions:

"**5 year Swap Rate**" has the meaning specified in § 4(2)(e).

"**Acquisition Event**" has the meaning specified in § 5(3).

"**Alternative Benchmark Rate**" has the meaning specified in § 4(2)(h)(vii).

"**Initial Category of Equity Credit**" has the meaning specified in § 5(3).

"**Initial Margin**" has the meaning specified in § 4(2)(b).

"**Adjustment Spread**" has the meaning specified in § 4(2)(h)(vii).

"**Prevailing Interest Rate**" has the meaning specified in § 4(1).

"**Benchmark Amendments**" has the meaning specified in § 4(2)(h)(v).

"**Benchmark Event**" has the meaning specified in § 4(2)(h)(vii).

"**Calculation Agent**" has the meaning specified in § 7(2).

"**CBL**" has the meaning specified in § 2(3).

"**Clearing System**" has the meaning specified in § 2(3).

"**Code**" has the meaning specified in § 8(4).

"**Permanent Global Note**" has the meaning specified in § 2(2)(a).

"**Custodian**" has the meaning specified in § 14(3).

"**Issuer**" has the meaning specified in § 2(1).

"**Endfälligkeitstag**" hat die in § 5(1) festgelegte Bedeutung.

"**Ersetzungs-Garantie**" hat die in § 10(1)(d) festgelegte Bedeutung.

"**Erste Step-Up Marge**" hat die in § 4(2)(c) festgelegte Bedeutung.

"**Erster Resettag**" hat die in § 4(2)(a) festgelegte Bedeutung.

"**Erster Rückzahlungstag**" hat die in § 5(4) festgelegte Bedeutung.

"**Erster Step-Up Tag**" hat die in § 4(2)(b) festgelegte Bedeutung.

"**EUR**" hat die in § 2(1) festgelegte Bedeutung.

"**Euroclear**" hat die in § 2(3) festgelegte Bedeutung.

"**Festgelegte Stückelung**" hat die in § 2(1) festgelegte Bedeutung.

"**Feststellungsperiode**" hat die in § 4(6) festgelegte Bedeutung.

"**Feststellungstermin**" hat die in § 4(6) festgelegte Bedeutung.

"**Gemeinsamer Vertreter**" hat die in § 11(5) festgelegte Bedeutung.

"**Geschäftstag**" bezeichnet einen Tag (außer einem Samstag oder Sonntag), an dem das Clearingsystem sowie alle betroffenen Bereiche des Trans-European Automated Real-time Gross Settlement Express Transfer System (TARGET2) betriebsbereit sind, um die betreffenden Zahlungen weiterzuleiten.

"**Gläubiger**" hat die in § 2(4) festgelegte Bedeutung.

"**Gleichrangige Wertpapiere**" hat die in § 3(1) festgelegte Bedeutung.

"**Globalurkunden**" hat die in § 2(2)(a) festgelegte Bedeutung.

"**Hauptzahlstelle**" hat die in § 7(1) festgelegte Bedeutung.

"**ICSDs**" hat jeweils die in § 2(3) festgelegte Bedeutung.

"**International Central Securities Depository**" hat die in § 2(3) festgelegte Bedeutung.

"**Kontrollwechsel**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Maturity Date**" has the meaning specified in § 5(1).

"**Substitution Guarantee**" has the meaning specified in § 10(1)(d).

"**First Step-Up Margin**" has the meaning specified in § 4(2)(c).

"**First Reset Date**" has the meaning specified in § 4(2)(a).

"**First Call Date**" has the meaning specified in § 5(4).

"**First Step-Up Date**" has the meaning specified in § 4(2)(b).

"**EUR**" has the meaning specified in § 2(1).

"**Euroclear**" has the meaning specified in § 2(3).

"**Specified Denomination**" has the meaning specified in § 2(1).

"**Determination Period**" has the meaning specified in § 4(6).

"**Determination Date**" has the meaning specified in § 4(6).

"**Holders' Representative**" has the meaning specified in § 11(5).

"**Business Day**" means a day (other than a Saturday or a Sunday) on which the Clearing System as well as all relevant parts of the Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2) are operational to forward the relevant payments.

"**Holder**" has the meaning specified in § 2(4).

"**Parity Securities**" has the meaning specified in § 3(1).

"**Global Notes**" has the meaning specified in § 2(2)(a).

"**Principal Paying Agent**" has the meaning specified in § 7(1).

"**ICSDs**", respectively, has the meaning specified in § 2(3).

"**International Central Securities Depository**" has the meaning specified in § 2(3).

"**Change of Control**" has the meaning specified in § 5(7)(c).

"Kontrollwechselereignis" hat die in § 5(7)(c) festgelegte Bedeutung.

"Kontrollwechsel-Mitteilung" hat die in § 5(7)(a) festgelegte Bedeutung.

"Kontrollwechsel-Stichtag" hat die in § 5(7)(c) festgelegte Bedeutung.

"Konzerninterne Zahlungen" hat die in § 4(8)(c) festgelegte Bedeutung.

"Moody's" hat die in § 5(7)(c) festgelegte Bedeutung.

"Nachfolge-Benchmarksatz" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"Nachfolgeschuldnerin" hat die in § 10(1) festgelegte Bedeutung.

"Neuer Benchmarksatz" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"Nominierungsgremium" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"Obligatorisches Zahlungereignis" hat die in § 4(8)(c) festgelegte Bedeutung.

"Qualifizierte Mehrheit" hat die in § 11(2) festgelegte Bedeutung.

"Quellensteuer-Ereignis" hat die in § 5(3) festgelegte Bedeutung.

"Ratingagentur" hat die in § 5(7)(c) festgelegte Bedeutung.

"Ratingagenturereignis" hat die in § 5(3) festgelegte Bedeutung.

"Rechtsstreitigkeiten" hat die in § 14(2) festgelegte Bedeutung.

"Referenzbanken" hat die in § 4(2)(e) festgelegte Bedeutung.

"Referenzbankensatz" hat die in § 4(2)(e) festgelegte Bedeutung.

"Referenzsatz" hat die in § 4(2)(e) festgelegte Bedeutung.

"Relevante Ratingagentur" hat die in § 5(3) festgelegte Bedeutung.

"Reset-Bildschirmseite" hat die in § 4(2)(e) festgelegte Bedeutung.

"Resettag" hat die in § 4(2)(e) festgelegte Bedeutung.

"Change of Control Event" has the meaning specified in § 5(7)(c).

"Change of Control Notice" has the meaning specified in § 5(7)(a).

"Change of Control Effective Date" has the meaning specified in § 5(7)(c).

"Intra-Group Payments" has the meaning specified in § 4(8)(c).

"Moody's" has the meaning specified in § 5(7)(c).

"Successor Benchmark Rate" has the meaning specified in § 4(2)(h)(vii).

"Substitute Debtor" has the meaning specified in § 10(1).

"New Benchmark Rate" has the meaning specified in § 4(2)(h)(vii).

"Relevant Nominating Body" has the meaning specified in § 4(2)(h)(vii).

"Compulsory Payment Event" has the meaning specified in § 4(8)(c).

"Qualified Majority" has the meaning specified in § 11(2).

"Gross-up Event" has the meaning specified in § 5(3).

"Rating Agency" has the meaning specified in § 5(7)(c).

"Rating Agency Event" has the meaning specified in § 5(3).

"Proceedings" has the meaning specified in § 14(2).

"Reference Banks" has the meaning specified in § 4(2)(e).

"Reference Bank Rate" has the meaning specified in § 4(2)(e).

"Reference Rate" has the meaning specified in § 4(2)(e).

"Relevant Rating Agency" has the meaning specified in § 5(3).

"Reset Screen Page" has the meaning specified in § 4(2)(e).

"Reset Date" has the meaning specified in § 4(2)(e).

"Reset-Zinssatz" hat die in § 4(2)(f) festgelegte Bedeutung.

"Resetzeitraum" hat die in § 4(2)(e) festgelegte Bedeutung.

"Rückzahlungstag" bezeichnet den Tag, an dem die Schuldverschreibungen nach Maßgabe dieser Anleihebedingungen zur Rückzahlung fällig werden.

"Schuldverschreibungen" hat die in § 2(1) festgelegte Bedeutung.

"SchVG" hat die in § 11(1) festgelegte Bedeutung.

"S&P" hat die in § 5(7)(c) festgelegte Bedeutung

"Steuerereignis" hat die in § 5(3) festgelegte Bedeutung.

"Steuerhoheitsgebiet" hat die in § 8 festgelegte Bedeutung.

"Steuern" hat die in § 8 festgelegte Bedeutung.

"Stichtag" hat die in § 4(2)(h)(ix) festgelegte Bedeutung.

"Tochtergesellschaft" hat die in § 3(1) festgelegte Bedeutung.

"Unabhängiger Berater" hat die in § 4(2)(h)(vii) festgelegte Bedeutung.

"Ursprünglicher Benchmarksatz" hat die in § 4(2)(e) festgelegte Bedeutung.

"Verbundenes Finanzierungsunternehmen" hat die in § 10(1) festgelegte Bedeutung.

"Vereinigte Staaten" hat die in § 2(2)(b) festgelegte Bedeutung.

"Vorläufige Globalurkunde" hat die in § 2(2)(a) festgelegte Bedeutung.

"Zinsberechnungszeitraum" hat die in § 4(6) festgelegte Bedeutung.

"Zinsen" hat die in § 4(3) festgelegte Bedeutung.

"Zinsfestsetzungstag" hat die in § 4(2)(e) festgelegte Bedeutung.

"Zinslaufbeginn" bezeichnet 25. Juni 2019.

"Zinsrückstände" hat die in § 4(7) festgelegte Bedeutung.

"Reset Interest Rate" has the meaning specified in § 4(2)(f).

"Reset Period" has the meaning specified in § 4(2)(e).

"Redemption Date" means the day on which the Notes become due for redemption in accordance with these Terms and Conditions.

"Notes" has the meaning specified in § 2(1).

"SchVG" has the meaning specified in § 11(1).

"S&P" has the meaning specified in § 5(7)(c).

"Tax Event" has the meaning specified in § 5(3).

"Taxing Jurisdiction" has the meaning specified in § 8.

"Taxes" has the meaning specified in § 8.

"Effective Date" has the meaning specified in § 4(2)(h)(ix).

"Subsidiary" has the meaning specified in § 3(1).

"Independent Adviser" has the meaning specified in § 4(2)(h)(vii).

"Original Benchmark Rate" has the meaning specified in § 4(2)(e).

"Financing Affiliate" has the meaning specified in § 10(1).

"United States" has the meaning specified in § 2(2)(b).

"Temporary Global Note" has the meaning specified in § 2(2)(a).

"Calculation Period" has the meaning specified in § 4(6).

"Interest" has the meaning specified in § 4(3).

"Interest Determination Date " has the meaning specified in § 4(2)(e).

"Interest Commencement Date" means June 25, 2019.

"Deferred Interest Payments" has the meaning specified in § 4(7).

"Zinstagequotient" hat die in § 4(6) festgelegte Bedeutung.

"Zinszahlungstag" hat die in § 4(1) festgelegte Bedeutung.

"Zinszeitraum" hat die in § 4(1) festgelegte Bedeutung.

"Zusätzliche Beträge" hat die in § 8 festgelegte Bedeutung.

"Zweite Step-Up Marge" hat die in § 4(2)(d) festgelegte Bedeutung.

"Zweiter Step-Up Tag" hat die in § 4(2)(c) festgelegte Bedeutung.

§ 2

GESAMTNENNBETRAG, FESTGELEGTE STÜCKELUNG, FORM, CLEARINGSYSTEM

- (1) *Gesamtnennbetrag, Form, Festgelegte Stückelung.* Diese Emission von an den Inhaber zahlbaren nachrangigen Schuldverschreibungen (die "**Schuldverschreibungen**") der Merck KGaA, Darmstadt (die "**Emittentin**") wird in Euro ("**EUR**") im Gesamtnennbetrag von EUR 500.000.000 in Stückelungen je Schuldverschreibung von EUR 100.000 (die "**Festgelegte Stückelung**") begeben.
- (2) *Vorläufige Globalurkunde, Dauerglobalurkunde, Austausch.*
 - (a) Die Schuldverschreibungen sind anfänglich durch eine vorläufige Globalurkunde (die "**Vorläufige Globalurkunde**") ohne Zinsscheine verbrieft. Die Vorläufige Globalurkunde wird gegen eine Dauerglobalurkunde (die "**Dauerglobalurkunde**"; die Vorläufige Globalurkunde und die Dauerglobalurkunde zusammen die "**Globalurkunden**") ohne Zinsscheine ausgetauscht. Die Globalurkunden tragen jeweils die Unterschriften ordnungsgemäß bevollmächtigter Vertreter der Emittentin und sind jeweils von der Hauptzahlstelle oder in deren Namen mit einer Kontrollunterschrift

"Day Count Fraction" has the meaning specified in § 4(6).

"Interest Payment Date" has the meaning specified in § 4(1).

"Interest Period" has the meaning specified in § 4(1).

"Additional Amounts" has the meaning specified in § 8.

"Second Step-Up Margin" has the meaning specified in § 4(2)(d).

"Second Step-Up Date" has the meaning specified in § 4(2)(c).

§ 2

AGGREGATE PRINCIPAL AMOUNT, SPECIFIED DENOMINATION, FORM, CLEARING SYSTEM

- (1) *Aggregate Principal Amount, Form, Specified Denomination.* This issue of subordinated notes payable to the bearer (the "**Notes**") of Merck KGaA, Darmstadt (the "**Issuer**") is being issued in euro ("**EUR**") in the aggregate principal amount of EUR 500,000,000 in a denomination of EUR 100,000 each (the "**Specified Denomination**").
- (2) *Temporary Global Note, Permanent Global Note, Exchange.*
 - (a) The Notes are initially represented by one temporary global note (the "**Temporary Global Note**") without interest coupons. The Temporary Global Note shall be exchangeable for a permanent global note (the "**Permanent Global Note**"; the Permanent Global Note and the Temporary Global Note together the "**Global Notes**") without interest coupons. The Global Notes shall each be signed by authorised signatories of the Issuer and shall each be authenticated by or on behalf of the Principal Paying Agent. Definitive notes and interest coupons shall not be issued.

versehen. Einzelurkunden und Zinsscheine werden nicht ausgegeben.

- (b) Die Vorläufige Globalurkunde wird frühestens an einem Tag gegen die Dauerglobalurkunde austauschbar, der 40 Tage nach dem Ausgabetag der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen liegt. Ein solcher Austausch darf nur nach Vorlage von Bescheinigungen gemäß U.S. Steuerrecht erfolgen, wonach der oder die wirtschaftlichen Eigentümer der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen keine U.S. Personen sind (ausgenommen bestimmte Finanzinstitute oder bestimmte Personen, die Schuldverschreibungen über solche Finanzinstitute halten). Falls Zinsen oder Zinsrückstände auf durch eine Vorläufige Globalurkunde verbrieft Schuldverschreibungen bevorstehen, erfolgen sie erst nach Vorlage solcher Bescheinigungen. Eine gesonderte Bescheinigung ist für jede solche Zahlung von Zinsen oder Zinsrückständen erforderlich. Jede Bescheinigung, die am oder nach dem 40. Tag nach dem Ausgabetag der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen eingeht, wird als ein Ersuchen behandelt werden, diese Vorläufige Globalurkunde gemäß diesem Absatz (2)(b) auszutauschen. Schuldverschreibungen, die im Austausch für die Vorläufige Globalurkunde geliefert werden, dürfen nur außerhalb der Vereinigten Staaten (wie unten definiert) geliefert werden.

"Vereinigte Staaten" bezeichnet die Vereinigten Staaten von Amerika (einschließlich deren Bundesstaaten und des District of Columbia) sowie deren Territorien (einschließlich Puerto Ricos, der U.S. Virgin Islands, Guam, American Samoa, Wake Island und der Northern Mariana Islands).

- (b) The Temporary Global Note shall be exchangeable for the Permanent Global Note from the date falling 40 days after the issue date of the Notes represented by the Temporary Global Note. Such exchange shall only be made upon delivery of certifications to the effect that the beneficial owner or owners of the Notes represented by the Temporary Global Note is not a U.S. person (other than certain financial institutions or certain persons holding Notes through such financial institutions) as required by U.S. tax law. Payment of Interest and Deferred Interest Payments, if any, on Notes represented by a Temporary Global Note will be made only after delivery of such certifications. A separate certification shall be required in respect of each such payment of Interest or Deferred Interest Payments. Any such certification received on or after the 40th day after the issue date of the Notes represented by the Temporary Global Note will be treated as a request to exchange such Temporary Global Note pursuant to this subparagraph (2)(b). Any Notes delivered in exchange for the Temporary Global Note shall be delivered only outside of the United States (as defined below).

"United States" means the United States of America (including the States thereof and the District of Columbia) and its possessions (including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and Northern Mariana Islands).

- (3) *Clearingsystem.* Die Dauerglobalurkunde wird solange von einem oder im Namen eines Clearingsystems verwahrt, bis sämtliche Verbindlichkeiten der Emittentin aus den Schuldverschreibungen erfüllt sind. "**Clearingsystem**" bezeichnet jeweils Folgendes: Clearstream Banking, société anonyme, Luxemburg ("**CBL**") und Euroclear Bank S.A./ N.V. Brüssel, als Betreiberin des Euroclear Systems ("**Euroclear**") sowie jeder Funktionsnachfolger. "**International Central Securities Depository**" oder "**ICSD**" bezeichnet jeweils CBL und Euroclear (zusammen die "**ICSDs**").

Die Schuldverschreibungen werden in Form einer Classical Global Note ausgegeben und von einer gemeinsamen Verwahrstelle im Namen beider ICSDs verwahrt.

- (4) *Gläubiger, Übertragbarkeit.* "**Gläubiger**" bezeichnet jeden Inhaber eines Miteigentumsanteils oder anderen vergleichbaren Rechts an den Schuldverschreibungen, der oder die nach Maßgabe des anwendbaren Rechts und der jeweils geltenden Regelwerke des Clearingsystems übertragen werden können.

§ 3

STATUS DER SCHULDVERSCHREIBUNGEN, AUFRECHNUNGSVERBOT

- (1) *Status der Schuldverschreibungen.* Soweit nachstehend nichts anderes bestimmt ist, begründen die Schuldverschreibungen direkte, nicht besicherte, nachrangige Verbindlichkeiten der Emittentin, die im Fall der Abwicklung, Auflösung oder Liquidation der Emittentin (i) nur den Ansprüchen der persönlich haftenden Gesellschafter und der Kommanditaktionäre aus deren jeweiliger Beteiligung am Eigenkapital der Emittentin im Rang vorgehen, (ii) untereinander und mit jedem Gleichrangigen Wertpapier im Rang gleich stehen und (iii) allen anderen bestehenden und zukünftigen Verbindlichkeiten der Emittentin, ob nachrangig oder nicht nachrangig, im Rang nachgehen, soweit zwingende gesetzliche Vorschriften nichts anderes vorschreiben bzw.

- (3) *Clearing System.* The Permanent Global Note will be kept in custody by or on behalf of the Clearing System until all obligations of the Issuer under the Notes have been satisfied. "**Clearing System**" means each of the following: Clearstream Banking, société anonyme Luxembourg ("**CBL**") and Euroclear Bank S.A./N.V. Brussels as operator of the Euroclear System ("**Euroclear**") and any successor in such capacity. "**International Central Securities Depository**" or "**ICSD**" means each of CBL and Euroclear (together, the "**ICSDs**").

The Notes are issued in classical global note form and are kept in custody by a common depositary on behalf of both ICSDs.

- (4) *Holder, Transferability.* "**Holder**" means any holder of a proportionate co-ownership or other beneficial interest or right in the Notes, which are transferable in accordance with applicable law and applicable rules of the Clearing System.

§ 3

STATUS OF THE NOTES, PROHIBITION OF SET-OFF

- (1) *Status of the Notes.* Except as otherwise provided below, the obligations of the Issuer under the Notes constitute direct, unsecured and subordinated obligations of the Issuer and, in the event of the winding-up, dissolution or liquidation of the Issuer, rank (i) senior only to the claims of the Issuer's general partners (*persönlich haftende Gesellschafter*) and limited partnership shareholders (*Kommanditaktionäre*) arising out of their respective participation in the equity of the Issuer, (ii) *pari passu* among themselves and *pari passu* with any Parity Securities and, (iii) junior to all other present and future obligations of the Issuer, whether subordinated or unsubordinated, except as otherwise provided by mandatory provisions of law or as expressly

die Bedingungen des betreffenden Instruments ausdrücklich etwas anderes vorsehen.

Die Rechte der Gläubiger aus den Schuldverschreibungen gegenüber der Emittentin begründen direkte, nicht besicherte und nachrangige Rechte gegenüber der Emittentin im Sinne von § 39 Absatz 2 Insolvenzordnung, die im Fall der Insolvenz der Emittentin, eines Vergleichs oder eines anderen der Abwendung der Insolvenz der Emittentin dienenden Verfahrens (i) nur den Ansprüchen der persönlich haftenden Gesellschafter und der Kommanditaktionäre aus deren jeweiliger Beteiligung am Eigenkapital der Emittentin im Rang vorgehen, (ii) untereinander und mit jedem Gleichrangigen Wertpapier im Rang gleich stehen und (iii) allen anderen bestehenden und zukünftigen Verbindlichkeiten der Emittentin, ob nachrangig oder nicht nachrangig, im Rang nachgehen, soweit nicht zwingende gesetzliche Vorschriften etwas anderes vorschreiben bzw. die Bedingungen des betreffenden Instruments ausdrücklich etwas anderes vorsehen.

Im Fall (i) der Abwicklung, Auflösung oder Liquidation der Emittentin gehen die Verbindlichkeiten der Emittentin aus den Schuldverschreibungen, und im Fall (ii) der Insolvenz der Emittentin oder eines Vergleichs oder eines anderen der Abwendung der Insolvenz der Emittentin dienenden Verfahrens, gehen die Rechte der Gläubiger gegenüber der Emittentin gemäß § 39 Absatz 2 Insolvenzordnung im Rang den Ansprüchen aller nicht nachrangigen und nachrangigen Gläubiger nach (soweit nicht zwingende gesetzliche Vorschriften etwas anderes vorschreiben bzw. die Bedingungen, denen die betreffenden Ansprüche unterliegen, ausdrücklich etwas anderes vorsehen), so dass Zahlungen auf die Schuldverschreibungen solange nicht erfolgen, wie die Ansprüche dieser nicht nachrangigen und nachrangigen Gläubiger gegen die Emittentin nicht zuvor vollständig erfüllt sind.

Für die Rechte der Gläubiger aus den Schuldverschreibungen ist diesen keine Sicherheit durch die Emittentin oder durch

provided for by the terms of the relevant instrument.

The rights of the Holders towards the Issuer under the Notes constitute direct, unsecured and subordinated rights in the meaning of section 39 paragraph 2 of the German Insolvency Regulation (*Insolvenzordnung*) and, in the event of the insolvency of the Issuer, composition or other proceedings for the avoidance of insolvency of the Issuer, rank (i) senior only to the claims of the Issuer's general partners (*persönlich haftende Gesellschafter*) and limited partnership shareholders (*Kommanditaktionäre*) arising out of their respective participation in the equity of the Issuer, (ii) *pari passu* among themselves and *pari passu* with any Parity Securities and, (iii) junior to all other present and future obligations of the Issuer, whether subordinated or unsubordinated, except as otherwise provided by mandatory provisions of law or as expressly otherwise provided for by the terms of the relevant instrument.

In the case of (i) the winding-up, dissolution or liquidation of the Issuer, the obligations of the Issuer under the Notes, and (ii) the insolvency of the Issuer or composition or other proceedings for the avoidance of insolvency of the Issuer, the rights of the Holders towards the Issuer shall, pursuant to section 39 paragraph 2 of the German Insolvency Regulation (*Insolvenzordnung*), be subordinated to the claims of all unsubordinated and subordinated creditors of the Issuer (except as otherwise provided by mandatory provisions of law or as expressly otherwise provided for by the terms underlying the relevant claims) so that in any such case no amounts shall be payable in respect of the Notes until the claims of such unsubordinated and subordinated creditors of the Issuer shall have first been satisfied in full.

No security is, or shall at any time be, granted by the Issuer or any other person securing rights of the Holders under the Notes.

Dritte gestellt; eine solche Sicherheit wird auch zu keinem Zeitpunkt gestellt werden.

"**Gleichrangige Wertpapiere**" bezeichnet (i) jedes von der Emittentin begebene Wertpapier oder andere Instrument und gegen sie gerichtete Forderungen, die gleichrangig im Verhältnis zu den Verbindlichkeiten der Emittentin unter den Schuldverschreibungen sind, oder (ii) jedes von einer Tochtergesellschaft begebene Wertpapier oder andere Instrument, das durch die Emittentin garantiert wird oder von einer Patronatserklärung der Emittentin profitiert, bei dem die Verbindlichkeiten der Emittentin aus der maßgeblichen Garantie oder Patronatserklärung gleichrangig im Verhältnis zu den Verbindlichkeiten der Emittentin aus den Schuldverschreibungen sind. Am Ausgabetag der Schuldverschreibungen sind Gleichrangige Wertpapiere der Emittentin die nicht besicherten nachrangigen Schuldverschreibungen der Emittentin erstmals kündbar im Jahr 2021, fällig im Jahr 2074, ISIN XS1152338072, und die nicht besicherten nachrangigen Schuldverschreibungen der Emittentin erstmals kündbar im Jahr 2024, fällig im Jahr 2074, ISIN XS1152343668.

"**Tochtergesellschaft**" bezeichnet jede direkte oder mittelbare mehrheitliche Tochtergesellschaft der Emittentin.

- (2) *Aufrechnungsverbot.* Die Gläubiger sind nicht berechtigt, Forderungen aus den Schuldverschreibungen gegen mögliche Forderungen der Emittentin aufzurechnen. Die Emittentin ist nicht berechtigt, Forderungen gegenüber einem Gläubiger gegen Verpflichtungen aus den Schuldverschreibungen aufzurechnen.
- (3) Unter Beachtung von § 3(1) bleibt es der Emittentin unbenommen, ihre Verbindlichkeiten aus den Schuldverschreibungen auch aus dem sonstigen freien Vermögen zu bedienen.

§ 4

ZINSEN, ZINSAUFSCHUB

- (1) *Zinszahlungstage und Zinszeiträume.* Vorbehaltlich der weiteren Bestimmungen dieses § 4 (insbesondere § 4(7)) berechnen die

"**Parity Securities**" means (i) any securities or other instruments issued by the Issuer and claims towards the Issuer which are expressed to rank *pari passu* with the Issuer's obligations under the Notes or (ii) securities or other instruments issued by a Subsidiary, where such securities or instruments have the benefit of a guarantee or keep well agreement by the Issuer, and the obligations under such guarantee or keep well agreement rank *pari passu* with the Issuer's obligations under the Notes. On the issue date of the Notes Parity Securities of the Issuer are the unsecured subordinated notes with a first call date in 2021, due in 2074, ISIN XS1152338072, and its unsecured subordinated notes with a first call date in 2024, due in 2074, ISIN XS1152343668.

"**Subsidiary**" means any directly or indirectly majority-owned subsidiary of the Issuer.

- (2) *Prohibition of Set-off.* No Holder may set-off any claims arising under the Notes against any claims that the Issuer may have against it. The Issuer may not set-off any claims it may have against any Holder against any of its obligations under the Notes.
- (3) Subject to § 3(1), the Issuer may satisfy its obligations under the Notes also from other distributable assets (*sonstiges freies Vermögen*) of the Issuer.

§ 4

INTEREST, INTEREST DEFERRAL

- (1) *Interest Payment Dates and Interest Periods.* Subject to the further provisions of this § 4 (in particular, but not limited to, § 4(7)) the Notes

Schuldverschreibungen die Gläubiger für jeden Zinszeitraum (wie nachstehend definiert) vom Zinslaufbeginn (einschließlich) bis zu dem in § 4(9) vorgesehenen Zeitpunkt zu Zinsen in Höhe des für den jeweiligen Zinszeitraum gemäß § 4(2) anwendbaren Zinssatzes (der "**Anwendbare Zinssatz**") auf die Festgelegte Stückelung je Schuldverschreibung. Die Zinsen sind jährlich nachträglich am 18. Dezember eines jeden Jahres (jeweils ein "**Zinszahlungstag**") zur Zahlung vorgesehen, erstmals am 18. Dezember 2019, (kurze erste und kurze letzte Zinsperiode) und werden gemäß § 4(7) und § 4(8) fällig.

"**Zinszeitraum**" bezeichnet (i) den Zeitraum ab dem Zinslaufbeginn (einschließlich) bis zum ersten Zinszahlungstag (ausschließlich) und (ii) den Zeitraum ab einem Zinszahlungstag (einschließlich) bis zum unmittelbar folgenden Zinszahlungstag (ausschließlich).

(2) *Anwendbarer Zinssatz.*

- (a) *Anfänglicher Festzinszeitraum.* Für jeden Zinszeitraum, der in den Zeitraum ab dem Zinslaufbeginn (einschließlich) bis zum 18. Dezember 2024 (der "**Erste Resettag**") (ausschließlich) fällt, entspricht der Anwendbare Zinssatz 1,625 % per annum.
- (b) *Erster Resetzeitraum.* Für jeden Zinszeitraum, der in den Resetzeitraum ab dem Ersten Resettag (einschließlich) bis zum 18. Dezember 2029 (dem "**Ersten Step-Up Tag**") (ausschließlich) fällt, entspricht der Anwendbare Zinssatz dem Referenzsatz für diesen Resetzeitraum zuzüglich 194,8 Basispunkte per annum (die "**Anfängliche Marge**").
- (c) *Zweiter Resetzeitraum.* Für jeden Zinszeitraum, der in einen Resetzeitraum ab dem Ersten Step-Up Tag (einschließlich) bis zum 18. Dezember 2044 (dem "**Zweiten Step-Up Tag**") (ausschließlich) fällt, entspricht der Anwendbare Zinssatz dem Referenzsatz für diesen Resetzeitraum

entitle the Holders to Interest for each Interest Period (as defined below) from and including the Interest Commencement Date to the date specified in § 4(9) at the prevailing interest rate according to § 4(2) (the "**Prevailing Interest Rate**") on the Specified Denomination per Note. Such Interest shall be scheduled to be paid annually in arrear on December 18 of each year (each a "**Interest Payment Date**"), commencing on December 18, 2019 (short first and short last coupon), and will fall due and payable (*fällig*) in accordance with the conditions set forth in § 4(7) and § 4(8).

"**Interest Period**" means (i) the period from and including the Interest Commencement Date to but excluding the first Interest Payment Date and (ii) the period from and including any Interest Payment Date to but excluding the immediately following Interest Payment Date.

(2) *Prevailing Interest Rate.*

- (a) *Initial Fixed Rate Period.* For any Interest Period falling in the period from and including the Interest Commencement Date to but excluding December 18, 2024 (the "**First Reset Date**"), the Prevailing Interest Rate shall be equal to a rate of 1.625 % per annum.
- (b) *First Reset Period.* For any Interest Period falling in the Reset Period from and including the First Reset Date to but excluding December 18, 2029 (the "**First Step-Up Date**"), the Prevailing Interest Rate shall be equal to the Reference Rate for such Reset Period plus 194.8 basis points per annum (the "**Initial Margin**").
- (c) *Second Reset Period.* For any Interest Period falling in a Reset Period from and including the First Step-Up Date to but excluding December 18, 2044 (the "**Second Step-Up Date**"), the Prevailing Interest Rate shall be equal to the Reference Rate for such Reset Period plus the First Step-Up Margin (as defined below).

zuzüglich der Ersten Step-Up Marge (wie nachfolgend definiert).

"Erste Step-Up Marge" bezeichnet die Anfängliche Marge zuzüglich 25 Basispunkten per annum.

- (d) *Resetzeiträume nach dem zweiten Resetzeitraum.* Für jeden Zinszeitraum, der in einen Resetzeitraum fällt, der an oder nach dem Zweiten Step-Up Tag beginnt, entspricht der Anwendbare Zinssatz dem Referenzsatz für den betreffenden Resetzeitraum zuzüglich der Zweiten Step-Up Marge (wie nachstehend definiert).

"Zweite Step-Up Marge" bezeichnet die Anfängliche Marge zuzüglich 100 Basispunkten per annum.

- (e) *Feststellung des Referenzsatzes.*

Die Berechnungsstelle bestimmt vorbehaltlich § 4(2)(h) an jedem Zinsfestsetzungstag den jeweiligen Referenzsatz nach Maßgabe dieses § 4(2)(e).

- (i) **"Referenzsatz"** für einen Resetzeitraum bezeichnet den 5-Jahres-Swapsatz (der **"5-Jahres-Swapsatz"**) wie er am Zinsfestsetzungstag um 11:00 Uhr (Frankfurter Zeit) auf dem Reuters Bildschirm "ICESWAP2" unter der Überschrift "EURIBOR BASIS" und dem Untertitel "11:00 AM Frankfurt time" (auf dem solche Überschriften und Untertitel von Zeit zu Zeit erscheinen) (die **"Reset-Bildschirmseite"**) angezeigt wird (der **"Ursprüngliche Benchmarksatz"**).

- (ii) Falls der 5-Jahres-Swapsatz an dem Zinsfestsetzungstag nicht auf der Reset-Bildschirmseite erscheint, aber kein Benchmark-Ereignis eingetreten ist, entspricht der **"Referenzsatz"** für den nächsten Resetzeitraum dem

"First Step-Up Margin" means the Initial Margin plus 25 basis points per annum.

- (d) *Reset Periods following the second Reset Period.* For any Interest Period falling in any Reset Period commencing on or after the Second Step-Up Date, the Prevailing Interest Rate shall be equal to the Reference Rate for the relevant Reset Period plus the Second Step-Up Margin (as defined below).

"Second Step-Up Margin" means the Initial Margin plus 100 basis points per annum.

- (e) *Determination of the Reference Rate.*

The Calculation Agent will, subject to § 4(2)(h), determine the relevant Reset Rate in accordance with this § 4(2)(e) on each Interest Determination Date.

- (i) **"Reference Rate"** for any Reset Period means the 5 year swap rate (the **"5 year Swap Rate"**) which appears on the Reuters screen "ICESWAP2" under the heading "EURIBOR BASIS" and the caption "11:00 AM Frankfurt time" (as such headings and captions may appear from time to time) as of 11:00 a.m. (Frankfurt time) (the **"Reset Screen Page"**) on the Interest Determination Date (the **"Original Benchmark Rate"**).

- (ii) If the 5 year Swap Rate does not appear on the Reset Screen Page on the Interest Determination Date, but no Benchmark Event has occurred, the **"Reference Rate"** for the next Reset Period will be the Reference Bank Rate

Referenzbankensatz an dem Zinsfestsetzungstag.

Kann der Referenzbankensatz nicht gemäß den nachstehenden Bestimmungen dieses § 4(2)(e) bestimmt werden, aber ist kein Benchmark-Ereignis eingetreten, entspricht der jeweilige "**Referenzsatz**" dem durch die Berechnungsstelle festgelegten 5-Jahres-Swapsatz, welcher zuletzt auf der Reset-Bildschirmseite verfügbar war.

- (iii) Wenn ein Benchmark-Ereignis eintritt, wird der "**Referenzsatz**" für jeden Resetzeitraum, der an oder nach dem Stichtag (wie in § 4(2)(h)(ix) definiert) beginnt, gemäß § 4(2)(h) bestimmt.

Dabei gilt Folgendes:

"**Referenzbanken**" bezeichnet fünf führende Swap-Händler im Interbankenhandel, die von der Emittentin ausgewählt werden

"**Referenzbankensatz**" bedeutet, dass der Referenzsatz für den nächsten Resettag ein Prozentsatz ist, der auf der Grundlage der jeweiligen von den Referenzbanken um ca. 11:00 Uhr (Frankfurter Zeit) an dem Zinsfestsetzungstag mitgeteilten Mid-Market jährliche Swapsatz-Quotierungen ermittelt wird. Für diesen Zweck bezeichnet "Mid-Market jährlicher Swapsatz" das rechnerische Mittel der Geld- und Briefkurse für den jährlichen Festzinszahlungsstrom (berechnet auf einer 30/360 Tagesberechnungsbasis) einer fixed-for-floating Euro Zinsswap-Transaktion, die eine Laufzeit von fünf Jahren beginnend am Resettag hat, auf einen Betrag lautet, der dem einer repräsentativen einzelnen Transaktion in dem relevanten Markt zur relevanten Zeit mit einem anerkannten Händler mit guter Bonität im Swap Markt entspricht, und deren variabler Zahlungsstrom auf dem 6-Monats

on the Interest Determination Date.

If the Reference Bank Rate cannot be determined pursuant to the following provisions of this § 4(2)(e), but no Benchmark Event has occurred, the relevant "**Reference Rate**" shall be equal to the last 5 year Swap Rate available on the Reset Screen Page as determined by the Calculation Agent.

- (iii) If a Benchmark Event occurs, the "**Reference Rate**" for each Reset Period commencing on or after the Effective Date (as defined in § 4(2)(h)(ix)) will be determined in accordance with § 4(2)(h).

Where:

"**Reference Banks**" means five leading swap dealers in the interbank market selected by the Issuer.

"**Reference Bank Rate**" means that the Reference Rate for a Reset Date will be a percentage determined on the basis of the mid-Market Annual Swap Rate quotations provided by the Reference Banks at approximately 11:00 a.m., Frankfurt time, on the Interest Determination Date preceding that Reset Date. For this purpose, the "Mid-Market Annual Swap Rate" means the arithmetic mean of the bid and offered rates for the annual fixed leg, calculated on a 30/360 day count basis, of a fixed-for-floating euro interest rate swap transaction with a term equal to five years commencing on that Reset Date and in an amount that is representative of a single transaction in the relevant market at the relevant time with an acknowledged dealer of good credit in the swap market, where the floating leg, calculated on an Actual/360 day count

EURIBOR Satz beruht (berechnet auf einer Actual/360 Tageberechnungsbasis).

Die Emittentin wird die Hauptniederlassung jeder Referenzbank bitten, der Berechnungsstelle ihre jährliche Mid-Market Swapsatz-Quotierungen mitzuteilen.

Wenn mindestens drei Quotierungen genannt werden, ist der Referenzsatz das rechnerische Mittel der Quotierungen unter Ausschluss der höchsten Quotierung (oder, für den Fall von gleich hohen Quotierungen, einer der höchsten Quotierungen) und der niedrigsten Quotierung (oder, für den Fall von gleich hohen Quotierungen, einer der niedrigsten Quotierungen).

"**Resettag**" bezeichnet den Ersten Resettag und danach jeden fünften Jahrestag des jeweils unmittelbar vorangehenden Resettages.

"**Resetzeitraum**" bezeichnet jeden Zeitraum ab dem Ersten Resettag (einschließlich) bis zum nächstfolgenden Resettag (ausschließlich) und nachfolgend ab jedem Resettag (einschließlich) bis zu dem jeweils nächstfolgenden Resettag (ausschließlich).

"**Zinsfestsetzungstag**" bezeichnet den zweiten TARGET-Geschäftstag vor dem jeweiligen Resettag.

- (f) Unverzüglich nach Bestimmung des betreffenden Referenzsatzes wird die Berechnungsstelle den Anwendbaren Zinssatz für den betreffenden Resetzeitraum (jeweils ein "**Reset-Zinssatz**") berechnen.
- (g) Die Berechnungsstelle wird veranlassen, dass der Reset-Zinssatz der Emittentin, der Hauptzahlstelle, und jeder Börse, an der die Schuldverschreibungen zu diesem Zeitpunkt notiert sind und deren Regeln eine Mitteilung an die Börse verlangen, sowie den Gläubigern gemäß § 13 unverzüglich, aber keinesfalls

basis, is equivalent to the six months-EURIBOR.

The Issuer will request the principal office of each of the Reference Banks to provide to the Calculation Agent a quotation of its Mid-Market Annual Swap Rate.

If at least three quotations are provided, the Reference Rate for that Reset Date will be the arithmetic mean of the quotations, eliminating the highest quotation (or, in the event of equality, one of the highest) and the lowest quotation (or, in the event of equality, one of the lowest).

"**Reset Date**" means the First Reset Date and thereafter each fifth anniversary of the immediately preceding Reset Date.

"**Reset Period**" means each period from and including the First Reset Date to but excluding the next following Reset Date and thereafter from and including each Reset Date to but excluding the next following Reset Date.

"**Interest Determination Date**" means the second TARGET Business Day prior to the relevant Reset Date.

- (f) Promptly after the determination of the relevant Reference Rate, the Calculation Agent shall determine the Prevailing Interest Rate for the relevant Reset Period (each a "**Reset Interest Rate**").
- (g) The Calculation Agent will cause the Reset Interest Rate to be notified to the Issuer, the Principal Paying Agent and, if required by the rules of any stock exchange on which the Notes are listed from time to time, to such stock exchange, and to the Holders in accordance with § 13 without undue

später als am achten auf dessen Feststellung folgenden Geschäftstag mitgeteilt wird.

(h) *Benchmark-Ereignis.*

Wenn ein Benchmark-Ereignis in Bezug auf den Ursprünglichen Benchmarksatz (oder eine Teilkomponente davon) eintritt, gilt für die Bestimmung des jeweiligen Referenzsatzes und den Reset des Anwendbaren Zinssatzes gemäß diesem § 4(2) Folgendes:

- (i) Wenn ein Benchmark-Ereignis in Bezug auf den Ursprünglichen Benchmarksatz eingetreten ist, wird sich die Emittentin bemühen, sobald wie möglich einen Unabhängigen Berater zu benennen, der einen Neuen Benchmarksatz, die Anpassungsspanne (gemäß § 4(2)(h)(iv)) und etwaige Benchmark-Änderungen (gemäß § 4(2)(h)(v)) festlegt.
- (ii) Wenn vor dem jeweiligen Zinsfestsetzungstag
 - (A) die Emittentin keinen Unabhängigen Berater ernannt; oder
 - (B) der ernannte Unabhängige Berater keinen Neuen Benchmarksatz gemäß diesem § 4(2)(h) festlegt,

dann entspricht der "**Referenzsatz**" für den unmittelbar nachfolgenden Resetzeitraum dem an dem letzten zurückliegenden Zinsfestsetzungstag festgestellten Ursprünglichen Benchmarksatz.

Falls dieser § 4(2)(h)(ii) bereits im Hinblick auf den Ersten Resettag angewendet werden muss, entspricht der

delay, but, in any case, not later than on the eighth Business Day after its determination.

(h) *Benchmark Event.*

If a Benchmark Event occurs in relation to the Original Benchmark Rate (or any component part thereof), the relevant Reference Rate and the reset of the Prevailing Interest Rate in accordance with this § 4(2) will be determined as follows:

- (i) If a Benchmark Event has occurred in relation to the Original Benchmark Rate, then the Issuer shall endeavour to appoint an Independent Adviser as soon as possible, who will determine a New Benchmark Rate, the Adjustment Spread (in accordance with § 4(2)(h)(iv)) and any Benchmark Amendments (in accordance with § 4(2)(h)(v)).
- (ii) If prior to any relevant Interest Determination Date,
 - (A) the Issuer fails to appoint an Independent Adviser; or
 - (B) the Independent Adviser appointed by it fails to determine a New Benchmark Rate in accordance with this § 4(2)(h),

the "**Reference Rate**" applicable to the immediately following Reset Period shall be the Original Benchmark Rate determined on the last preceding Interest Determination Date.

If this § 4(2)(h)(ii) is to be applied in respect of the First Reset Date, the "**Reference Rate**" applicable to the first Reset

"Referenzsatz" für den ersten Resetzeitraum dem Ursprünglichen Benchmarksatz auf der Reset-Bildschirmseite an dem letzten Tag vor dem Zinsfestsetzungstag, an dem dieser Ursprüngliche Benchmarksatz angezeigt wurde.

Falls der Ausweichsatz gemäß diesem § 4(2)(h)(ii) zur Anwendung kommt, wird § 4(2)(h) erneut angewendet, um den Referenzsatz für den nächsten nachfolgenden Resetzeitraum zu bestimmen.

(iii) *Nachfolge-Benchmarksatz oder Alternativ-Benchmarksatz.* Falls der Unabhängige Berater nach billigem Ermessen feststellt,

(A) dass es einen Nachfolge-Benchmarksatz gibt, dann ist dieser Nachfolge-Benchmarksatz anstelle des Ursprünglichen Benchmarksatzes maßgeblich; oder

(B) dass es keinen Nachfolge-Benchmarksatz aber einen Alternativ-Benchmarksatz gibt, dann ist dieser Alternativ-Benchmarksatz an Stelle des Ursprünglichen Benchmarksatzes maßgeblich,

dann entspricht der "Referenzsatz" für den unmittelbar nachfolgenden Resetzeitraum und alle folgenden Resetzeiträume vorbehaltlich § 4(2)(h)(viii) dem betreffenden Neuen Benchmarksatz an dem betreffenden Zinsfestsetzungstag zuzüglich der Anpassungsspanne gemäß § 4(2)(h)(iv).

Period shall be the Original Benchmark Rate on the Reset Screen Page on the last day preceding the Interest Determination Date on which such Original Benchmark Rate was displayed.

If the fallback rate determined in accordance with this § 4(2)(h)(ii) is to be applied, § 4(2)(h) will be operated again to determine the Reference Rate applicable to the next subsequent Reset Period.

(iii) *Successor Benchmark Rate or Alternative Benchmark Rate.* If the Independent Adviser determines in its reasonable discretion that:

(A) there is a Successor Benchmark Rate, then such Successor Benchmark Rate shall subsequently be used in place of the Original Benchmark Rate; or

(B) there is no Successor Benchmark Rate but that there is an Alternative Benchmark Rate, then such Alternative Benchmark Rate shall subsequently be used in place of the Original Benchmark Rate,

the "Reference Rate" for the immediately following Reset Period and all following Reset Periods, subject to § 4(2)(h)(viii), will be the relevant New Benchmark Rate on the relevant Interest Determination Date plus the Adjustment Spread as provided in § 4(2)(h)(iv).

(iv) *Anpassungsspanne.* Die Anpassungsspanne (oder die Formel oder die Methode zur Bestimmung der Anpassungsspanne) wird auf den Neuen Benchmarksatz angewendet, um den betreffenden Referenzsatz zu bestimmen.

(v) *Benchmark-Änderungen.* Wenn ein Neuer Benchmarksatz und die entsprechende Anpassungsspanne gemäß diesem § 4(2)(h) festgelegt wird, und wenn der Unabhängige Berater feststellt, dass Änderungen hinsichtlich dieser Anleihebedingungen notwendig sind, um die ordnungsgemäße Anwendung des Neuen Benchmarksatzes und der entsprechenden Anpassungsspanne zu gewährleisten (diese Änderungen, die "**Benchmark-Änderungen**"), dann wird der Unabhängige Berater die Benchmark-Änderungen feststellen und die Emittentin wird diese durch eine Mitteilung gemäß § 4(2)(h)(vi) bekanntmachen.

Diese Benchmark-Änderungen können insbesondere folgende Regelungen in den Anleihebedingungen erfassen:

(A) den Referenzsatz einschließlich (in Ersetzung von § 4(2)(e)(ii) und (iii)) der "Reset-Bildschirmseite" und/oder die Methode zur Bestimmung des Ausweichsatzes (sog. fallback) für den Referenzsatz einschließlich des

(iv) *Adjustment Spread.* The Adjustment Spread (or the formula or methodology for determining the Adjustment Spread) shall be applied to the New Benchmark Rate to determine the relevant Reference Rate.

(v) *Benchmark Amendments.* If any relevant New Benchmark Rate and the applicable Adjustment Spread is determined in accordance with this § 4(2)(h), and if the Independent Adviser determines that amendments to these Terms and Conditions are necessary to ensure the proper operation of such New Benchmark Rate and the applicable Adjustment Spread (such amendments, the "**Benchmark Amendments**"), then the Independent Adviser will determine the Benchmark Amendments and the Issuer will give notice thereof in accordance with § 4(2)(h)(vi).

The Benchmark Amendments may comprise in particular the following conditions of these Terms and Conditions:

(A) the Reference Rate including the "Reset Screen Page" and/or (in replacement of § 4(2)(e)(ii) and (iii)) the method for determining the fallback rate in relation to the Reference Rate, including the Reference Bank Rate; and/or

Referenzbankensatzes;
und/oder

(B) die Definitionen der Begriffe "Geschäftstag", "Zinszahlungstag", "Resettag", "Zinsfestsetzungstag", "Zinstagequotient" und/oder "Zinszeitraum"; und/oder

(C) die Geschäftstagekonvention gemäß § 6(2).

(vi) *Mitteilungen, etc.* Die Emittentin hat einen Neuen Benchmarksatz, die Anpassungsspanne und etwaige Benchmark-Änderungen gemäß diesem § 4(2)(h) der Hauptzahlstelle und der Berechnungsstelle sowie gemäß § 13 den Gläubigern mitzuteilen, und zwar sobald eine solche Mitteilung (nach Ansicht der Emittentin) nach deren Feststellung praktikabel ist. Eine solche Mitteilung ist unwiderruflich und hat den Stichtag zu benennen.

Der Neue Benchmarksatz, die Anpassungsspanne und etwaige Benchmark-Änderungen, die jeweils in der Mitteilung benannt werden, sind für die Emittentin, die Berechnungsstelle, die Hauptzahlstelle, eventuelle weitere Zahlstellen und die Gläubiger bindend. Die Anleihebedingungen gelten ab dem Stichtag als durch den Neuen Benchmarksatz, die Anpassungsspanne und die etwaigen Benchmark-Änderungen geändert.

Am Tag dieser Mitteilung hat die Emittentin der Hauptzahlstelle eine durch zwei Unterschriftsberechtigte der

(B) the definitions of the terms "Business Day", "Interest Payment Date", "Reset Date", "Interest Determination Date", "Day Count Fraction" and/or "Interest Period"; and/or

(C) the business day convention in § 6(2)

(vi) *Notices, etc.* The Issuer will notify any New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any) determined under this § 4(2)(h) to the Principal Paying Agent and the Calculation Agent and, in accordance with § 13, the Holders as soon as such notification is (in the Issuer's view) practicable following the determination thereof. Such notice shall be irrevocable and shall specify the Effective Date.

The New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any), each as specified in such notice, will be binding on the Issuer, the Calculation Agent, the Principal Paying Agent, any additional paying agents and the Holders. The Terms and Conditions shall be deemed to have been amended by the New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments with effect from the Effective Date.

On the date of such notice, the Issuer shall deliver to the Principal Paying Agent a certificate signed by two

Emittentin unterzeichnete Bescheinigung zu übergeben, die

authorized signatories of the Issuer:

(A)

(A)

(I) bestätigt, dass ein Benchmark-Ereignis eingetreten ist;

(I) confirming that a Benchmark Event has occurred;

(II) den nach Maßgabe der Bestimmungen dieses § 4(2)(h) festgestellten Neuen Benchmarksatz benennt; und

(II) specifying the relevant New Benchmark Rate determined in accordance with the provisions of this § 4(2)(h); and

(III) die entsprechende Anpassungsspanne und etwaige Benchmark-Änderungen benennt, die jeweils nach Maßgabe der Bestimmungen dieses § 4(2)(h) festgestellt wurden;

(III) specifying the applicable Adjustment Spread and the Benchmark Amendments (if any), each determined in accordance with the provisions of this § 4(2)(h);

(IV) den Stichtag benennt; und

(IV) specifying the Effective Date; and

(B) bestätigt, dass die etwaigen Benchmark-Änderungen notwendig sind, um die ordnungsgemäße Anwendung des Neuen Benchmarksatzes und der entsprechenden Anpassungsspanne zu gewährleisten.

(B) certifying that the Benchmark Amendments, if any, are necessary to ensure the proper operation of such relevant New Benchmark Rate and the applicable Adjustment Spread.

(vii) *Definitionen.* Zur Verwendung in § 4(2)(h):

(vii) *Definitions.* As used in this § 4(2)(h):

Die "**Anpassungsspanne**", die positiv, negativ oder gleich Null sein kann, wird in Basispunkten ausgedrückt und bezeichnet entweder (a) die Spanne oder (b) das Ergebnis der Anwendung

The "**Adjustment Spread**", which may be positive, negative or zero, will be expressed in basis points and means either (a) the spread or (b) the result of the operation of the formula or

der Formel oder Methode zur Berechnung der Spanne,

- (A) die im Fall eines Nachfolge-Benchmarksatzes formell im Zusammenhang mit der Ersetzung des Ursprünglichen Benchmarksatzes durch den Nachfolge-Benchmarksatz vom Nominierungsgremium empfohlen wird; oder
- (B) die (sofern keine Empfehlung abgegeben wurde oder im Fall eines Alternativ-Benchmarksatzes) an den internationalen Anleihekapitalmärkten (oder, hilfsweise, an den internationalen Swapmärkten) auf den Neuen Benchmarksatz (oder eine Teilkomponente davon) angewendet wird, um einen industrieweit akzeptierten Ersatz-Benchmarksatz für den Ursprünglichen Benchmarksatz zu erzeugen, wobei sämtliche Feststellungen durch den Unabhängigen Berater nach billigem Ermessen vorgenommen werden.

"Alternativ-Benchmarksatz"

bezeichnet eine alternative Benchmark oder einen alternativen Bildschirmsatz, die bzw. der üblicherweise an den internationalen Anleihekapitalmärkten (oder, hilfsweise, an den internationalen Swapmärkten) zur Bestimmung von Zinssätzen bzw. Mid-Swap-

methodology for calculating the spread,

- (A) which in the case of a Successor Benchmark Rate, is formally recommended in relation to the replacement of the Original Benchmark Rate with the Successor Benchmark Rate by any Relevant Nominating Body; or
- (B) which (if no such recommendation has been made, or in the case of an Alternative Benchmark Rate) is applied to the New Benchmark Rate (or any component part thereof) in the international debt capital markets (or, alternatively, the international swap markets) to produce an industry-accepted replacement benchmark rate for the Original Benchmark Rate, provided that all determinations will be made by the Independent Adviser in its reasonable discretion.

"Alternative Benchmark Rate"

means an alternative benchmark or screen rate which is customarily applied in the international debt capital markets (or, alternatively, the international swap markets) for the purpose of determining rates of interest or mid swap rates, respectively in EUR, provided

Sätzen in Euro angewendet wird, wobei sämtliche Feststellungen durch den Unabhängigen Berater vorgenommen werden.

"Benchmark-Ereignis"

bezeichnet:

- (A) der Ursprüngliche Benchmarksatz (oder eine Teilkomponente davon) wird nicht mehr regelmäßig veröffentlicht oder wird nicht mehr erstellt; oder
- (B) eine öffentliche Bekanntmachung des Administrators des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) dahingehend, dass dieser die Berechnung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) dauerhaft oder auf unbestimmte Zeit eingestellt hat oder einstellen wird (in Fällen in denen kein Nachfolgeadministrator ernannt worden ist, der die Veröffentlichung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) vornehmen wird); oder
- (C) eine öffentliche Bekanntmachung der Aufsichtsbehörde des Administrators des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon), dass der Ursprüngliche Benchmarksatz (oder einer Teilkomponente

that all determinations will be made by the Independent Adviser.

"Benchmark Event" means:

- (A) the Original Benchmark Rate (or any component part thereof) ceasing to be published on a regular basis or ceasing to exist; or
- (B) a public statement by the administrator of the Original Benchmark Rate (or any component part thereof) that it has ceased or that it will cease publishing the Original Benchmark Rate (or any component part thereof) permanently or indefinitely (in circumstances where no successor administrator has been appointed that will continue the publication of the Original Benchmark Rate (or any component part thereof)); or
- (C) a public statement by the supervisor of the administrator of the Original Benchmark Rate (or any component part thereof), that the Original Benchmark Rate (or any component part thereof) has been or will permanently or

davon) dauerhaft oder auf unbestimmte Zeit nicht mehr fortgeführt wird oder fortgeführt werden wird; oder

- (D) eine öffentliche Bekanntmachung der Aufsichtsbehörde des Administrators des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) infolgedessen der Ursprüngliche Benchmarksatz (oder eine Teilkomponente davon) allgemein oder in Bezug auf die Schuldverschreibungen nicht mehr verwendet wird oder verwendet werden darf; oder
- (E) den Umstand, dass die Verwendung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) zur Berechnung oder Bestimmung des Referenzsatzes für die Zahlstellen, die Berechnungsstelle, die Emittentin oder jeden Dritten rechtswidrig geworden ist.

"Nachfolge-Benchmarksatz"

bezeichnet einen Nachfolger oder Ersatz des Ursprünglichen Benchmarksatzes, der formell durch das Nominierungsgremium empfohlen wurde.

"Neuer Benchmarksatz"

bezeichnet den jeweils gemäß § 4(2)(h) bestimmten Nachfolge-Benchmarksatz bzw. Alternativ-Benchmarksatz.

indefinitely discontinued;
or

- (D) a public statement by the supervisor of the administrator of the Original Benchmark Rate (or any component part thereof) as a consequence of which the Original Benchmark Rate (or any component part thereof) has been or will be prohibited from being used either generally, or in respect of the relevant Notes; or
- (E) it has become unlawful for any Paying Agent, the Calculation Agent, the Issuer or any other party to calculate or determine any Reference Rate using the Original Benchmark Rate (or any component part thereof).

"Successor Benchmark Rate"

means a successor to or replacement of the Original Benchmark Rate which is formally recommended by any Relevant Nominating Body.

"New Benchmark Rate"

means the Successor Benchmark Rate or, as the case may be, the Alternative Benchmark Rate determined in accordance with § 4(2)(h).

"Nominierungsgremium"

bezeichnet in Bezug auf die Ersetzung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon):

- (A) die Zentralbank für die Währung in der die Benchmark oder der Bildschirmsatz dargestellt wird oder eine Zentralbank oder andere Aufsichtsbehörde, die für die Aufsicht des Administrators der Benchmark oder des Bildschirmsatzes zuständig ist; oder
- (B) jede Arbeitsgruppe oder jedes Komitee gefördert durch, geführt oder mitgeführt von oder gebildet von (a) der Zentralbank für die Währung in der die Benchmark oder der Bildschirmsatz dargestellt wird, (b) einer Zentralbank oder anderen Aufsichtsbehörde, die für die Aufsicht des Administrators der Benchmark oder des Bildschirmsatzes zuständig ist, (c) einer Gruppe der zuvor genannten Zentralbanken oder anderer Aufsichtsbehörden oder (d) dem Finanzstabilitätsrat (*Financial Stability Board*) oder Teilen davon.

"Unabhängiger Berater"

bezeichnet ein von der Emittentin ernanntes unabhängiges Finanzinstitut mit internationalem Ansehen oder einen anderen unabhängigen

"Relevant Nominating Body"

means, in respect of the replacement of the Original Benchmark Rate (or any component part thereof):

- (A) the central bank for the currency to which the benchmark or screen rate (as applicable) relates, or any central bank or other supervisory authority which is responsible for supervising the administrator of the benchmark or screen rate (as applicable); or
- (B) any working group or committee sponsored by, chaired or co-chaired by or constituted at the request of (a) the central bank for the currency to which the benchmark or screen rate (as applicable) relates, (b) any central bank or other supervisory authority which is responsible for supervising the administrator of the benchmark or screen rate (as applicable), (c) a group of the aforementioned central banks or other supervisory authorities or (d) the Financial Stability Board or any part thereof.

"Independent Adviser"

means an independent financial institution of international repute or other independent financial adviser experienced in the

Finanzberater mit Erfahrung in internationalen Kapitalmärkten.

(viii) Eine Anpassung des Ursprünglichen Benchmarksatzes im Falle eines Benchmark-Ereignisses darf nur insoweit durchgeführt werden, als dass durch diese Anpassung kein Ratingagenturereignis eintritt.

(ix) Der Stichtag für die Anwendung des Neuen Benchmarksatzes, der Anpassungsspanne und der etwaigen Benchmark-Änderungen gemäß diesem § 4(2)(h) (der "**Stichtag**") ist der Zinsfestlegungstag, der auf den frühesten der folgenden Tage fällt oder diesem nachfolgt:

(A) den Tag des Eintritts des Benchmark-Ereignisses, wenn das Benchmark-Ereignis aufgrund des Absatzes (A) der Definition des Begriffs "Benchmark-Ereignis" eingetreten ist; oder

(B) den Tag, an dem die Veröffentlichung des Ursprünglichen Benchmarksatzes eingestellt wird bzw. an dem der Ursprüngliche Benchmarksatz eingestellt wird, wenn das Benchmark-Ereignis aufgrund der Absätze (B), (C) oder (D) der Definition des Begriffs "Benchmark-Ereignis" eingetreten ist; oder

(C) den Tag, ab dem der Ursprüngliche Benchmarksatz nicht mehr verwendet werden darf, wenn das Benchmark-Ereignis

international capital markets, in each case appointed by the Issuer.

(viii) Any adjustment to the Original Benchmark Rate in case of a Benchmark Event will be made only to the extent that no Rating Agency Event would occur as a result of such adjustment.

(ix) The effective date for the application of the New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any) determined under this § 4(2)(h) (the "**Effective Date**") will be Interest Determination Date falling on or after the earliest of the following dates:

(A) if the Benchmark Event has occurred as a result of clause (A) of the definition of the term "Benchmark Event", the date of the occurrence of the Benchmark Event; or

(B) if the Benchmark Event has occurred as a result of clause (B), (C) or (D) of the definition of the term "Benchmark Event", the date of cessation of publication of the Original Benchmark Rate or of the discontinuation of the Original Benchmark Rate, as the case may be; or

(C) if the Benchmark Event has occurred as a result of clause (E) of the definition of the term "Benchmark Event", the date from

aufgrund des Absatzes (E) der Definition des Begriffs "Benchmark-Ereignis" eingetreten ist; oder

which the prohibition applies.

- (x) Wenn ein Benchmark-Ereignis in Bezug auf einen Neuen Benchmarksatz eintritt, gilt dieser § 4(2)(h) entsprechend für die Ersetzung des Neuen Benchmarksatzes durch einen neuen Nachfolge-Benchmarksatz bzw. Alternativ-Benchmarksatz.

- (x) If a Benchmark Event occurs in relation to any New Benchmark Rate, the § 4(2)(h) shall apply *mutatis mutandis* to the replacement of such New Benchmark Rate by any new Successor Benchmark Rate or Alternative Benchmark Rate, as the case may be.

- (3) *Berechnung der Zinsen.* Die an dem jeweiligen Zinszahlungstag zu zahlenden Zinsen je Schuldverschreibung (die "**Zinsen**") ergeben sich aus der Multiplikation des jeweiligen Anwendbaren Zinssatzes mit der Festgelegten Stückelung je Schuldverschreibung und dem Zinstagequotienten, wobei der daraus resultierende Betrag auf den nächsten Eurocent auf oder abgerundet wird, und 0,5 oder mehr eines Eurocents aufgerundet werden. Zinsen, die für einen Zeitraum von weniger als einem Jahr zu berechnen sind, werden nach Maßgabe des § 4(5) berechnet.

- (3) *Calculation of Interest.* Interest payable per Note on the respective Interest Payment Date (the "**Interest**") shall be calculated by multiplying the Prevailing Interest Rate with the Specified Denomination and the Day Count Fraction and rounding the resulting figure to the nearest eurocent with 0.5 or more of a eurocent being rounded upwards. If Interest is to be calculated for a period of less than one year, it shall be calculated pursuant to § 4(5).

- (4) *Zinsen nach Eintritt eines Kontrollwechselereignisses.* Wenn ein Kontrollwechselereignis (wie in § 5(7) definiert) eintritt und die Emittentin die Schuldverschreibungen nicht insgesamt gemäß § 5(7) zurückzahlt, erhöht sich der für die Berechnung der Zinsen ansonsten anzuwendende Anwendbare Zinssatz ab dem Kontrollwechsel-Stichtag (wie in § 5(7) definiert) um zusätzliche 500 Basispunkte per annum. Für den Fall, dass in dem Zeitraum zwischen dem Eintritt des ersten Kontrollwechsels und dem Tag, an dem die Kontrollwechsel-Mitteilung (wie in § 5(7) definiert) in Bezug auf diesen ersten Kontrollwechsel veröffentlicht wird, mehr als ein Kontrollwechsel eintritt, erhöht sich der für die Berechnung der Zinsen ansonsten anzuwendende Anwendbare Zinssatz jedoch nur einmal.

- (4) *Interest following the occurrence of a Change of Control Event.* If a Change of Control Event (as defined in § 5(7)) occurs and the Issuer does not redeem the Notes in whole in accordance with § 5(7), the rate applicable for calculating the Interest will be subject to an additional 500 basis points per annum above the otherwise applicable Prevailing Interest Rate from the Change of Control Effective Date (as defined in § 5(7)), provided however that, in case more than one Change of Control will have occurred in the period from the occurrence of the first Change of Control to (and including) the day on which the Change of Control Notice (as defined in § 5(7)) with regard to such first Change of Control is published, the otherwise applicable Prevailing Interest Rate will only be increased once.

- (5) *Berechnung der Zinsen für Zeiträume von weniger als einem Jahr.* Sofern Zinsen für einen Zeitraum von weniger als einem vollen Jahr zu berechnen sind, erfolgt die Berechnung auf der Grundlage des Zinstagequotienten (wie nachfolgend definiert). Die Anzahl der Feststellungstermine (wie in § 4(6) definiert) je Kalenderjahr beträgt 1.
- (6) *Zinstagequotient.* **"Zinstagequotient"** bezeichnet in Bezug auf die Berechnung von Zinsen auf die Schuldverschreibungen für einen beliebigen Zeitraum (der **"Zinsberechnungszeitraum"**):
- (a) wenn der Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) kürzer ist als die Feststellungsperiode, in die das Ende des Zinsberechnungszeitraumes fällt oder ihr entspricht, die Anzahl der Tage in dem betreffenden Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) geteilt durch das Produkt aus (1) der Anzahl der Tage in der Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr; oder
- (b) wenn der Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) länger ist als die Feststellungsperiode, in die das Ende des Zinsberechnungszeitraumes fällt, die Summe aus (A) der Anzahl der Tage in dem Zinsberechnungszeitraum, die in die Feststellungsperiode fallen, in welcher der Zinsberechnungszeitraum beginnt, geteilt durch das Produkt aus (1) der Anzahl der Tage in dieser Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr und (B) der Anzahl der Tage in dem Zinsberechnungszeitraum, die in die nächste Feststellungsperiode fallen, geteilt durch das Produkt aus (1) der Anzahl der Tage in dieser
- (5) *Calculation of Interest for Periods of less than one Year.* If Interest is to be calculated for a period of less than a full year, it shall be calculated on the basis of the Day Count Fraction (as defined below). The number of Determination Dates (as defined in § 4(6)) per calendar year is 1.
- (6) *Day Count Fraction.* **"Day Count Fraction"** means, in respect of the calculation of Interest on any Note for any period of time (the **"Calculation Period"**):
- (a) if the Calculation Period (from and including the first day of such period but excluding the last) is equal to or shorter than the Determination Period during which the Calculation Period ends, the number of days in such Calculation Period (from and including the first day of such period but excluding the last) divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year; or
- (b) if the Calculation Period (from and including the first day of such period but excluding the last) is longer than the Determination Period during which the Calculation Period ends, the sum of: (A) the number of days in such Calculation Period falling in the Determination Period in which the Calculation Period begins divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year and (B) the number of days in such Calculation Period falling in the next Determination Period divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year.

Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr.

"**Feststellungsperiode**" ist der Zeitraum ab einem Feststellungstermin (einschließlich) bis zum nächsten Feststellungstermin (ausschließlich).

"**Feststellungstermin**" bezeichnet jeden 18. Dezember.

- (7) *Zinsaufschub.* Zinsen sind an dem jeweiligen Zinszahlungstag fällig und zahlbar, sofern sich die Emittentin nicht entscheidet, die Zinsen aufzuschieben. Eine solche Nichtzahlung, die jedoch in Bezug auf die jeweiligen Zinsen nur insgesamt erfolgen kann, begründet keinen Verzug der Emittentin und keine anderweitige Verletzung ihrer Verpflichtungen aufgrund dieser Schuldverschreibungen oder für sonstige Zwecke. Soweit sich die Emittentin entscheidet, an einem Zinszahlungstag die Zinsen nicht zu zahlen, hat sie dies den Gläubigern gemäß § 13 unter Einhaltung einer Frist von mindestens 20 Geschäftstagen vor dem jeweiligen Zinszahlungstag bekannt zu machen.

Die aufgrund einer derartigen Entscheidung der Emittentin nicht gezahlten Zinsen stellen "**Zinsrückstände**" dar. Zinsrückstände werden nicht verzinst.

- (8) *Nachzahlung von Zinsrückständen.*
- (a) Die Emittentin kann ausstehende Zinsrückstände jederzeit (insgesamt, jedoch nicht teilweise) nach Mitteilung gemäß § 13 unter Einhaltung einer Frist von mindestens 10 Geschäftstagen zahlen (wobei eine solche Mitteilung unwiderruflich ist und die Emittentin verpflichtet ist, die jeweiligen Zinsrückstände an dem in dieser Mitteilung genannten Zahlungstag zu zahlen).
- (b) Bei Eintritt des frühesten der nachfolgenden Ereignisse gelten die ausstehenden Zinsrückstände (insgesamt, jedoch nicht teilweise) durch die Emittentin als für fällig und zahlbar erklärt:

"**Determination Period**" means the period from and including a Determination Date to but excluding the next Determination Date.

"**Determination Date**" means each December 18.

- (7) *Interest Deferral.* Interest shall be due and payable on the respective Interest Payment Date unless the Issuer elects to defer such Interest. An election not to pay Interest, which can only be made regarding the whole respective Interest, shall not constitute a default of the Issuer or any other breach of obligations under the Notes or for any other purpose. If the Issuer decides to not pay the Interest on an Interest Payment Date, the Issuer shall notify the Holders in accordance with § 13 not less than 20 Business Days prior to the relevant Interest Payment Date.

Any Interest not paid due to such an election of the Issuer shall constitute "**Deferred Interest Payments**". Deferred Interest Payments shall not bear interest themselves.

- (8) *Payment of Deferred Interest Payments.*
- (a) The Issuer may pay outstanding Deferred Interest Payments (in whole but not in part) at any time upon giving of not less than 10 Business Days' notice in accordance with § 13 (which notice shall be irrevocable and will oblige the Issuer to pay the relevant Deferred Interest Payments on the payment date specified in such notice).
- (b) The Issuer shall be deemed to have declared outstanding Deferred Interest Payments (in whole but not in part) due and payable at the earliest of any of the following events:

- | | |
|--|--|
| <ul style="list-style-type: none"> (i) der zehnte Geschäftstag nach Eintritt eines Obligatorischen Zahlungsereignisses (wie nachfolgend definiert); oder (ii) der Tag, an dem die Schuldverschreibungen insgesamt zur Rückzahlung fällig sind; oder (iii) der Tag, an dem eine freiwillige Auflösung der Emittentin beschlossen wird oder an dem eine Verfügung zur Auflösung, Abwicklung oder Liquidation der Emittentin ergeht (sofern dies nicht für die Zwecke einer Sanierung oder eines Insolvenzplanverfahrens oder als Folge eines Zusammenschlusses oder einer Umstrukturierung geschieht, während die Emittentin noch zahlungsfähig ist und die fortführende Gesellschaft im Wesentlichen alle Vermögenswerte und Verpflichtungen der Emittentin übernimmt). <p>(c) Ein "Obligatorisches Zahlungsereignis" gilt bei Eintritt eines der folgenden Ereignisse als eingetreten:</p> <ul style="list-style-type: none"> (i) der Tag, (x) an dem die Jahreshauptversammlung oder eine andere Hauptversammlung der Emittentin für eine Beteiligung der Kommanditaktionäre am Eigenkapital der Emittentin eine Dividende, bzw. eine andere Ausschüttung oder Zahlung beschließt (mit Ausnahme einer Dividende bzw. einer anderen Ausschüttung oder Zahlung, die in Form von Kommanditaktien der Emittentin vorgenommen wird) und/oder (y) der Tag an dem eine Entnahme aufgrund der Beteiligung eines persönlich haftenden Gesellschafters am Eigenkapital der Emittentin zu | <ul style="list-style-type: none"> (i) the tenth Business Day following the occurrence of a Compulsory Payment Event (as defined below); or (ii) the due date for the redemption of the Notes; or (iii) the date on which the voluntary winding-up of the Issuer will be resolved or an order is made for the winding-up, dissolution or liquidation of the Issuer (in each case other than for the purposes of or pursuant to the restructuring or an insolvency plan procedure (<i>Insolvenzplanverfahren</i>) or an amalgamation or reorganisation while solvent, where the continuing entity assumes substantially all of the assets and obligations of the Issuer). <p>(c) A "Compulsory Payment Event" shall be deemed to have occurred upon any of the following events:</p> <ul style="list-style-type: none"> (i) the date on which (x) the Issuer's annual general meeting or any other general meeting (<i>Hauptversammlung</i>) of the Issuer resolves on a dividend, other distribution or other payment in respect of any participation of the limited partnership shareholders (<i>Kommanditaktionäre</i>) in the equity of the Issuer (other than a dividend, distribution or payment which is made in the form of limited partnership shares (<i>Kommanditaktien</i>) of the Issuer) and/or (y) the date on which any distribution to a general partner (<i>persönlich haftender Gesellschafter</i>) of the Issuer |
|--|--|

Gunsten eines persönlich haftenden Gesellschafters beschlossen wird oder die Emittentin eine solche Entnahme leistet; oder

- (ii) die Emittentin erwirbt Kommanditaktien der Emittentin zurück oder zahlt einen Kapitalanteil eines persönlich haftenden Gesellschafters zurück oder eine ihrer Tochtergesellschaften kauft ausstehende Kommanditaktien der Emittentin oder Kapitalanteile eines persönlich haftenden Gesellschafters zurück (ausgenommen (x) in Verbindung mit einem Mitarbeiterbeteiligungsprogramm oder einer ähnlichen Maßnahme zu Gunsten von Arbeitnehmern, leitenden Angestellten, Führungskräften oder Beratern, (y) als Ergebnis eines Umtauschs oder einer Wandlung einer Aktiegattung in eine andere oder (z) falls die Emittentin Kapitalanteile eines persönlich haftenden Gesellschafters oder Kommanditaktien der Emittentin als Entgelt für einen Verkauf von Vermögenswerten an Dritte erhält); oder
- (iii) ein Zinszahlungstag, in Bezug auf den die Emittentin entscheidet, die Zahlung vorgesehener Zinsen auf die Schuldverschreibungen vorzunehmen; oder
- (iv) der Tag, an dem die Emittentin oder eine Tochtergesellschaft eine Zahlung oder Ausschüttung auf ein Gleichrangiges Wertpapier vornimmt; oder

arising out of its participation in the equity of the Issuer is declared or made by the Issuer; or

- (ii) the Issuer repurchases any limited partnership shares (*Kommanditaktien*) of the Issuer or any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) or any of its Subsidiaries repurchases or otherwise acquires any of the outstanding limited partnership shares (*Kommanditaktien*) of the Issuer or any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) (other than (x) in connection with any employee benefit plan or similar arrangements with or for the benefit of employees, officers, directors or consultants, (y) as a result of the exchange or conversion of one class of shares for another class, or (z) in the case the Issuer receives any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) or limited partnership shares (*Kommanditaktien*) of the Issuer as consideration for a sale of assets to third parties); or
- (iii) an Interest Payment Date in relation to which the Issuer elects to pay a scheduled Interest on the Notes; or
- (iv) the date on which the Issuer or any Subsidiary makes any payment or distribution in respect of any Parity Security; or

- (v) der Tag, an dem die Emittentin oder eine Tochtergesellschaft (jeweils direkt oder indirekt) ein Gleichrangiges Wertpapier oder Schuldverschreibungen zurückzahlt, zurückkauft oder anderweitig erwirbt.

In den vorgenannten Fällen (iv) und (v) tritt kein Obligatorisches Zahlungsereignis ein, wenn

- (x) die Emittentin oder die betreffende Tochtergesellschaft gemäß den Anleihebedingungen des betreffenden Gleichrangigen Wertpapiers zu der Zahlung, zu der Rückzahlung, zu dem Rückkauf oder zu dem anderweitigen Erwerb verpflichtet ist; oder
- (y) die Emittentin oder die betreffende Tochtergesellschaft Gleichrangige Wertpapiere oder Schuldverschreibungen nach einem öffentlichen Rückkaufangebot oder öffentlichen Umtauschangebot mit einer unter dem jeweiligen Nennwert liegenden Gegenleistung je Gleichrangigem Wertpapier bzw. je Schuldverschreibung zurückkauft oder anderweitig erwirbt; oder
- (z) die betreffenden Zahlungen auf oder in Bezug auf Gleichrangige Wertpapiere Konzerninterne Zahlungen sind.

"Konzerninterne Zahlungen" sind Zahlungen, die ausschließlich an die Emittentin und/oder an eine oder mehrere ihrer Tochtergesellschaften erfolgen.

- (9) *Ende der Verzinsung.* Die Verzinsung der Schuldverschreibungen endet mit Beginn des Tages, an dem die Schuldverschreibungen zur Rückzahlung fällig werden. Sollte die Emittentin die Schuldverschreibungen bei

- (v) the date on which the Issuer or any Subsidiary redeems, repurchases or otherwise acquires (in each case directly or indirectly) any Parity Security or Notes.

The cases (iv) and (v) above are subject to the provision that no Compulsory Payment Event occurs if

- (x) the Issuer or the relevant Subsidiary is obliged under the terms and conditions of such Parity Security to make such payment, such redemption, such repurchase or such other acquisition; or
- (y) the Issuer or the relevant Subsidiary repurchases or otherwise acquires any Parity Security or Note in whole or in part in a public tender offer or public exchange offer at a consideration per Parity Security or, as applicable, per Note below its respective par value; or
- (z) the relevant payments on, or in respect of, any Parity Securities are Intra-Group Payments.

"Intra-Group Payments" means payments made exclusively to the Issuer and/or one or more of its Subsidiaries.

- (9) *Cessation of Interest Accrual.* The Notes shall cease to bear Interest from the beginning of the day on which they are due for redemption. If the Issuer shall fail to redeem the Notes when due, the obligation to pay Interest shall continue to

Fälligkeit nicht einlösen, endet die Verpflichtung zur Zahlung von Zinsen auf die festgelegte Stückelung je ausstehender Schuldverschreibung zu dem dann anwendbaren Zinssatz nicht am Tag der Fälligkeit, sondern erst mit dem Beginn des Tages der tatsächlichen Rückzahlung der Schuldverschreibungen.

§ 5

RÜCKZAHLUNG UND RÜCKKAUF

- (1) *Endfälligkeit.* Sofern nicht bereits zuvor zurückgezahlt oder zurückgekauft und entwertet, wird die Emittentin den Gesamtnennbetrag der ausstehenden Schuldverschreibungen am 25. Juni 2079 (der "**Endfälligkeitstag**") zurückzahlen.
- (2) *Kündigungsrecht der Emittentin bei einem Quellensteuer-Ereignis, einem Steuerereignis, einem Ratingagenturereignis oder einem Akquisitionereignis.*
 - (a) Bei Eintritt eines Quellensteuer-Ereignisses, eines Steuerereignisses, eines Ratingagenturereignisses oder eines Akquisitionereignisses ist die Emittentin berechtigt, die Schuldverschreibungen jederzeit (insgesamt, jedoch nicht teilweise) durch eine unwiderrufliche Mitteilung gemäß § 13 unter Einhaltung einer Frist von mindestens 10 Geschäftstagen zu kündigen.

Erfolgt die Kündigung aufgrund eines Quellensteuer-Ereignisses, hat die Emittentin sämtliche ausstehenden Schuldverschreibungen zu einem Betrag je Schuldverschreibung in Höhe der festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen.

Erfolgt die Kündigung aufgrund eines Steuerereignisses, eines Ratingagenturereignisses oder eines Akquisitionereignisses hat die Emittentin sämtliche ausstehenden

accrue at the then Prevailing Interest Rate on the Specified Denomination per Note outstanding beyond the due date to the beginning of the day of actual redemption of the Notes.

§ 5

REDEMPTION AND PURCHASE

- (1) *Maturity Date.* Unless previously redeemed or repurchased and cancelled, Issuer will repay the aggregate principal amount of the Notes outstanding on June 25, 2079 (the "**Maturity Date**").
- (2) *Issuer Call Right due to a Gross-up Event, a Tax Event, a Rating Agency Event or an Acquisition Event.*
 - (a) If either a Gross-up Event, a Tax Event, a Rating Agency Event or an Acquisition Event occurs, the Issuer may call and redeem the Notes (in whole but not in part) at any time by giving of not less than 10 Business Days' irrevocable notice in accordance with § 13.

If the Notes are called by the Issuer upon the occurrence of a Gross-up Event, all outstanding Notes will be redeemed at an amount per Note equal to the Specified Denomination plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

If the Notes are called upon the occurrence of a Tax Event, a Rating Agency Event or an Acquisition Event the Issuer will redeem all outstanding Notes (i) at an amount equal to 101 % of

Schuldverschreibungen (i) zu einem Betrag je Schuldverschreibung in Höhe von 101 % der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen, soweit eine solche Rückzahlung vor dem Ersten Rückzahlungstag erfolgt, oder (ii) zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen, soweit eine solche Rückzahlung an oder nach dem Ersten Rückzahlungstag erfolgt.

- (b) Im Fall eines Quellensteuer-Ereignisses kann eine Kündigungsmitteilung nicht früher als 90 Tage vor dem ersten Tag gemacht werden, an dem die Emittentin erstmals verpflichtet wäre, die jeweiligen Zusätzlichen Beträge (wie in § 8 beschrieben) in Ansehung fälliger Beträge auf die Schuldverschreibungen zu zahlen.

Im Fall eines der in diesem § 5(2) bezeichneten Ereignisse kann eine Kündigungsmitteilung nur zeitgleich mit oder nach einer Mitteilung der Emittentin über den Eintritt eines dieser Ereignisse nach Maßgabe von § 13 gemacht werden.

Die Emittentin hat der Hauptzahlstelle vor Abgabe einer Kündigungsmitteilung aus einem der in § 5(2) genannten Gründe folgende Dokumente zu übermitteln bzw. deren Übermittlung zu veranlassen:

- (i) eine von zwei ordnungsgemäß bevollmächtigten Vertretern der Emittentin unterzeichnete Bescheinigung, die bestätigt, dass die Emittentin berechtigt ist, die maßgebliche Rückzahlung

the Specified Denomination per Note plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b) if such redemption occurs prior to the First Call Date, or (ii) at an amount equal to the Specified Denomination per Note plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b) if such redemption occurs on or after the First Call Date.

- (b) In the case of a Gross-up Event no notice of redemption may be given earlier than 90 days prior to the earliest day on which the Issuer would be for the first time obliged to pay the Additional Amounts (as described in § 8) in question on payments due in respect of the Notes.

In the case of any event specified in this § 5(2) a notice of redemption may only be given simultaneously with or after a notification by the Issuer in accordance with § 13 that such an event has occurred.

Prior to the giving of any notice of redemption resulting from any event specified in § 5(2), the Issuer shall deliver or procure that there is delivered to the Principal Paying Agent:

- (i) a certificate signed by any two duly authorized representatives of the Issuer stating that the Issuer is entitled to effect such redemption and setting out a statement of facts showing that

vorzunehmen, und aus der die
Tatsachen hervorgehen, auf
deren Grundlage die
Voraussetzungen für das
Rückzahlungsrecht der
Emittentin eingetreten sind;
sowie

- (ii) für den Fall eines Quellensteuer-Ereignisses, ein Gutachten eines angesehenen externen Rechtsberaters, aus dem hervorgeht, dass die Emittentin verpflichtet ist oder verpflichtet sein wird, die betreffenden zusätzlichen Beträge als Folge eines Quellensteuer-Ereignisses zu zahlen.

(3) *Definitionen.*

Ein "**Quellensteuer-Ereignis**" liegt vor, falls die Emittentin verpflichtet ist oder verpflichtet sein wird, Zusätzliche Beträge (wie in § 8 beschrieben) als Folge einer Änderung oder Ergänzung von Gesetzen oder Vorschriften der Bundesrepublik Deutschland oder einer ihrer Gebietskörperschaften oder Steuerbehörden oder als Folge einer Änderung oder Ergänzung der offiziellen Auslegung oder Anwendung dieser Gesetze oder Vorschriften durch eine gesetzgebende Körperschaft, ein Gericht, eine Steuerbehörde, eine Aufsichtsbehörde oder eine sonstige Behörde (einschließlich des Erlasses von Gesetzen sowie der Bekanntmachung gerichtlicher oder aufsichtsrechtlicher Entscheidungen) zu zahlen, allerdings nur soweit die betreffende Änderung, Ergänzung oder Durchführung an oder nach dem Ausgabetag der Schuldverschreibungen wirksam wird und die Emittentin die Zahlungsverpflichtung nicht durch das Ergreifen von Maßnahmen vermeiden kann, die sie nach Treu und Glauben für angemessen hält.

Ein "**Steuerereignis**" liegt vor, wenn

- (a) der Hauptzahlstelle ein Gutachten eines anerkannten unabhängigen Steuerberaters übergeben worden ist, aus dem hervorgeht, dass an oder nach

the conditions precedent to the
exercise of the right of the Issuer
to redeem have been satisfied;
and

- (ii) in the case of a Gross-up Event, an opinion of an external legal adviser of recognised standing to the effect that the Issuer has or will become obliged to pay the additional amounts in question as a result of a Gross-up Event.

(3) *Definitions.*

A "**Gross-up Event**" has occurred if the Issuer has or will become obliged to pay Additional Amounts (as set out in § 8) as a result of any change in, or amendment to, the laws or regulations of the Federal Republic of Germany or any political subdivision or taxing authority thereof, or therein, or as a result of any amendment to, or any change in, any official interpretation or application of any such laws or regulations by any legislative body, court, or taxing authority, governmental agency or regulatory authority (including the enactment of any legislation and the publication of any judicial decision or regulatory determination), provided that the relevant amendment, change or execution becomes effective on or after the issue date of the Notes and provided further that the payment obligation cannot be avoided by the Issuer taking such reasonable measures it (acting in good faith) deems appropriate.

A "**Tax Event**" shall have occurred if

- (a) an opinion of a recognised independent tax counsel has been delivered to the Principal Paying Agent, stating that on or after the issue date of the Notes, as a result of:

dem Ausgabetag der Schuldverschreibungen als Folge:

- | | |
|---|---|
| (i) einer Änderung oder Ergänzung der Gesetze (oder von aufgrund dieser Gesetze erlassenen Bestimmungen oder Vorschriften) der Bundesrepublik Deutschland oder einer ihrer Gebietskörperschaften oder Steuerbehörden, die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen, verkündet oder anderweitig wirksam wird; oder | (i) any amendment to, or change in, the laws (or any rules or regulations thereunder) of the Federal Republic of Germany or any political subdivision or any taxing authority thereof or therein which is enacted, promulgated, issued or becomes effective otherwise on or after the issue date of the Notes; or |
| (ii) einer Änderung oder Ergänzung der bindenden offiziellen Auslegung solcher Gesetze, Bestimmungen oder Vorschriften durch eine gesetzgebende Körperschaft, ein Gericht, eine Regierungsstelle oder eine Aufsichtsbehörde (einschließlich des Erlasses von Gesetzen sowie der Bekanntmachung gerichtlicher oder aufsichtsrechtlicher Entscheidungen), die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen, verkündet oder anderweitig wirksam wird; oder | (ii) any amendment to, or change in, an official and binding interpretation of any such laws, rules or regulations by any legislative body, court, governmental agency or regulatory authority (including the enactment of any legislation and the publication of any judicial decision or regulatory determination) which is enacted, promulgated, issued or becomes effective otherwise on or after the issue date of the Notes; or |
| (iii) einer allgemein anwendbaren offiziellen Auslegung oder Verkündung, die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen oder verkündet wird und nach der die Rechtslage im Hinblick auf diese Gesetze oder Vorschriften von der früheren allgemein anerkannten Rechtslage abweicht; | (iii) any generally applicable official interpretation or pronouncement that provides for a position with respect to such laws or regulations that differs from the previous generally accepted position which is issued or announced on or after the issue date of the Notes; |

Zahlungen, die von der Emittentin in Bezug auf die Schuldverschreibungen zahlbar sind, von der Emittentin nicht mehr für die Zwecke der deutschen Körperschaftssteuer voll abzugsfähig

payments by the Issuer on the Notes are no longer, or within 90 days of the date of that opinion will no longer be, fully deductible by the Issuer for German corporate income tax purposes; and

sind, bzw. innerhalb von 90 Tagen nach dem Datum dieses Gutachtens nicht mehr voll abzugsfähig sein werden; und

- (b) die Emittentin dieses Risiko nicht durch das Ergreifen zumutbarer Maßnahmen vermeiden kann.

Ein "**Ratingagenturereignis**" liegt vor, wenn die Emittentin von S&P oder Moody's oder von einem ihrer jeweiligen Rechtsnachfolger (jeweils eine "**Relevante Ratingagentur**"), schriftlich benachrichtigt wurde oder die Relevante Ratingagentur veröffentlicht, dass die Schuldverschreibungen aufgrund einer Änderung der Hybrid Rating Methodologie oder deren Auslegung nicht mehr der Anfänglichen

Eigenkapitalanrechnungskategorie (wie nachstehend definiert) und auch nicht einer höheren Eigenkapitalanrechnungskategorie (oder einer vergleichbaren Bezeichnung durch diese Relevante Ratingagentur, die beschreibt, in welchem Umfang der Bedingungen eines Finanzierungsinstruments die Fähigkeit der Emittentin zur Bedienung ihrer vorrangigen Verbindlichkeiten stützt) zuzuordnen sind.

"**Anfängliche Eigenkapitalanrechnungskategorie**" bezeichnet die Eigenkapitalanrechnungskategorie, der die Schuldverschreibungen mit Wirkung ab dem Tag, ab dem in Bezug auf die Schuldverschreibungen kein Akquisitionereignis mehr eintreten kann, zugeordnet sein werden, wie anfänglich am oder um den Tag ihrer Begebung durch die Relevante Ratingagentur gegenüber der Emittentin bestätigt.

Ein "**Akquisitionereignis**" liegt vor, wenn (x) die Emittentin oder eine Tochtergesellschaft den Erwerb der Versum Materials, Inc. nicht abgeschlossen und vollzogen hat und (y) öffentlich erklärt hat, dass sie nicht länger beabsichtigt, den Erwerb zu verfolgen und die Emittentin gemäß § 13 den Gläubigern dieses Akquisitionereignis am oder vor dem 13. Juli 2020 bekanntgemacht hat bevor sie die Erklärung nach § 5(2)(a) abgegeben hat. Die Emittentin kann auf ihr Recht zur Rückzahlung wegen eines Akquisitionereignisses

- (b) such risk cannot be avoided by the Issuer taking reasonable measures available to it.

A "**Rating Agency Event**" has occurred if the Issuer has received written confirmation from either S&P or Moody's or from any of their respective legal successors, (each a "**Relevant Rating Agency**") or the Relevant Rating Agency publishes, that the Notes due to a change in hybrid rating methodology or the interpretation thereof will no longer be eligible for the Initial Category of Equity Credit (as defined below) or a higher category of equity credit (or such similar nomenclature as being used by that Relevant Rating Agency from time to time to describe the degree to which the terms of an instrument are supportive of the Issuer's senior obligations).

"**Initial Category of Equity Credit**" means the category of equity credit to be attributed to the Notes with effect from the date on which the Notes will no longer be subject to an Acquisition Event, as first confirmed by the Relevant Rating Agency to the Issuer at or around the date of issuance.

An "**Acquisition Event**" shall occur if (x) the Issuer or any Subsidiary has not completed and closed the acquisition of Versum Materials, Inc., and (y) has publicly stated that it no longer intends to pursue such acquisition; and the Issuer has given notice to the Holders in accordance with § 13 on or prior to July 13, 2020 of such Acquisition Event prior to giving the notice in accordance with § 5(2)(a). The Issuer may waive its right to call the Notes for redemption based on an Acquisition Event by giving notice pursuant to § 13.

verzichten, indem sie dies nach § 13 bekannt macht.

(4) *Rückzahlung nach Wahl der Emittentin.*

Die Emittentin kann die Schuldverschreibungen (insgesamt, jedoch nicht teilweise) mit Wirkung (i) zu jedem Tag während des Zeitraums ab dem 18. September 2024 (der "**Erste Rückzahlungstag**") bis zum Ersten Resettag (jeweils einschließlich) und (ii) zu jedem danach folgenden Zinszahlungstag nach unwiderruflicher Kündigungsmitteilung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von mindestens 20 Geschäftstagen kündigen.

Eine solche Kündigungsmitteilung verpflichtet die Emittentin, sämtliche ausstehenden Schuldverschreibungen zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen.

(5) *Rückkauf von Schuldverschreibungen.* Die Emittentin oder Tochtergesellschaften können unter Einhaltung der einschlägigen gesetzlichen Vorschriften jederzeit Schuldverschreibungen im Markt oder anderweitig zu jedem beliebigen Preis kaufen. Derartig erworbene Schuldverschreibungen können entwertet, gehalten oder wieder veräußert werden.

(6) *Kündigungsrecht der Emittentin bei geringem ausstehenden Gesamtnennbetrag.* Falls die Emittentin und/oder eine Tochtergesellschaft allein oder gemeinsam Schuldverschreibungen im Volumen von 80 % oder mehr des ursprünglich begebenen Gesamtnennbetrages der Schuldverschreibungen erworben hat, kann die Emittentin die verbleibenden Schuldverschreibungen (insgesamt, jedoch nicht teilweise) nach unwiderruflicher Kündigungsmitteilung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von mindestens 20 und höchstens 40 Geschäftstagen kündigen und zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum

(4) *Redemption at the Option of the Issuer.*

The Issuer may call and redeem the Notes (in whole but not in part) with effect (i) as of any date during the period from and including September 18, 2024 (the "**First Call Date**") to and including the First Reset Date and (ii) on any Interest Payment Date thereafter upon giving not less than 20 Business Days' irrevocable notice of redemption to the Holders in accordance with § 13.

Such notice of redemption shall oblige the Issuer to redeem all outstanding Notes at an amount per Note equal to the Specified Denomination plus any interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

(5) *Purchase of Notes.* The Issuer or any Subsidiary may, in compliance with applicable laws, at any time purchase Notes in the open market or otherwise and at any price. Such acquired Notes may be cancelled, held or resold.

(6) *Issuer Call Right in the case of Minimal Outstanding Aggregate Principal Amount.* In the event that the Issuer and/or any Subsidiary has, severally or jointly, purchased Notes equal to or in excess of 80 % of the aggregate principal amount of the Notes initially issued, the Issuer may call and redeem the remaining Notes (in whole but not in part) upon giving not less than 20 and not more than 40 Business Days' irrevocable notice of redemption to the Holders in accordance with § 13 at an amount equal to the Specified Denomination per Note plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest

Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzahlen.

(7) *Kündigungsrecht der Emittentin nach Eintritt eines Kontrollwechselereignisses.*

(a) Wenn ein Kontrollwechselereignis (wie in § 5(7)(c) definiert) eintritt, hat die Emittentin binnen 20 Geschäftstagen den Kontrollwechsel-Stichtag (wie in § 5(7)(c) definiert) zu bestimmen und das Kontrollwechselereignis und den Kontrollwechsel-Stichtag gemäß § 13 anzuzeigen (die "**Kontrollwechsel-Mitteilung**").

(b) Wenn ein Kontrollwechselereignis eintritt, ist die Emittentin berechtigt, die Schuldverschreibungen (insgesamt, jedoch nicht teilweise) durch Erklärung gemäß dem nachstehenden Absatz mit Wirkung zu dem Kontrollwechsel-Stichtag zu kündigen. Im Falle einer solchen Kündigung hat die Emittentin jede ausstehende Schuldverschreibung am Kontrollwechsel-Stichtag zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Kontrollwechsel-Stichtag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände, zurückzuzahlen.

Die Emittentin kann ihr Recht zur Rückzahlung gemäß diesem § 5(7) durch eine Bekanntmachung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von nicht mehr als 5 Geschäftstagen nach Bekanntmachung der Kontrollwechsel-Mitteilung ausüben. Diese Bekanntmachung kann auch zeitgleich mit der Kontrollwechsel-Mitteilung erfolgen

(c) In diesem § 5(7) gilt:

Ein "**Kontrollwechselereignis**" gilt jedes Mal in einem der folgenden Fälle als eingetreten, wenn (i) E. Merck KG, Darmstadt das Recht verliert, die

Payments due and payable pursuant to § 4(8)(b).

(7) *Issuer Call Right following a Change of Control Event.*

(a) If a Change of Control Event (as defined in § 5(7)(c)) occurs, the Issuer will fix the Change of Control Effective Date (as defined in § 5(7)(c)) and give notice in accordance with § 13 of the Change of Control and the Change of Control Effective Date within 20 Business Days (the "**Change of Control Notice**").

(b) If a Change of Control Event occurs, the Issuer may call the Notes for redemption (in whole but not in part) with effect as of the Change of Control Effective Date upon giving notice in accordance with the following paragraph. In the case such call notice is given, the Issuer shall redeem each Note outstanding at an amount per Note equal to the Specified Denomination plus any Interest accrued and unpaid to but excluding the Change of Control Effective Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

The Issuer may give not more than 5 Business Days' notice to the Holders after publication of the Change of Control Notice in accordance with § 13 of an early redemption pursuant to this § 5(7). Such notice may be given simultaneously with the Change of Control Notice.

(c) In this § 5(7):

A "**Change of Control Event**" shall be deemed to have occurred at each time if (i) E. Merck KG, Darmstadt loses the right to appoint, subject to the consent of

Mehrheit der persönlich haftenden Gesellschafter ohne Kapitalanteil der Merck KGaA, Darmstadt mit Zustimmung der einfachen Mehrheit der anderen persönlich haftenden Gesellschafter zu bestellen, und (ii) eine Person oder mehrere Personen, die abgestimmt handeln, oder einer oder mehrere Dritte, die im Auftrag einer solchen Person oder solcher Personen handeln, zu irgendeiner Zeit mittelbar oder unmittelbar (unabhängig davon, ob die persönlich haftenden Gesellschafter oder der Aufsichtsrat der Merck KGaA, Darmstadt ihre bzw. seine Zustimmung erteilt hat bzw. haben) mehr als 50 % des Grundkapitals der Merck KGaA, Darmstadt erwirbt (erwerben) (ein "**Kontrollwechsel**"); und die Merck KGaA, Darmstadt bei Eintritt des Kontrollwechsels über ein (mit Zustimmung der Merck KGaA, Darmstadt erteiltes) Rating von Moody's Investors Service Limited ("**Moody's**") oder Standard & Poor's Rating Services ein Unternehmen der S&P Global Inc. ("**S&P**") oder einer jeweiligen Nachfolgegesellschaft (jeweils eine "**Ratingagentur**") verfügt, entsprechend: (x) einem Investment Grade Rating (Baa3/BBB- oder gleichwertig oder besser) und dieses Rating von einer Ratingagentur innerhalb von 120 Tagen nach dem Kontrollwechsel zu einem non-investment Grade Rating (Ba1/BB+ oder gleichwertig oder schlechter) herabgestuft oder das Rating zurückgezogen wurde und nicht innerhalb dieser 120-Tagesperiode anschließend (im Falle einer Herabstufung) durch diese Ratingagentur wieder auf ein Investment Grade Rating heraufgestuft oder (im Falle einer Zurückziehung) durch das Investment Grade Rating einer anderen Ratingagentur ersetzt wurde; oder (y) einem non-investment Grade Rating (Ba1/BB+ oder gleichwertig oder schlechter) und dieses Rating durch eine

the simple majority of the other partners liable on an unlimited basis (*persönlich haftende Gesellschafter*) of Merck KGaA, Darmstadt, the majority of the personally liable partners not contributing capital (*persönlich haftende Gesellschafter ohne Kapitalanteil*) of Merck KGaA, Darmstadt, and (ii) any person or persons acting in concert or any person or persons acting on behalf of any such person(s), at any time directly or indirectly acquire(s) (whether or not approved by the partners liable on an unlimited basis (*persönlich haftende Gesellschafter*) or the supervisory board (*Aufsichtsrat*) of Merck KGaA, Darmstadt more than 50 % of the share capital (*Grundkapital*) of Merck KGaA, Darmstadt (a "**Change of Control**"); and at the time of the occurrence of a Change of Control, Merck KGaA, Darmstadt carries (with the agreement of Merck KGaA, Darmstadt) from any of Moody's Investors Service Limited ("**Moody's**") or Standard & Poor's Rating Services, a division of S&P Global Inc. ("**S&P**"), or any of their respective successors (each, a "**Rating Agency**"): (x) an investment grade credit rating (Baa3/BBB-, or equivalent, or better), and such rating from any Rating Agency is within 120 days of such time either downgraded to a non-investment grade credit rating (Ba1/BB+, or equivalent, or worse) or withdrawn and is not within such 120-day period subsequently (in the case of a downgrade) upgraded to an investment grade credit rating by such Rating Agency or (in the case of withdrawal) replaced by an investment grade credit rating from any other Rating Agency; or (y) a non-investment grade credit rating (Ba1/BB+, or equivalent, or worse), and such rating from any Rating Agency is within 120 days of such time downgraded by one or more notches (for illustration, Ba1 to Ba2 being one notch) and is not within such 120-day period subsequently upgraded to its earlier

Ratingagentur innerhalb von 120 Tagen nach Kontrollwechsel um eine oder mehrere Stufen (zur Erläuterung: Ba1 nach Ba2 entspricht einer Stufe) herabgestuft und nicht innerhalb dieser 120-Tagesperiode anschließend wieder auf das ursprüngliche oder ein besseres Rating durch diese Ratingagentur heraufgestuft wurde, wobei falls die Merck KGaA, Darmstadt zum Zeitpunkt des Eintritts des Kontrollwechsels über ein Rating von mehr als einer Ratingagentur verfügt, von denen mindestens eines ein Investment Grade Rating ist, die Regelung unter (x) Anwendung findet; und im Zusammenhang mit einer der oben genannten Entscheidungen die betreffende Ratingagentur öffentlich bekannt macht oder gegenüber der Merck KGaA, Darmstadt schriftlich bestätigt, dass diese Entscheidung ganz oder teilweise auf den Kontrollwechsel zurückzuführen ist.

Falls sich die von Moody's oder S&P verwendeten Rating Kategorien gegenüber denen, die in vorangegangenen Absatz angegeben wurden, ändern sollten, wird die Emittentin diejenigen Rating Kategorien von Moody's oder S&P bestimmen, die den früheren Rating Kategorien von Moody's oder S&P möglichst nahe kommen; der vorangegangene Absatz ist dann entsprechend auszulegen.

"Kontrollwechsel-Stichtag" bezeichnet den von der Emittentin in der Kontrollwechsel-Mitteilung festgelegten Tag, der (i) falls zum betreffenden Zeitpunkt nicht nachrangige Fremdkapitalwertpapiere der Merck KGaA, Darmstadt ausstehen, der fünfte Geschäftstag nach dem Tag sein muss, an dem solche Wertpapiere aufgrund einer Kündigung der Gläubiger dieser Wertpapiere wegen des gleichen Kontrollwechsel-Ereignisses (oder eines vergleichbaren Konzepts) fällig werden können; und (ii) falls zum betreffenden

credit rating or better by such Rating Agency, provided that if at the time of the occurrence of the Change of Control Merck KGaA, Darmstadt carries a rating from more than one Rating Agency, at least one of which is investment grade, then sub-paragraph (x) will apply; and in making the relevant decision(s) referred to above, the relevant Rating Agency announces publicly or confirms in writing to Merck KGaA, Darmstadt that such decision(s) resulted, in whole or in part, from the occurrence of the Change of Control.

If the rating designations employed by any of Moody's or S&P are changed from those which are described in the paragraph above, the Issuer shall determine the rating designations of Moody's or S&P (as appropriate) as are most equivalent to the prior rating designations of Moody's or S&P and the paragraph above shall be read accordingly.

"Change of Control Effective Date" means the date fixed by the Issuer in the Change of Control Notice, which (i) must, if at the relevant time any senior debt securities of Merck KGaA, Darmstadt are outstanding, be the fifth Business Day following the date on which such securities may become payable due to put notices of the holders of such securities in respect of the same Change of Control Event (or a similar concept); and (iii) must, if at the relevant time no senior debt securities of Merck KGaA, Darmstadt are outstanding, be a

Zeitpunkt keine nicht nachrangigen Fremdkapitalwertpapiere der Merck KGaA, Darmstadt ausstehen ein Geschäftstag sein muss, der nicht mehr als 40 Tage nach Bekanntmachung der Kontrollwechsel-Mitteilung liegen darf.

§ 6 ZAHLUNGEN

- (1) *Zahlung von Kapital und Zinsen.* Die Emittentin verpflichtet sich, Kapital und Zinsen auf die Schuldverschreibungen sowie alle sonstigen auf die Schuldverschreibungen zahlbaren Beträge bei Fälligkeit in Euro zu zahlen. Die Zahlung von Kapital und Zinsen sowie allen sonstigen auf die Schuldverschreibungen zahlbaren Beträge erfolgt an die Hauptzahlstelle zur Weiterleitung an das Clearingsystem oder an dessen Order zur Gutschrift für die jeweiligen Kontoinhaber und im Fall von Zinsen und Zinsrückständen auf Schuldverschreibungen, die durch die Vorläufige Globalurkunde verbrieft sind, nach ordnungsgemäßer Bescheinigung gemäß § 2(2)(b). Die Zahlung an das Clearingsystem oder an dessen Order, vorausgesetzt, die Schuldverschreibungen werden noch durch das Clearingsystem gehalten, befreit die Emittentin in Höhe der geleisteten Zahlung von ihren entsprechenden Verbindlichkeiten aus den Schuldverschreibungen.
- (2) *Fälligkeitstag kein Geschäftstag.* Falls ein Fälligkeitstag für die Zahlung von Kapital und/oder Zinsen und/oder Zinsrückständen kein Geschäftstag ist, erfolgt die Zahlung, erst am nächstfolgenden Geschäftstag; Gläubiger sind nicht berechtigt, Zinsen oder eine andere Entschädigung wegen eines solchen Zahlungsaufschubs zu verlangen.
- (3) *Lieferung und Zahlungen nur außerhalb der Vereinigten Staaten.* Unbeschadet der übrigen Bestimmungen in diesen Anleihebedingungen erfolgen die Lieferung oder Kapitalrückzahlungen oder Zinszahlungen bezüglich der Schuldverschreibungen, sei es in bar oder in anderer Form, ausschließlich außerhalb der Vereinigten Staaten.

Business Day which falls not more than 40 days after publication of the Change of Control Notice.

§ 6 PAYMENTS

- (1) *Payment of Principal and Interest.* The Issuer undertakes to pay, as and when due, principal and Interest as well as all other amounts payable on the Notes in euro. Payment of principal and Interest as well as all other amounts due and payable on the Notes shall be made to the Principal Paying Agent for on-payment to the Clearing System or to its order for credit to the respective accountholders and, in the case of payments of Interest and Deferred Interest Payments on Notes represented by the Temporary Global Note, upon due certification as provided in § 2(2)(b). Payments to the Clearing System or to its order shall, to the extent of amounts so paid and provided the Notes are still held on behalf of the Clearing System, constitute the discharge of the Issuer from its corresponding obligations under the Notes.
- (2) *Due Date not a Business Day.* If the due date for any payment of principal and/or Interest and/or Deferred Interest Payments is not a Business Day, payment shall be effected only on the next Business Day; a Holder shall have no right to claim payment of any interest or other indemnity in respect of such delay in payment.
- (3) *No Delivery or Payment Except outside United States.* Notwithstanding any other provision of these Terms and Conditions, no delivery or payment of principal or Interest in respect of the Notes, whether in cash or otherwise, shall be made unless such payment is made outside the United States.

§ 7

ZAHLSTELLEN UND BERECHNUNGSSTELLE

- (1) *Hauptzahlstelle.* Die Hauptzahlstelle (die "**Hauptzahlstelle**") ist:
Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Bundesrepublik Deutschland
- (2) *Berechnungsstelle.* Die Berechnungsstelle (die "**Berechnungsstelle**") ist:
Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Bundesrepublik Deutschland
- (3) *Ortswechsel.* Die Hauptzahlstelle und die Berechnungsstelle behalten sich das Recht vor, jederzeit ihre jeweiligen bezeichneten Geschäftsstellen durch eine andere bezeichnete Geschäftsstelle in der Bundesrepublik Deutschland zu ersetzen.
- (4) *Berechnungen der Berechnungsstelle.* Sämtliche Bescheinigungen, Mitteilungen, Gutachten, Festsetzungen, Berechnungen, Quotierungen und Entscheidungen, die von der Berechnungsstelle für die Zwecke dieser Anleihebedingungen gemacht, abgegeben, getroffen oder eingeholt werden, sind (sofern nicht vorsätzliches Fehlverhalten oder ein offensichtlicher Irrtum vorliegt) für die Emittentin, die Gläubiger und die Zahlstellen bindend.
- (5) *Änderung der Bestellung oder Abberufung.* Die Emittentin behält sich das Recht vor, jederzeit die Bestellung der Hauptzahlstelle oder der Berechnungsstelle zu ändern oder zu beenden und eine andere Hauptzahlstelle oder zusätzliche oder andere Zahlstellen oder eine andere Berechnungsstelle zu bestellen. Die Emittentin wird zu jedem Zeitpunkt eine Hauptzahlstelle und eine Berechnungsstelle unterhalten. Eine Änderung, Abberufung, Bestellung oder ein sonstiger Wechsel wird nur wirksam (außer im Insolvenzfall, in dem eine solche Änderung sofort wirksam wird), sofern

§ 7

PAYING AGENTS AND CALCULATION AGENT

- (1) *Principal Paying Agent.* Principal paying agent (the "**Principal Paying Agent**") shall be:
Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Federal Republic of Germany
- (2) *Calculation Agent.* Calculation agent (the "**Calculation Agent**") shall be:
Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Federal Republic of Germany
- (3) *Change of Office.* Each of the Principal Paying Agent and the Calculation Agent reserves the right at any time to change its specified office to some other specified office in the Federal Republic of Germany.
- (4) *Calculations made by the Calculation Agent.* All certificates, communications, opinions, determinations, calculations, quotations and decisions given, expressed, made or obtained for the purposes of the provisions of these Terms and Conditions by the Calculation Agent shall (in the absence of wilful misconduct or manifest error) be binding upon the Issuer, the Holders and the paying agents.
- (5) *Variation or Termination of Appointment.* The Issuer reserves the right at any time to vary or terminate the appointment of the Principal Paying Agent or the Calculation Agent and to appoint another Principal Paying Agent or additional or other paying agents or another Calculation Agent. The Issuer shall at all times maintain a Principal Paying Agent and a Calculation Agent. Any variation, termination, appointment or other change shall only take effect (other than in the case of insolvency, when it shall be of immediate effect) after not less than 30 nor more than 45 days' prior notice

die Gläubiger hierüber gemäß § 13 vorab unter Einhaltung einer Frist von mindestens 30 und nicht mehr als 45 Tagen informiert wurden.

- (6) *Erfüllungsgehilfe(n) der Emittentin.* Die Hauptzahlstelle und die Berechnungsstelle handeln ausschließlich als Beauftragte der Emittentin und übernehmen keine Verpflichtungen gegenüber den Gläubigern; es wird kein Vertrags-, Auftrags- oder Treuhandverhältnis zwischen ihnen und den Gläubigern begründet.
- (7) Wenn die Emittentin gemäß § 4(2)(h) einen Unabhängigen Berater bestellt, dann sind § 7(4)-(6) entsprechend auf den Unabhängigen Berater anzuwenden.

§ 8

BESTEUERUNG

Alle in Bezug auf die Schuldverschreibungen von der Emittentin an die Gläubiger zahlbaren Kapitalbeträge, Zinsen und Zinsrückstände werden ohne Einbehalt oder Abzug von gegenwärtigen oder zukünftigen Steuern oder Abgaben gleich welcher Art ("**Steuern**") gezahlt, die von oder im Namen der Bundesrepublik Deutschland, ihrer Bundesländer oder einer ihrer anderen steuererhebungsberechtigten Gebietskörperschaften (das "**Steuerhoheitsgebiet**") im Wege des Abzugs oder Einbehalts auferlegt oder erhoben werden, es sei denn, ein solcher Abzug oder Einbehalt ist gesetzlich vorgeschrieben. Falls die Emittentin gesetzlich zu einem solchen Abzug oder Einbehalt verpflichtet ist, wird die Emittentin diejenigen zusätzlichen Beträge ("**Zusätzliche Beträge**") zahlen, die erforderlich sind, damit die den Gläubigern zufließenden Beträge jeweils den Beträgen entsprechen, die diese ohne einen solchen Einbehalt oder Abzug erhalten hätten. Die Verpflichtung zur Zahlung solcher Zusätzlichen Beträge besteht jedoch nicht in Bezug auf Folgendes:

- (1) Deutsche Kapitalertragsteuer (inklusive der sog. Abgeltungsteuer), die nach dem deutschen Einkommensteuergesetz abgezogen oder einbehalten wird, und den deutschen Solidaritätszuschlag und die deutsche Kirchensteuer oder jede andere Steuer, welche die deutsche Kapitalertragsteuer bzw. den Solidaritätszuschlag bzw. die Kirchensteuer ersetzen sollte, und Einbehalte jeder Art, die

thereof shall have been given to the Holders in accordance with § 13.

- (6) *Agent of the Issuer.* The Principal Paying Agent and the Calculation Agent act solely as agents of the Issuer and do not assume any obligations towards or relationship of contract, agency or trust for or with any of the Holders.
- (7) If the Issuer appoints an Independent Adviser in accordance with § 4(2)(h), § 7(4)-(6) shall apply *mutatis mutandis* to the Independent Adviser.

§ 8

TAXATION

All payments of principal, Interest and Deferred Interest Payments made by the Issuer in respect of the Notes to the Holders shall be made without withholding or deduction for, any present or future taxes or duties of whatever nature ("**Taxes**") imposed or levied by way of deduction or withholding by or on behalf of the Federal Republic of Germany, its federal states (*Bundesländer*) or any authority therein or thereof having power to tax (the "**Taxing Jurisdiction**"), unless such deduction or withholding is required by law. If the Issuer is required by law to make such deduction or withholding, the Issuer shall pay such additional amounts (the "**Additional Amounts**") as shall result in receipt by the Holders of such amounts as would have been received by them had no such withholding or deduction been required, except that no Additional Amounts shall be payable with respect to:

- (1) German *Kapitalertragsteuer* (including *Abgeltungsteuer*) to be deducted or withheld pursuant to the German Income Tax Act (*Einkommensteuergesetz*), and the German Solidarity Surcharge (*Solidaritätszuschlag*) and the German Church Tax (*Kirchensteuer*) or any other tax which may substitute the German *Kapitalertragsteuer* or *Solidaritätszuschlag* or *Kirchensteuer*, as the case may be, and

von der Emittentin oder einem ihrer Vertreter für Rechnung des Inhabers der Schuldverschreibungen auf die von diesem geschuldete Vermögensteuer vorzunehmen sind, für den Fall, dass eine entsprechende Steuer von dem deutschen Gesetzgeber eingeführt wird; oder

- (2) Zahlungen an einen Gläubiger oder an einen Dritten für einen Gläubiger, falls dieser Gläubiger (oder ein Treuhänder, Treugeber, Begünstigter, Mitglied oder Gesellschafter eines solchen Gläubigers, sofern es sich bei dem Gläubiger um eine Vermögensmasse, ein Treuhandvermögen, eine Personengesellschaft oder eine Kapitalgesellschaft handelt) aufgrund einer früheren oder gegenwärtigen Verbindung zu Deutschland, einschließlich eines solchen Gläubigers (bzw. Treuhänders, Treugebers, Begünstigten, Mitglieds oder Gesellschafters), der Staatsbürger oder Einwohner dieses Landes war oder ist oder in diesem Land ein Gewerbe, ein Geschäft oder eine Repräsentanz betrieben hat oder betreibt oder eine Betriebsstätte hatte oder hat, einem solchen Einbehalt oder Abzug unterliegt und sich diese Verbindung nicht nur darauf beschränkt, dass er die Schuldverschreibung hält oder die unter dieser jeweils zu leistenden Zahlungen erhält; oder
- (3) Zahlungen an einen Gläubiger oder an einen Dritten für einen Gläubiger, falls kein Einbehalt oder Abzug hätte erfolgen müssen, wenn die Schuldverschreibung zum Zeitpunkt der fraglichen Zahlung in einem Depotkonto bei einem nicht in Deutschland ansässigen Kreditinstitut Finanzdienstleistungsinstitut, Wertpapierhandelsunternehmen oder einer nicht in Deutschland ansässigen Wertpapierhandelsbank verwahrt gewesen wären; oder
- (4) Zahlungen, falls der Einbehalt oder Abzug bei Zahlung begründet wird durch (i) eine Richtlinie oder Verordnung der Europäischen Union betreffend die Besteuerung von Zinserträgen, welche an eine natürliche Person oder an bestimmte juristische Personen, die als sonstige Einrichtungen bezeichnet werden, ausgezahlt werden, oder (ii) eine zwischenstaatliche Vereinbarung über die

withholdings of any kind to be made by the Issuer or one of its representatives on behalf of a Holder, where such Holder is subject to German net asset tax (*Vermögensteuer*), in case such a tax will be enacted by the German legislative authorities; or

- (2) payments to, or to a third party on behalf of, a Holder where such Holder (or a fiduciary, trustor, beneficiary, member or interest holder of such Holder, if such Holder is an estate, a trust, a partnership or a corporation) is liable to such withholding or deduction by reason of having some present or former connection with Germany, including, without limitation, such Holder (or such fiduciary, trustor, beneficiary, member or interest holder) being or having been a citizen or resident thereof or being or having been engaged in a trade or business present therein or having, or having had, a permanent establishment therein, other than by reason only of the holding of such Note or the receipt of the relevant payment in respect thereof; or
- (3) payments to, or to a third party on behalf of, a Holder where no such withholding or deduction would have been required to be made if the Notes were credited at the time of payment to a securities deposit account with a bank, financial services institution, securities trading business or securities trading bank, in each case outside Germany; or
- (4) payments where such withholding or deduction is imposed pursuant to (i) any European Directive or regulation concerning the taxation of interest income paid to an individual and certain types of entities called "residual entities", or (ii) any international treaty or understanding relating to such taxation and to which Germany or the European Union is a party, or (iii) any provision of law

Besteuerung solcher Zinserträge, an der Deutschland oder die Europäische Union beteiligt ist, oder (iii) eine gesetzliche Vorschrift, die eine solche Richtlinie, Verordnung oder Vereinbarung umsetzt oder befolgt, oder (iv) das luxemburgische Gesetz vom 23. Dezember 2005, geändert durch das Gesetz vom 17. Juli 2008, bezüglich natürlicher Personen, die in Luxemburg ansässig sind, oder (v) einen Vertrag gemäß Abschnitt 1471(b) des U.S. Internal Revenue Code von 1986 (der "Code") oder andere Regelungen gemäß den Abschnitten 1471 bis 1474 des Codes sowie sämtliche darunter erlassene Vorschriften, amtliche Auslegungen und Umsetzungsakte, die auf zwischenstaatlichen Vereinbarungen beruhen; oder

- (5) Zahlungen, soweit der Einbehalt oder Abzug von einem Gläubiger oder von einem Dritten für einen Gläubiger vorzunehmen ist, der einen solchen Einbehalt oder Abzug dadurch rechtmäßig hätte vermeiden können (aber nicht vermieden hat), dass er gesetzliche Vorschriften beachtet, oder dafür sorgt, dass Dritte dieses tun, oder dadurch, dass er eine Nichtansässigkeitserklärung oder einen vergleichbaren Antrag auf Steuerbefreiung gegenüber der am Zahlungsort zuständigen Steuerbehörde abgibt oder dafür sorgt, dass dies durch einen Dritten erfolgt, oder
- (6) Zahlungen, deren Einbehalt oder Abzug von einem Gläubiger oder von einem Dritten für einen Gläubiger vorzunehmen ist, der einen solchen Einbehalt oder Abzug durch die Bewirkung einer Zahlung über eine andere Zahlstelle in einem Mitgliedstaat der Europäischen Union, welche nicht zu einem solchen Einbehalt oder Abzug verpflichtet ist, hätte vermeiden können; oder
- (7) Zahlungen, soweit der Einbehalt oder Abzug vorzunehmen ist, weil der Gläubiger eine Schuldverschreibung mehr als 30 Tage nach dem Tag zur Zahlung vorlegt, an dem diese Zahlung erfüllbar und fällig wurde bzw., soweit dies später eintritt, nach dem Tag, an dem die fällige Zahlung ordnungsgemäß bereitgestellt wurde; oder
- (8) jegliche Kombination der Absätze (1)-(7).

implementing, or complying with, or introduced to conform with, such Directive, regulation, treaty or understanding, or (iv) the Luxembourg law of December 23, 2005, as amended by the law of July 17, 2008, with respect to Luxembourg resident individuals, or (v) an agreement described in section 1471(b) of the U.S. Internal Revenue Code of 1986 (the "Code") or otherwise imposed pursuant to sections 1471 through 1474 of the Code, any regulations or agreements thereunder, any official interpretations thereof, or any law implementing an intergovernmental approach thereto; or

- (5) payments to the extent such withholding or deduction is payable by or on behalf of a Holder who could lawfully avoid (but has not so avoided) such withholding or deduction by complying or procuring that any third party complies with any statutory requirements or by making or procuring that a third party makes a declaration of non-residence or other similar claim for exemption to any tax authority in the place where the payment is effected; or
- (6) payments to the extent such withholding or deduction is payable by or on behalf of a Holder who would have been able to avoid such withholding or deduction by effecting a payment via another Paying Agent in a Member State of the European Union, not obliged to withhold or deduct tax; or
- (7) payments to the extent such withholding or deduction is for or on account of the presentation by the Holder of any Note for payment on a date more than 30 days after the date on which such payment became due and payable or the date on which payment thereof is duly provided for, whichever occurs later; or
- (8) any combination of items (1)-(7);

Zudem werden keine Zusätzlichen Beträge im Hinblick auf Zahlungen auf die Schuldverschreibungen an einen Gläubiger gezahlt, welcher die Zahlung als Treuhänder oder Personengesellschaft oder als sonstiger nicht alleiniger wirtschaftlicher Eigentümer erhält, soweit nach den Gesetzen des Steuerhoheitsgebiets eine solche Zahlung für Steuerzwecke dem Einkommen eines Begünstigten bzw. Treugebers bezüglich einer solchen Treuhand oder eines Gesellschafters der Personengesellschaft oder eines wirtschaftlichen Eigentümers zugerechnet würde, der jeweils selbst nicht zum Erhalt von Zusätzlichen Beträgen berechtigt wäre, wenn er selbst Gläubiger der Schuldverschreibung(en) wäre.

§ 9 VORLEGUNGSFRIST

Die in § 801 Absatz 1 Satz 1 BGB bestimmte Vorlegungsfrist wird für die Schuldverschreibungen auf zehn Jahre verkürzt.

§ 10 ERSETZUNG DER EMITTENTIN

(1) *Ersetzung.* Die Emittentin (wobei eine Bezugnahme auf die Emittentin auch alle früheren Nachfolgeschuldnerinnen (wie nachfolgend definiert) umfasst) ist jederzeit berechtigt, wenn kein Zahlungsverzug hinsichtlich Kapital oder Zinsen oder Zinsrückstände auf die Schuldverschreibungen vorliegt, ohne weitere Zustimmung der Gläubiger ein Verbundenes Finanzierungsunternehmen an ihrer Stelle als Hauptschuldnerin (ein solches Unternehmen ist die "**Nachfolgeschuldnerin**") für alle Verpflichtungen aus und im Zusammenhang mit den Schuldverschreibungen einzusetzen, vorausgesetzt, dass:

- (a) die Nachfolgeschuldnerin alle Verpflichtungen der Emittentin aus den Schuldverschreibungen übernimmt;
- (b) die Nachfolgeschuldnerin in der Lage ist, sämtliche sich aus den Schuldverschreibungen ergebenden Zahlungsverpflichtungen in Euro leisten kann, ohne gesetzlich zu einem Abzug oder Einbehalt von Steuern (wie in § 8

nor shall any Additional Amounts be paid with respect to any payment on a Note to a Holder who is a fiduciary or partnership or who is other than the sole beneficial owner of such payment to the extent such payment would be required by the laws of the Taxing Jurisdiction to be included in the income, for tax purposes, of a beneficiary or trustor with respect to such fiduciary or a member of such partnership or a beneficial owner who would not have been entitled to such Additional Amounts had such beneficiary, trustor, member or beneficial owner been the Holder of the Note(s).

§ 9 PRESENTATION PERIOD

The presentation period provided in section 801 paragraph 1 sentence 1 of the German Civil Code (*Bürgerliches Gesetzbuch*) is reduced to ten years for the Notes.

§ 10 SUBSTITUTION OF ISSUER

(1) *Substitution.* The Issuer (reference to which shall always include any previous Substitute Debtor (as defined below)) may, at any time, if no payment of principal or interest or Deferred Interest Payments on any of the Notes is in default, without the consent of the Holders, substitute for the Issuer any Financing Affiliate (as defined below) as the principal debtor in respect to the Notes (any such company, the "**Substitute Debtor**"), provided that:

- (a) the Substitute Debtor assumes all obligations of the Issuer under the Notes;
- (b) the Substitute Debtor is in a position to fulfil all payment obligations under the Notes in euro without being required by law to make any withholding or deduction for, any Taxes (as defined in § 8) levied by the country or jurisdiction

definiert) in dem Land oder Hoheitsgebiet, in dem die Nachfolgeschuldnerin ihren Sitz hat (mit Ausnahme von Steuern, die auch angefallen wären, wäre die Ersetzung nicht erfolgt), verpflichtet zu sein;

- (c) kein Kündigungsrecht gemäß § 5 aufgrund der Ersetzung der Emittentin durch die Nachfolgeschuldnerin ausgelöst wird;
- (d) die Emittentin unwiderruflich und unbedingt gegenüber den Gläubigern die Zahlung aller von der Nachfolgeschuldnerin auf die Schuldverschreibungen zahlbaren Beträge garantiert (die "**Ersetzungs-Garantie**");
- (e) die Nachfolgeschuldnerin sich verpflichtet, jedem Gläubiger sämtliche Steuern, Gebühren oder Abgaben zu erstatten, die ihm im Zuge der Ersetzung der Emittentin gemäß diesem § 10 auferlegt werden, vorausgesetzt, dass sich die Verpflichtung auf Beträge beschränkt, die der Gläubiger ohne die Ersetzung der Emittentin nicht hätte tragen müssen; und
- (f) der Hauptzahlstelle jeweils ein Rechtsgutachten bezüglich jeder betroffenen Rechtsordnung von anerkannten Rechtsanwälten vorgelegt wurden, die bestätigen, dass die Bestimmungen in den vorstehenden Unterabsätzen (a) bis (e) erfüllt wurden.

Für Zwecke dieses § 10 bezeichnet "**Verbundenes Finanzierungsunternehmen**" jedes verbundene Unternehmen im Sinne des § 15 AktG der Emittentin, dessen Geschäftszweck in der Aufnahme von Mitteln für die Refinanzierung von verbundenen Unternehmen besteht und die keine wesentlichen operativen Vermögenswerte oder Anteile an operativen Gesellschaften der Emittentin oder deren Tochtergesellschaften hält.

- (2) *Schuldbefreiung; Bezugnahmen.* Nach einer Ersetzung gemäß diesem § 10 gilt die

in which the Substitute Debtor is domiciled (other than taxes which would also be levied in the absence of such substitution);

- (c) none of the issuer call rights specified in § 5 occurs as a consequence of the substitution of the Issuer by the Substitute Debtor;
- (d) the Issuer irrevocably and unconditionally guarantees in favour of each Holder the payment of all sums payable by the Substitute Debtor in respect of the Notes (the "**Substitution Guarantee**");
- (e) the Substitute Debtor undertakes to reimburse any Holder for such taxes, fees or duties which may be imposed upon such Holder in relation to the Substitution of Issuer in accordance with this § 10, provided that such undertaking shall be limited to amounts that would not have been imposed upon the Holder had such Substitution of Issuer not occurred; and
- (f) there shall have been delivered to the Principal Paying Agent one opinion for each jurisdiction affected of lawyers of recognized standing to the effect that subparagraphs (a) through (e) above have been satisfied.

For purposes of this § 10, "**Financing Affiliate**" shall mean any affiliated company (*verbundenes Unternehmen*) within the meaning of § 15 German Stock Corporation Act (*Aktiengesetz*) of the Issuer, which has the corporate function of raising financing and passing it on to affiliates and which holds no significant operating assets or has any ownership in the operating companies of the Issuer or its Subsidiaries.

- (2) *Discharge from Obligations; References.* Upon a substitution in accordance with this § 10, the

Nachfolgeschuldnerin als in den Schuldverschreibungen an Stelle der Emittentin als Hauptschuldnerin bestimmt und die Schuldverschreibungen gelten als dementsprechend ergänzt, um der Ersetzung zur Durchsetzung zu verhelfen, und als das relevante Steuerhoheitsgebiet in Bezug auf § 8, ein Quellensteuer-Ereignis und ein Steuerereignis gilt sowohl die Jurisdiktion, in der die Nachfolgeschuldnerin steuerlich ansässig ist, als auch die Bundesrepublik Deutschland.

§ 3(1) gilt als insoweit angepasst, dass der Rang der Ansprüche aus den Schuldverschreibungen gleich bleibt.

Zudem beziehen sich die Bezugnahmen auf die Emittentin in § 4(8)(c)(i) und § 4(8)(c)(ii), in der Definition von Ratingagenturereignis und Akquisitionereignis weiterhin nur auf die Merck KGaA.

Die Bezugnahmen auf die Emittentin in § 4(8)(b)(iii), § 4(8)(c)(iv), § 4(8)(c)(v) und § 5(5) beziehen sich sowohl auf die Nachfolgeschuldnerin als auch auf die Merck KGaA.

Jede Ersetzung zusammen mit der Mitteilung gemäß Absatz (3) dieser Bestimmung befreit, im Fall der Einsetzung einer anderen Gesellschaft als Hauptschuldnerin, die Emittentin von allen Verbindlichkeiten, die sie als Hauptschuldnerin (nicht jedoch, zur Klarstellung, in Bezug auf die Ersetzungs-Garantie) unter den Schuldverschreibungen hatte.

- (3) *Benachrichtigung der Gläubiger.* Spätestens 15 Geschäftstage nach Durchführung der Ersetzung wird die Nachfolgeschuldnerin dies den Gläubigern und, sollten die Schuldverschreibungen an einer Börse notiert sein, dieser Börse gemäß § 13 mitteilen und jede andere Person oder Stelle, gemäß den anwendbaren Gesetzen und Regelungen informieren.

Substitute Debtor shall be deemed to be named in the Notes as the principal debtor in place of the Issuer as issuer and the Notes shall thereupon be deemed to be amended to give effect to the substitution including that the relevant Taxing Jurisdiction in relation to the Issuer in § 8, a Gross-up Event and Tax Event shall be the Substitute Debtor's country of domicile for tax purposes as well as the Federal Republic of Germany.

§ 3(1) is deemed to be amended insofar that the ranking of the Notes stays the same.

In addition, the references to the Issuer in § 4(8)(c)(i) and § 4(8)(c)(ii), in the definition of Rating Agency Event and Acquisition Event shall continue to refer only to Merck KGaA.

The references to the Issuer in § 4(8)(b)(iii), § 4(8)(c)(iv), § 4(8)(c)(v) and § 5(5) shall refer to the Substitute Debtor and Merck KGaA.

Any such substitution, together with the notice referred to in subparagraph (3) below, shall, in the case of the substitution of any other company as principal debtor, release the Issuer as issuer from all of its obligations as principal debtor (but not, for the avoidance of doubt, in relation to the Substitution Guarantee) in respect of the Notes.

- (3) *Notification to Holders.* Not later than 15 Business Days after effecting the substitution, the Substitute Debtor shall give notice thereof to the Holders and, if any Notes are listed on any stock exchange, to such stock exchange in accordance with § 13 and to any other person or authority as required by applicable laws or regulations.

§ 11

BESCHLÜSSE DER GLÄUBIGER, ÄNDERUNG DER ANLEIHEBEDINGUNGEN, GEMEINSAMER VERTRETER

- (1) *Beschlüsse durch die Gläubiger.* Die Emittentin kann mit den Gläubigern Änderungen der Anleihebedingungen oder sonstige Maßnahmen durch Mehrheitsbeschluss der Gläubiger nach Maßgabe der §§ 5 ff. des Gesetzes über Schuldverschreibungen aus Gesamtemissionen ("**SchVG**") in seiner jeweils geltenden Fassung beschließen.

Eine Änderung der Anleihebedingungen ohne Zustimmung der Emittentin scheidet aus. Die Gläubiger können insbesondere einer Änderung wesentlicher Inhalte der Anleihebedingungen, einschließlich der in § 5 Absatz 3 SchVG vorgesehenen Maßnahmen durch Beschlüsse mit den in dem nachstehenden § 11(2) genannten Mehrheiten zustimmen. Ein ordnungsgemäß gefasster Mehrheitsbeschluss ist für alle Gläubiger gleichermaßen verbindlich.

- (2) *Mehrheit.* Vorbehaltlich des nachstehenden Satzes und der Erreichung der erforderlichen Beschlussfähigkeit, beschließen die Gläubiger mit der einfachen Mehrheit der an der Abstimmung teilnehmenden Stimmrechte. Beschlüsse, durch welche der wesentliche Inhalt der Anleihebedingungen, insbesondere in den Fällen des § 5 Absatz 3 Nr. 1 bis 9 SchVG, geändert wird oder sonstige wesentliche Maßnahmen beschlossen werden, bedürfen zu ihrer Wirksamkeit einer Mehrheit von mindestens 75 % der an der Abstimmung teilnehmenden Stimmrechte (eine "**Qualifizierte Mehrheit**").
- (3) *Beschlussfassung, Gläubigerversammlung.* Die Gläubiger können Beschlüsse in einer Gläubigerversammlung gemäß §§ 5 ff. SchVG oder im Wege einer Abstimmung ohne Versammlung gemäß § 18 und §§ 5 ff. SchVG fassen.
- (a) Die Teilnahme an der Gläubigerversammlung und die Ausübung der Stimmrechte sind von

§ 11

RESOLUTIONS OF HOLDERS, AMENDMENT OF THE TERMS AND CONDITIONS, HOLDERS' REPRESENTATIVE

- (1) *Resolutions of Holders.* The Issuer may agree with the Holders on amendments to the Terms and Conditions or on other matters by virtue of a majority resolution of the Holders pursuant to § 5 et seqq. of the German Act on Issues of Debt Securities (*Gesetz über Schuldverschreibungen aus Gesamtemissionen – "SchVG"*), as amended from time to time.

There will be no amendment of the Terms and Conditions without the Issuer's consent. In particular, the Holders may consent to amendments which materially change the substance of the Terms and Conditions, including such measures as provided for under § 5 paragraph 3 SchVG by resolutions passed by such majority of the votes of the Holders as stated under § 11(2) below. A duly passed majority resolution shall be binding equally upon all Holders.

- (2) *Majority.* Except as provided by the following sentence and provided that the quorum requirements are being met, the Holders may pass resolutions by simple majority of the voting rights participating in the vote. Resolutions which materially change the substance of the Terms and Conditions, in particular in the cases of § 5 paragraph 3 numbers 1 through 9 SchVG, or which relate to material other matters may only be passed by a majority of at least 75 % of the voting rights participating in the vote (a "**Qualified Majority**").
- (3) *Passing of resolution, Meeting.* The Holders can pass resolutions in a meeting (*Gläubigerversammlung*) in accordance with § 5 et seqq. SchVG or by means of a vote without a meeting (*Abstimmung ohne Versammlung*) in accordance with § 18 and § 5 et seqq. SchVG.
- (a) Attendance at the meeting and exercise of voting rights is subject to the Holders' registration. The registration must be

einer vorherigen Anmeldung der Gläubiger abhängig. Die Anmeldung muss unter der in der Bekanntmachung der Einberufung mitgeteilten Adresse spätestens an dem dritten Tag vor der Gläubigerversammlung zugehen. Mit der Anmeldung müssen die Gläubiger ihre Berechtigung zur Teilnahme an der Abstimmung durch einen in Textform erstellten besonderen Nachweis der Depotbank und durch Vorlage eines Sperrvermerks der Depotbank, aus dem hervorgeht, dass die betreffenden Schuldverschreibungen ab dem Tag der Absendung der Anmeldung (einschließlich) bis zum angegebenen Ende der Gläubigerversammlung (einschließlich) nicht übertragbar sind, nachweisen.

- (b) Zusammen mit der Stimmabgabe müssen die Gläubiger ihre Berechtigung zur Teilnahme an der Abstimmung ohne Versammlung durch einen in Textform erstellten besonderen Nachweis der Depotbank und durch Vorlage eines Sperrvermerks der Depotbank, aus dem hervorgeht, dass die betreffenden Schuldverschreibungen ab dem Tag der Stimmabgabe (einschließlich) bis zum letzten Tag des Abstimmungszeitraums (einschließlich) nicht übertragbar sind, nachweisen.

- (4) *Zweite Versammlung.* Wird für die Gläubigerversammlung gemäß § 11(3)(a) oder die Abstimmung ohne Versammlung gemäß § 11(3)(b) die mangelnde Beschlussfähigkeit festgestellt, kann – im Falle der Gläubigerversammlung – der Vorsitzende eine zweite Versammlung im Sinne von § 15 Absatz 3 Satz 2 SchVG und – im Falle der Abstimmung ohne Versammlung – der Abstimmungsleiter eine zweite Versammlung im Sinne von § 18 Absatz 4 S. 2 und § 15 Absatz 3 Satz 3 SchVG einberufen. Die Teilnahme an der zweiten Versammlung und die Ausübung der Stimmrechte sind von einer vorherigen Anmeldung der Gläubiger abhängig. Für die Anmeldung der Gläubiger zu einer

received at the address stated in the convening notice no later than the third day preceding the meeting. As part of the registration, Holders must provide evidence of their eligibility to participate in the vote by means of a special confirmation of the Custodian in text form and by submission of a blocking instruction by the Custodian stating that the relevant Notes are not transferable from and including the day such registration has been sent until and including the stated end of the meeting.

- (b) Together with casting their vote, Holders must provide evidence of their eligibility to participate in the vote without a meeting by means of a special confirmation of the Custodian in text form and by submission of a blocking instruction by the Custodian stating that the relevant Notes are not transferable from and including the day such vote has been cast until and including the day the voting period ends.

- (4) *Second Meeting.* If it is ascertained that no quorum exists for the meeting pursuant to § 11(3)(a) or the vote without a meeting pursuant to § 11(3)(b), in case of a meeting the chairman (*Vorsitzender*) may convene a second meeting in accordance with § 15 paragraph 3 sentence 2 SchVG or in case of a vote without a meeting the scrutineer (*Abstimmungsleiter*) may convene a second meeting within the meaning of § 18 paragraph 4 sentence 2 and § 15 paragraph 3 sentence 3 SchVG. Attendance at the second meeting and exercise of voting rights is subject to the Holders' registration. The provisions set out in § 11(3)(a) shall apply mutatis mutandis to Holders' registration for a second meeting

zweiten Versammlung gelten die Bestimmungen des § 11(3)(a) entsprechend.

- (5) *Gemeinsamer Vertreter.* Die Gläubiger können durch Mehrheitsbeschluss die Bestellung oder Abberufung eines gemeinsamen Vertreters (der "**Gemeinsame Vertreter**"), die Aufgaben und Befugnisse des Gemeinsamen Vertreters, die Übertragung von Rechten der Gläubiger auf den Gemeinsamen Vertreter und eine Beschränkung der Haftung des Gemeinsamen Vertreters bestimmen. Die Bestellung eines Gemeinsamen Vertreters bedarf einer Qualifizierten Mehrheit, wenn er ermächtigt werden soll, Änderungen des wesentlichen Inhalts der Anleihebedingungen oder sonstigen wesentlichen Maßnahmen gemäß § 11(2) zuzustimmen.
- (6) *Bekanntmachungen.* Bekanntmachungen betreffend diesen § 11 erfolgen ausschließlich gemäß den Bestimmungen des SchVG.
- (7) *Ersetzungs-Garantie.* Im Fall einer Schuldnerersetzung gemäß § 10 gilt dieser § 11 entsprechend für die Änderung der Ersetzungs-Garantie gemäß § 10(1)(c), und Änderungen der Anleihebedingungen und die Ersetzungs-Garantie sind nur mit Zustimmung der Nachfolgeschuldnerin und der Merck KGaA als Garantin zulässig.

§ 12

BEGEBUNG WEITERER SCHULDVERSCHREIBUNGEN, ENTWERTUNG

- (1) *Begebung weiterer Schuldverschreibungen.* Die Emittentin ist berechtigt, jederzeit ohne Zustimmung der Gläubiger weitere Schuldverschreibungen mit gleicher Ausstattung (gegebenenfalls mit Ausnahme des Tags der Begebung, des Beginns des Zinslaufs und/oder des Ausgabepreises) in der Weise zu begeben, dass sie mit diesen Schuldverschreibungen eine einheitliche Serie (Gesamtemission) bilden.
- (2) *Entwertung.* Sämtliche vollständig zurückgezahlten Schuldverschreibungen sind unverzüglich zu entwerten und können nicht wiedergeben oder wiederverkauft werden.

- (5) *Holders' Representative.* The Holders may by majority resolution provide for the appointment or dismissal of a holders' representative (the "**Holders' Representative**"), the duties and responsibilities and the powers of such Holders' Representative, the transfer of the rights of the Holders to the Holders' Representative and a limitation of liability of the Holders' Representative. Appointment of a Holders' Representative may only be passed by a Qualified Majority if such Holders' Representative is to be authorized to consent, in accordance with § 11(2) hereof, to a material change in the substance of the Terms and Conditions or other material matters.

- (6) *Notices.* Any notices concerning this § 11 shall be made exclusively pursuant to the provisions of the SchVG.

- (7) *Substitution Guarantee.* In the event of a substitution pursuant to § 10, this § 11 shall apply *mutatis mutandis* for an amendment of the Substitution Guarantee pursuant to § 10(1)(c), and the Terms and Conditions and such Substitution Guarantee may only be amended with the consent of the Substitute Debtor and Merck KGaA as guarantor.

§ 12

FURTHER ISSUES, CANCELLATION

- (1) *Further Issues.* The Issuer may from time to time, without the consent of the Holders, issue further Notes having the same terms and conditions as the Notes in all respects (or in all respects except for the issue date, commencement of the interest accrual period and/or issue price) so as to form a single series (*Gesamtemission*) with the Notes.
- (2) *Cancellation.* All Notes redeemed in full shall be cancelled forthwith and may not be reissued or resold.

§ 13
MITTEILUNGEN

- (1) *Bekanntmachung.* Alle die Schuldverschreibungen betreffenden Mitteilungen, außer wie in § 11(8) vorgesehen, sind auf der Internetseite der Luxemburger Börse (www.bourse.lu) elektronisch zu veröffentlichen. Jede derartige Mitteilung gilt mit dem dritten Tag nach dem Tag der Veröffentlichung (oder bei mehrfacher Veröffentlichungen mit dem dritten Tag nach dem Tag der ersten solchen Veröffentlichung) als wirksam erfolgt.
- (2) *Mitteilungen an das Clearingsystem.* Solange Schuldverschreibungen an der Luxemburger Börse notiert sind, sind alle die Schuldverschreibungen betreffenden Mitteilungen gemäß Absatz (1) bekanntzumachen. Soweit die Mitteilung den Zinssatz betrifft, oder die Regeln der Luxemburger Börse dies sonst zulassen, kann die Emittentin eine Veröffentlichung nach Absatz (1) durch eine Mitteilung an das Clearingsystem zur Weiterleitung an die Gläubiger ersetzen; jede derartige Mitteilung gilt am siebten Tag nach dem Tag der Mitteilung an das Clearingsystem als den Gläubigern mitgeteilt.

§ 14
**ANWENDBARES RECHT, GERICHTSSTAND
UND GERICHTLICHE GELTENDMACHUNG**

- (1) Anwendbares Recht. Form und Inhalt der Schuldverschreibungen sowie die Rechte und Pflichten der Gläubiger und der Emittentin bestimmen sich in jeder Hinsicht nach deutschem Recht.
- (2) Gerichtsstand. Nicht ausschließlich zuständig für sämtliche im Zusammenhang mit den Schuldverschreibungen entstehenden Klagen oder sonstige Verfahren ("**Rechtsstreitigkeiten**") ist das Landgericht Frankfurt am Main.

Für Entscheidungen gemäß §§ 9 Absatz 2, 13 Absatz 3 und 18 Absatz 2 SchVG und für Entscheidungen über die Anfechtung von Beschlüssen der Gläubiger gemäß § 20 SchVG

§ 13
NOTICES

- (1) *Publication.* All notices concerning the Notes, except as stipulated in § 11(8), will be made by means of electronic publication on the internet website of the Luxembourg Stock Exchange (www.bourse.lu). Any notice will be deemed to have been validly given on the third day following the date of such publication (or, if published more than once, on the third day following the date of the first such publication).
- (2) *Notification to Clearing System.* So long as any Notes are listed on the Luxembourg Stock Exchange, subparagraph (1) shall apply. In the case of notices regarding the rate of interest or, if the rules of the Luxembourg Stock Exchange otherwise so permit, the Issuer may deliver the relevant notice to the Clearing System for communication by the Clearing System to the Holders, in lieu of publication as set forth in subparagraph (1) above; any such notice shall be deemed to have been given on the seventh day after the day on which the said notice was given to the Clearing System.

§ 14
**APPLICABLE LAW, PLACE OF
JURISDICTION AND ENFORCEMENT**

- (1) *Applicable Law.* The Notes, as to form and content, and all rights and obligations of the Holders and the Issuer, shall be governed by German law.
- (2) *Submission to Jurisdiction.* The District Court (Landgericht) in Frankfurt am Main shall have non-exclusive jurisdiction for any action or other legal proceedings ("**Proceedings**") arising out of or in connection with the Notes.

The relevant court specified in the SchVG shall have jurisdiction for all judgments pursuant to §§ 9(2), 13(3) and 18(2) SchVG and for all

ist jeweils das gemäß SchVG genannte Gericht zuständig.

- (3) *Gerichtliche Geltendmachung.* Jeder Gläubiger von Schuldverschreibungen ist berechtigt, in jedem Rechtsstreit gegen die Emittentin oder in jedem Rechtsstreit, in dem der Gläubiger und die Emittentin Partei sind, seine Rechte aus diesen Schuldverschreibungen im eigenen Namen auf der folgenden Grundlage zu schützen und geltend zu machen: (i) er bringt eine Bescheinigung der Depotbank bei, bei der er für die Schuldverschreibungen ein Wertpapierdepot unterhält, welche (a) den vollständigen Namen und die vollständige Adresse des Gläubigers enthält, (b) den Gesamtnennbetrag der Schuldverschreibungen bezeichnet, die zu dem Datum der Bescheinigung auf dem Wertpapierdepot verbucht sind und (c) bestätigt, dass die Depotbank gegenüber dem Clearingsystem eine schriftliche Erklärung abgegeben hat, die die vorstehend unter (a) und (b) bezeichneten Informationen enthält und von dem Clearingsystem bestätigt wurde; (ii) er legt eine Kopie der die betreffenden Schuldverschreibungen verbriefenden Globalurkunde vor, deren Übereinstimmung mit dem Original eine vertretungsberechtigte Person des Clearingsystems oder des Verwahrers des Clearingsystems bestätigt hat, ohne dass eine Vorlage der Originalbelege oder der die Schuldverschreibungen verbriefenden Globalurkunde in einem solchen Verfahren erforderlich wäre oder (iii) auf jede andere Weise, die im Lande der Geltendmachung prozessual zulässig ist. "**Depotbank**" bezeichnet jede Bank oder ein sonstiges anerkanntes Finanzinstitut, das berechtigt ist, das Wertpapierverwahrungsgeschäft zu betreiben und bei der/dem der Gläubiger ein Wertpapierdepot für die Schuldverschreibungen unterhält und die/das ein Konto beim Clearingsystem unterhält, einschließlich des Clearingsystems.

§ 15 SPRACHE

Diese Anleihebedingungen sind in deutscher Sprache abgefasst. Eine Übersetzung in die englische Sprache

judgments over contested resolutions by Holders in accordance with § 20 SchVG.

- (3) *Enforcement.* Any Holder of Notes may in any proceedings against the Issuer, or to which such Holder and the Issuer are parties, protect and enforce in his own name his rights arising under such Notes on the basis of (i) a statement issued by the Custodian with whom such Holder maintains a securities account in respect of the Notes (a) stating the full name and address of the Holder, (b) specifying the aggregate principal amount of Notes credited to such securities account on the date of such statement and (c) confirming that the Custodian has given written notice to the Clearing System containing the information pursuant to (a) and (b) which has been confirmed by the Clearing System; (ii) a copy of the Note in global form certified as being a true copy by a duly authorized officer of the Clearing System or a depository of the Clearing System, without the need for production in such proceedings of the actual records or the global note representing the Notes or (iii) any other means of proof permitted in legal proceedings in the country of enforcement. "**Custodian**" means any bank or other financial institution of recognized standing authorized to engage in securities custody business with which the Holder maintains a securities account in respect of the Notes and which maintains an account with the Clearing System, and includes the Clearing System.

§ 15 LANGUAGE

These Terms and Conditions are written in the German language and provided with an English language

ist beigelegt. Der deutsche Text ist bindend und maßgeblich. Die Übersetzung in die englische Sprache ist unverbindlich.

Die folgenden Absätze in Kursivschrift sind nicht Bestandteil der Anleihebedingungen.

Beschränkungen bezüglich der Rückzahlung und des Rückkaufs der Schuldverschreibungen

Die Emittentin beabsichtigt (ohne dadurch eine Rechtspflicht zu übernehmen) die Schuldverschreibungen nur zurückzuzahlen oder zurückzukaufen, soweit sie durch Instrumente mit zumindest gleichwertiger S&P Eigenkapitalanrechnung ersetzt werden. Als Ersatz gelten die Nettoerlöse, die die Emittentin oder eine Tochtergesellschaft der Emittentin aus dem Verkauf an Dritte von Wertpapieren erhält, die eine S&P Eigenkapitalanrechnung (oder eine vergleichbare Bezeichnung durch S&P) haben, die mindestens so hoch ist wie die Eigenkapitalanrechnung der Schuldverschreibungen, die diesen auf Basis der Anfänglichen Eigenkapitalanrechnungskategorie zugewiesen wurde (wobei Änderungen der Hybrid Rating Methodologie oder deren Auslegung seit dem Ausgabetermin der Schuldverschreibungen berücksichtigt werden).

Es gelten jedoch folgende Ausnahmen in Bezug auf die Absicht der Emittentin. Es muss nicht für Ersatz gesorgt werden:

- (i) wenn das der Emittentin durch S&P erteilte Rating mindestens "A" (oder eine vergleichbare Bezeichnung durch S&P) beträgt und die Emittentin zuversichtlich ist, dass ein solches Rating infolge der Rückzahlung oder des Rückkaufs nicht unter diesen Wert fallen würde oder*
- (ii) im Fall eines Rückkaufs von Schuldverschreibungen in Höhe von weniger als (x) 10 % des ursprünglich ausgegebenen Gesamtnennbetrags der Schuldverschreibungen während einer Frist von 12 aufeinander folgenden Monaten oder (y) 25 % des ursprünglich ausgegebenen Gesamtnennbetrags der Schuldverschreibungen während einer Frist von 10 aufeinander folgenden Jahren oder*

translation. The German text shall be controlling and binding. The English language translation is provided for convenience only.

The following paragraph in italics does not form part of the Terms and Conditions.

Restrictions regarding redemption and repurchase of the Notes

The Issuer intends (without thereby assuming a legal or contractual obligation) that it will redeem or repurchase the Notes only to the extent they are replaced with instruments with at least equivalent S&P equity credit. The net proceeds received by the Issuer or subsidiary of the Issuer from the sale to third party purchasers of securities which are assigned an S&P equity credit (or such similar nomenclature then used by S&P) that is at least equal to the equity credit assigned to the Notes on the basis of the Initial Category of Equity Credit will count as replacement (but taking into account any changes in hybrid capital methodology or the interpretation thereof since the issue date of the Notes).

The following exceptions apply as to the Issuer's replacement intention. The Notes are not required to be replaced:

- (i) if the rating assigned by S&P to the Issuer is at least "A" (or such similar nomenclature then used by S&P) and the Issuer is comfortable that such rating would not fall below this level as a result of such redemption or repurchase, or*
- (ii) in the case of repurchase of less than (x) 10 % of the aggregate principal amount of the Notes originally issued in any period of 12 consecutive months or (y) 25 % of the aggregate principal amount of the Notes originally issued in any period of 10 consecutive years is repurchased, or*

- (iii) *im Fall der Rückzahlung der Schuldverschreibungen nach Eintritt eines Ratingagenturereignisses, eines Akquisitionsereignisses, eines Steuerereignisses oder eines Quellensteuer-Ereignisses erfolgt oder*
- (iv) *wenn im Falle eines Rückkaufs von Schuldverschreibungen der Gesamtnennbetrag der zurückzukaufenden Schuldverschreibungen kleiner gleich der Betrag ist, um den der Höchstbetrag des Hybridkapitals der Emittentin, für den S&P im betreffenden Zeitpunkt eine Eigenkapitalanrechnung nach Maßgabe ihrer dann geltenden Methodologie zuordnet, überschritten wird.*
- (v) *wenn die Schuldverschreibungen keine "Eigenkapitalanrechnung" (oder eine solche von S&P zum Zeitpunkt der Rückzahlung oder des Rückkaufs dann verwendete gleichartige Klassifikation) aufweisen oder*
- (vi) *wenn die Rückzahlung oder der Rückkauf am oder nach dem Zweiten Step-up Tag erfolgt.*

Verwendete Begriffe, die im vorstehenden Satz nicht definiert wurden, haben dieselbe Bedeutung wie in den Anleihebedingungen.

- (iii) *if the Notes are redeemed following the occurrence of a Rating Agency Event, an Acquisition Event, a Tax Event or a Gross-up Event, or*
- (iv) *in the case of a repurchase of Notes, such repurchase relates to an aggregate principal amount of Notes which is less than or equal to the excess (if any) above the maximum aggregate principal amount of the Issuer's hybrid capital to which S&P then assigns equity content under its prevailing methodology, or*
- (v) *if the Notes are not assigned an "equity credit" (or such similar nomenclature then used by S&P at the time of such redemption or repurchase), or*
- (vi) *if such redemption or repurchase occurs on or after the Second Step-up Date.*

Terms used but not defined in the preceding sentence shall have the meaning set out in the Terms and Conditions.

TERMS AND CONDITIONS OF THE NC10 NOTES

ANLEIHEBEDINGUNGEN

Diese Anleihebedingungen sind in deutscher Sprache abgefasst und mit einer Übersetzung in die englische Sprache versehen. Der deutsche Wortlaut ist allein rechtsverbindlich. Die englische Übersetzung dient nur der Information.

§ 1

DEFINITIONEN UND AUSLEGUNG

Soweit aus dem Zusammenhang nicht etwas anderes hervorgeht, haben die nachfolgenden Begriffe in diesen Anleihebedingungen die folgende Bedeutung:

"**5-Jahres-Swapsatz**" hat die in § 4(2)(d) festgelegte Bedeutung.

"**Akquisitionsereignis**" hat die in § 5(3) festgelegte Bedeutung.

"**Alternativ-Benchmarksatz**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Anfängliche Eigenkapitalanrechnungskategorie**" hat die in § 5(3) festgelegte Bedeutung.

"**Anfängliche Marge**" hat die in § 4(2)(b) festgelegte Bedeutung.

"**Anpassungsspanne**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Anwendbarer Zinssatz**" hat die in § 4(1) festgelegte Bedeutung.

"**Benchmark-Änderungen**" hat die in § 4(2)(g)(v) festgelegte Bedeutung.

"**Benchmark-Ereignis**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Berechnungsstelle**" hat die in § 7(2) festgelegte Bedeutung.

"**CBL**" hat die in § 2(3) festgelegte Bedeutung.

"**Clearingsystem**" hat die in § 2(3) festgelegte Bedeutung.

"**Code**" hat die in § 8(4) festgelegte Bedeutung.

"**Dauerglobalurkunde**" hat die in § 2(2)(a) festgelegte Bedeutung.

"**Depotbank**" hat die in § 14(3) festgelegte Bedeutung.

TERMS AND CONDITIONS

These Terms and Conditions are written in the German language and provided with an English language translation. The German text will be the only legally binding version. The English language translation is provided for convenience only.

§ 1

DEFINITIONS AND INTERPRETATION

Unless the context otherwise requires, the following terms shall have the following meanings in these Terms and Conditions:

"**5 year Swap Rate**" has the meaning specified in § 4(2)(d).

"**Acquisition Event**" has the meaning specified in § 5(3).

"**Alternative Benchmark Rate**" has the meaning specified in § 4(2)(g)(vii).

"**Initial Category of Equity Credit**" has the meaning specified in § 5(3).

"**Initial Margin**" has the meaning specified in § 4(2)(b).

"**Adjustment Spread**" has the meaning specified in § 4(2)(g)(vii).

"**Prevailing Interest Rate**" has the meaning specified in § 4(1).

"**Benchmark Amendments**" has the meaning specified in § 4(2)(g)(v).

"**Benchmark Event**" has the meaning specified in § 4(2)(g)(vii).

"**Calculation Agent**" has the meaning specified in § 7(2).

"**CBL**" has the meaning specified in § 2(3).

"**Clearing System**" has the meaning specified in § 2(3).

"**Code**" has the meaning specified in § 8(4).

"**Permanent Global Note**" has the meaning specified in § 2(2)(a).

"**Custodian**" has the meaning specified in § 14(3).

"**Emittentin**" hat die in § 2(1) festgelegte Bedeutung.

"**Endfälligkeitstag**" hat die in § 5(1) festgelegte Bedeutung.

"**Ersetzungs-Garantie**" hat die in § 10(1)(d) festgelegte Bedeutung.

"**Erste Step-Up Marge**" hat die in § 4(2)(b) festgelegte Bedeutung.

"**Erster Resettag**" hat die in § 4(2)(a) festgelegte Bedeutung.

"**Erster Rückzahlungstag**" hat die in § 5(4) festgelegte Bedeutung.

"**EUR**" hat die in § 2(1) festgelegte Bedeutung.

"**Euroclear**" hat die in § 2(3) festgelegte Bedeutung.

"**Festgelegte Stückelung**" hat die in § 2(1) festgelegte Bedeutung.

"**Feststellungsperiode**" hat die in § 4(6) festgelegte Bedeutung.

"**Feststellungstermin**" hat die in § 4(6) festgelegte Bedeutung.

"**Gemeinsamer Vertreter**" hat die in § 11(5) festgelegte Bedeutung.

"**Geschäftstag**" bezeichnet einen Tag (außer einem Samstag oder Sonntag), an dem das Clearingsystem sowie alle betroffenen Bereiche des Trans-European Automated Real-time Gross Settlement Express Transfer System (TARGET2) betriebsbereit sind, um die betreffenden Zahlungen weiterzuleiten.

"**Gläubiger**" hat die in § 2(4) festgelegte Bedeutung.

"**Gleichrangige Wertpapiere**" hat die in § 3(1) festgelegte Bedeutung.

"**Globalurkunden**" hat die in § 2(2)(a) festgelegte Bedeutung.

"**Hauptzahlstelle**" hat die in § 7(1) festgelegte Bedeutung.

"**ICSDs**" hat jeweils die in § 2(3) festgelegte Bedeutung.

"**International Central Securities Depository**" hat die in § 2(3) festgelegte Bedeutung.

"**Issuer**" has the meaning specified in § 2(1).

"**Maturity Date**" has the meaning specified in § 5(1).

"**Substitution Guarantee**" has the meaning specified in § 10(1)(d).

"**First Step-Up Margin**" has the meaning specified in § 4(2)(b).

"**First Reset Date**" has the meaning specified in § 4(2)(a).

"**First Call Date**" has the meaning specified in § 5(4).

"**EUR**" has the meaning specified in § 2(1).

"**Euroclear**" has the meaning specified in § 2(3).

"**Specified Denomination**" has the meaning specified in § 2(1).

"**Determination Period**" has the meaning specified in § 4(6).

"**Determination Date**" has the meaning specified in § 4(6).

"**Holders' Representative**" has the meaning specified in § 11(5).

"**Business Day**" means a day (other than a Saturday or a Sunday) on which the Clearing System as well as all relevant parts of the Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2) are operational to forward the relevant payments.

"**Holder**" has the meaning specified in § 2(4).

"**Parity Securities**" has the meaning specified in § 3(1).

"**Global Notes**" has the meaning specified in § 2(2)(a).

"**Principal Paying Agent**" has the meaning specified in § 7(1).

"**ICSDs**", respectively, has the meaning specified in § 2(3).

"**International Central Securities Depository**" has the meaning specified in § 2(3).

"**Kontrollwechsel**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Kontrollwechselereignis**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Kontrollwechsel-Mitteilung**" hat die in § 5(7)(a) festgelegte Bedeutung.

"**Kontrollwechsel-Stichtag**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Konzerninterne Zahlungen**" hat die in § 4(8)(c) festgelegte Bedeutung.

"**Moody's**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Nachfolge-Benchmarksatz**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Nachfolgeschuldnerin**" hat die in § 10(1) festgelegte Bedeutung.

"**Neuer Benchmarksatz**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Nominierungsgremium**" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"**Obligatorisches Zahlungsereignis**" hat die in § 4(8)(c) festgelegte Bedeutung.

"**Qualifizierte Mehrheit**" hat die in § 11(2) festgelegte Bedeutung.

"**Quellensteuer-Ereignis**" hat die in § 5(3) festgelegte Bedeutung.

"**Ratingagentur**" hat die in § 5(7)(c) festgelegte Bedeutung.

"**Ratingagenturereignis**" hat die in § 5(3) festgelegte Bedeutung.

"**Rechtsstreitigkeiten**" hat die in § 14(2) festgelegte Bedeutung.

"**Referenzbanken**" hat die in § 4(2)(d) festgelegte Bedeutung.

"**Referenzbankensatz**" hat die in § 4(2)(d) festgelegte Bedeutung.

"**Referenzsatz**" hat die in § 4(2)(d) festgelegte Bedeutung.

"**Relevante Ratingagentur**" hat die in § 5(3) festgelegte Bedeutung.

"**Change of Control**" has the meaning specified in § 5(7)(c).

"**Change of Control Event**" has the meaning specified in § 5(7)(c).

"**Change of Control Notice**" has the meaning specified in § 5(7)(a).

"**Change of Control Effective Date**" has the meaning specified in § 5(7)(c).

"**Intra-Group Payments**" has the meaning specified in § 4(8)(c).

"**Moody's**" has the meaning specified in § 5(7)(c).

"**Successor Benchmark Rate**" has the meaning specified in § 4(2)(g)(vii).

"**Substitute Debtor**" has the meaning specified in § 10(1).

"**New Benchmark Rate**" has the meaning specified in § 4(2)(g)(vii).

"**Relevant Nominating Body**" has the meaning specified in § 4(2)(g)(vii).

"**Compulsory Payment Event**" has the meaning specified in § 4(8)(c).

"**Qualified Majority**" has the meaning specified in § 11(2).

"**Gross-up Event**" has the meaning specified in § 5(3).

"**Rating Agency**" has the meaning specified in § 5(7)(c).

"**Rating Agency Event**" has the meaning specified in § 5(3).

"**Proceedings**" has the meaning specified in § 14(2).

"**Reference Banks**" has the meaning specified in § 4(2)(d).

"**Reference Bank Rate**" has the meaning specified in § 4(2)(d).

"**Reference Rate**" has the meaning specified in § 4(2)(d).

"**Relevant Rating Agency**" has the meaning specified in § 5(3).

"Reset-Bildschirmseite" hat die in § 4(2)(d) festgelegte Bedeutung.

"Resettag" hat die in § 4(2)(d) festgelegte Bedeutung.

"Reset-Zinssatz" hat die in § 4(2)(e) festgelegte Bedeutung.

"Resetzeitraum" hat die in § 4(2)(d) festgelegte Bedeutung.

"Rückzahlungstag" bezeichnet den Tag, an dem die Schuldverschreibungen nach Maßgabe dieser Anleihebedingungen zur Rückzahlung fällig werden.

"Schuldverschreibungen" hat die in § 2(1) festgelegte Bedeutung.

"SchVG" hat die in § 11(1) festgelegte Bedeutung.

"S&P" hat die in § 5(7)(c) festgelegte Bedeutung

"Steuerereignis" hat die in § 5(3) festgelegte Bedeutung.

"Steuerhoheitsgebiet" hat die in § 8 festgelegte Bedeutung.

"Steuern" hat die in § 8 festgelegte Bedeutung.

"Stichtag" hat die in § 4(2)(g)(ix) festgelegte Bedeutung.

"Tochtergesellschaft" hat die in § 3(1) festgelegte Bedeutung.

"Unabhängiger Berater" hat die in § 4(2)(g)(vii) festgelegte Bedeutung.

"Ursprünglicher Benchmarksatz" hat die in § 4(2)(d) festgelegte Bedeutung.

"Verbundenes Finanzierungsunternehmen" hat die in § 10(1) festgelegte Bedeutung.

"Vereinigte Staaten" hat die in § 2(2)(b) festgelegte Bedeutung.

"Vorläufige Globalurkunde" hat die in § 2(2)(a) festgelegte Bedeutung.

"Zinsberechnungszeitraum" hat die in § 4(6) festgelegte Bedeutung.

"Zinsen" hat die in § 4(3) festgelegte Bedeutung.

"Zinsfestsetzungstag" hat die in § 4(2)(d) festgelegte Bedeutung.

"Reset Screen Page" has the meaning specified in § 4(2)(d).

"Reset Date" has the meaning specified in § 4(2)(d).

"Reset Interest Rate" has the meaning specified in § 4(2)(e).

"Reset Period" has the meaning specified in § 4(2)(d).

"Redemption Date" means the day on which the Notes become due for redemption in accordance with these Terms and Conditions.

"Notes" has the meaning specified in § 2(1).

"SchVG" has the meaning specified in § 11(1).

"S&P" has the meaning specified in § 5(7)(c).

"Tax Event" has the meaning specified in § 5(3).

"Taxing Jurisdiction" has the meaning specified in § 8.

"Taxes" has the meaning specified in § 8.

"Effective Date" has the meaning specified in § 4(2)(g)(ix).

"Subsidiary" has the meaning specified in § 3(1).

"Independent Adviser" has the meaning specified in § 4(2)(g)(vii).

"Original Benchmark Rate" has the meaning specified in § 4(2)(d).

"Financing Affiliate" has the meaning specified in § 10(1).

"United States" has the meaning specified in § 2(2)(b).

"Temporary Global Note" has the meaning specified in § 2(2)(a).

"Calculation Period" has the meaning specified in § 4(6).

"Interest" has the meaning specified in § 4(3).

"Interest Determination Date" has the meaning specified in § 4(2)(d).

"Zinslaufbeginn" bezeichnet 25. Juni 2019.

"Zinsrückstände" hat die in § 4(7) festgelegte Bedeutung.

"Zinstagequotient" hat die in § 4(6) festgelegte Bedeutung.

"Zinszahlungstag" hat die in § 4(1) festgelegte Bedeutung.

"Zinszeitraum" hat die in § 4(1) festgelegte Bedeutung.

"Zusätzliche Beträge" hat die in § 8 festgelegte Bedeutung.

"Zweite Step-Up Marge" hat die in § 4(2)(c) festgelegte Bedeutung.

"Zweiter Step-Up Tag" hat die in § 4(2)(b) festgelegte Bedeutung.

§ 2

GESAMTNENNBETRAG, FESTGELEGTE STÜCKELUNG, FORM, CLEARINGSYSTEM

(1) *Gesamtnennbetrag, Form, Festgelegte Stückelung.* Diese Emission von an den Inhaber zahlbaren nachrangigen Schuldverschreibungen (die "**Schuldverschreibungen**") der Merck KGaA, Darmstadt (die "**Emittentin**") wird in Euro ("**EUR**") im Gesamtnennbetrag von EUR 1.000.000.000 in Stückelungen je Schuldverschreibung von EUR 100.000 (die "**Festgelegte Stückelung**") begeben.

(2) *Vorläufige Globalurkunde, Dauerglobalurkunde, Austausch.*

(a) Die Schuldverschreibungen sind anfänglich durch eine vorläufige Globalurkunde (die "**Vorläufige Globalurkunde**") ohne Zinsscheine verbrieft. Die Vorläufige Globalurkunde wird gegen eine Dauerglobalurkunde (die "**Dauerglobalurkunde**"; die Vorläufige Globalurkunde und die Dauerglobalurkunde zusammen die "**Globalurkunden**") ohne Zinsscheine ausgetauscht. Die Globalurkunden tragen jeweils die Unterschriften

"**Interest Commencement Date**" means June 25, 2019.

"**Deferred Interest Payments**" has the meaning specified in § 4(7).

"**Day Count Fraction**" has the meaning specified in § 4(6).

"**Interest Payment Date**" has the meaning specified in § 4(1).

"**Interest Period**" has the meaning specified in § 4(1).

"**Additional Amounts**" has the meaning specified in § 8.

"**Second Step-Up Margin**" has the meaning specified in § 4(2)(c).

"**Second Step-Up Date**" has the meaning specified in § 4(2)(b).

§ 2

AGGREGATE PRINCIPAL AMOUNT, SPECIFIED DENOMINATION, FORM, CLEARING SYSTEM

(1) *Aggregate Principal Amount, Form, Specified Denomination.* This issue of subordinated notes payable to the bearer (the "**Notes**") of Merck KGaA, Darmstadt (the "**Issuer**") is being issued in euro ("**EUR**") in the aggregate principal amount of EUR 1,000,000,000 in a denomination of EUR 100,000 each (the "**Specified Denomination**").

(2) *Temporary Global Note, Permanent Global Note, Exchange.*

(a) The Notes are initially represented by one temporary global note (the "**Temporary Global Note**") without interest coupons. The Temporary Global Note shall be exchangeable for a permanent global note (the "**Permanent Global Note**"; the Permanent Global Note and the Temporary Global Note together the "**Global Notes**") without interest coupons. The Global Notes shall each be signed by authorised signatories of the Issuer and shall each be

ordnungsgemäß bevollmächtigter Vertreter der Emittentin und sind jeweils von der Hauptzahlstelle oder in deren Namen mit einer Kontrollunterschrift versehen. Einzelkunden und Zinsscheine werden nicht ausgegeben.

- (b) Die Vorläufige Globalurkunde wird frühestens an einem Tag gegen die Dauerglobalurkunde austauschbar, der 40 Tage nach dem Ausgabetag der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen liegt. Ein solcher Austausch darf nur nach Vorlage von Bescheinigungen gemäß U.S. Steuerrecht erfolgen, wonach der oder die wirtschaftlichen Eigentümer der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen keine U.S. Personen sind (ausgenommen bestimmte Finanzinstitute oder bestimmte Personen, die Schuldverschreibungen über solche Finanzinstitute halten). Falls Zinsen oder Zinsrückstände auf durch eine Vorläufige Globalurkunde verbrieft Schuldverschreibungen bevorstehen, erfolgen sie erst nach Vorlage solcher Bescheinigungen. Eine gesonderte Bescheinigung ist für jede solche Zahlung von Zinsen oder Zinsrückständen erforderlich. Jede Bescheinigung, die am oder nach dem 40. Tag nach dem Ausgabetag der durch die Vorläufige Globalurkunde verbrieften Schuldverschreibungen eingeht, wird als ein Ersuchen behandelt werden, diese Vorläufige Globalurkunde gemäß diesem Absatz (2)(b) auszutauschen. Schuldverschreibungen, die im Austausch für die Vorläufige Globalurkunde geliefert werden, dürfen nur außerhalb der Vereinigten Staaten (wie unten definiert) geliefert werden.

"Vereinigte Staaten" bezeichnet die Vereinigten Staaten von Amerika (einschließlich deren Bundesstaaten und des District of Columbia) sowie deren Territorien (einschließlich Puerto Ricos,

authenticated by or on behalf of the Principal Paying Agent. Definitive notes and interest coupons shall not be issued.

- (b) The Temporary Global Note shall be exchangeable for the Permanent Global Note from the date falling 40 days after the issue date of the Notes represented by the Temporary Global Note. Such exchange shall only be made upon delivery of certifications to the effect that the beneficial owner or owners of the Notes represented by the Temporary Global Note is not a U.S. person (other than certain financial institutions or certain persons holding Notes through such financial institutions) as required by U.S. tax law. Payment of Interest and Deferred Interest Payments, if any, on Notes represented by a Temporary Global Note will be made only after delivery of such certifications. A separate certification shall be required in respect of each such payment of Interest or Deferred Interest Payments. Any such certification received on or after the 40th day after the issue date of the Notes represented by the Temporary Global Note will be treated as a request to exchange such Temporary Global Note pursuant to this subparagraph (2)(b). Any Notes delivered in exchange for the Temporary Global Note shall be delivered only outside of the United States (as defined below).

"United States" means the United States of America (including the States thereof and the District of Columbia) and its possessions (including Puerto Rico, the U.S. Virgin Islands, Guam, American

der U.S. Virgin Islands, Guam, American Samoa, Wake Island und der Northern Mariana Islands).

Samoa, Wake Island and Northern Mariana Islands).

- (3) *Clearingsystem.* Die Dauerglobalurkunde wird solange von einem oder im Namen eines Clearingsystems verwahrt, bis sämtliche Verbindlichkeiten der Emittentin aus den Schuldverschreibungen erfüllt sind. "**Clearingsystem**" bezeichnet jeweils Folgendes: Clearstream Banking, société anonyme, Luxemburg ("**CBL**") und Euroclear Bank S.A./ N.V. Brüssel, als Betreiberin des Euroclear Systems ("**Euroclear**") sowie jeder Funktionsnachfolger. "**International Central Securities Depository**" oder "**ICSD**" bezeichnet jeweils CBL und Euroclear (zusammen die "**ICSDs**").

Die Schuldverschreibungen werden in Form einer Classical Global Note ausgegeben und von einer gemeinsamen Verwahrstelle im Namen beider ICSDs verwahrt.

- (4) *Gläubiger, Übertragbarkeit.* "**Gläubiger**" bezeichnet jeden Inhaber eines Miteigentumsanteils oder anderen vergleichbaren Rechts an den Schuldverschreibungen, der oder die nach Maßgabe des anwendbaren Rechts und der jeweils geltenden Regelwerke des Clearingsystems übertragen werden können.

§ 3

STATUS DER SCHULDVERSCHREIBUNGEN, AUFRECHNUNGSVERBOT

- (1) *Status der Schuldverschreibungen.* Soweit nachstehend nichts anderes bestimmt ist, begründen die Schuldverschreibungen direkte, nicht besicherte, nachrangige Verbindlichkeiten der Emittentin, die im Fall der Abwicklung, Auflösung oder Liquidation der Emittentin (i) nur den Ansprüchen der persönlich haftenden Gesellschafter und der Kommanditaktionäre aus deren jeweiliger Beteiligung am Eigenkapital der Emittentin im Rang vorgehen, (ii) untereinander und mit jedem Gleichrangigen Wertpapier im Rang gleich stehen und (iii) allen anderen bestehenden und zukünftigen Verbindlichkeiten der Emittentin, ob nachrangig oder nicht nachrangig, im Rang

- (3) *Clearing System.* The Permanent Global Note will be kept in custody by or on behalf of the Clearing System until all obligations of the Issuer under the Notes have been satisfied. "**Clearing System**" means each of the following: Clearstream Banking, société anonyme Luxembourg ("**CBL**") and Euroclear Bank S.A./N.V. Brussels as operator of the Euroclear System ("**Euroclear**") and any successor in such capacity. "**International Central Securities Depository**" or "**ICSD**" means each of CBL and Euroclear (together, the "**ICSDs**").

The Notes are issued in classical global note form and are kept in custody by a common depositary on behalf of both ICSDs.

- (4) *Holder, Transferability.* "**Holder**" means any holder of a proportionate co-ownership or other beneficial interest or right in the Notes, which are transferable in accordance with applicable law and applicable rules of the Clearing System.

§ 3

STATUS OF THE NOTES, PROHIBITION OF SET-OFF

- (1) *Status of the Notes.* Except as otherwise provided below, the obligations of the Issuer under the Notes constitute direct, unsecured and subordinated obligations of the Issuer and, in the event of the winding-up, dissolution or liquidation of the Issuer, rank (i) senior only to the claims of the Issuer's general partners (*persönlich haftende Gesellschafter*) and limited partnership shareholders (*Kommanditaktionäre*) arising out of their respective participation in the equity of the Issuer, (ii) *pari passu* among themselves and *pari passu* with any Parity Securities and, (iii) junior to all other present and future obligations of the Issuer, whether subordinated or

nachgehen, soweit zwingende gesetzliche Vorschriften nichts anderes vorschreiben bzw. die Bedingungen des betreffenden Instruments ausdrücklich etwas anderes vorsehen.

Die Rechte der Gläubiger aus den Schuldverschreibungen gegenüber der Emittentin begründen direkte, nicht besicherte und nachrangige Rechte gegenüber der Emittentin im Sinne von § 39 Absatz 2 Insolvenzordnung, die im Fall der Insolvenz der Emittentin, eines Vergleichs oder eines anderen der Abwendung der Insolvenz der Emittentin dienenden Verfahrens (i) nur den Ansprüchen der persönlich haftenden Gesellschafter und der Kommanditaktionäre aus deren jeweiliger Beteiligung am Eigenkapital der Emittentin im Rang vorgehen, (ii) untereinander und mit jedem Gleichrangigen Wertpapier im Rang gleich stehen und (iii) allen anderen bestehenden und zukünftigen Verbindlichkeiten der Emittentin, ob nachrangig oder nicht nachrangig, im Rang nachgehen, soweit nicht zwingende gesetzliche Vorschriften etwas anderes vorschreiben bzw. die Bedingungen des betreffenden Instruments ausdrücklich etwas anderes vorsehen.

Im Fall (i) der Abwicklung, Auflösung oder Liquidation der Emittentin gehen die Verbindlichkeiten der Emittentin aus den Schuldverschreibungen, und im Fall (ii) der Insolvenz der Emittentin oder eines Vergleichs oder eines anderen der Abwendung der Insolvenz der Emittentin dienenden Verfahrens, gehen die Rechte der Gläubiger gegenüber der Emittentin gemäß § 39 Absatz 2 Insolvenzordnung im Rang den Ansprüchen aller nicht nachrangigen und nachrangigen Gläubiger nach (soweit nicht zwingende gesetzliche Vorschriften etwas anderes vorschreiben bzw. die Bedingungen, denen die betreffenden Ansprüche unterliegen, ausdrücklich etwas anderes vorsehen), so dass Zahlungen auf die Schuldverschreibungen solange nicht erfolgen, wie die Ansprüche dieser nicht nachrangigen und nachrangigen Gläubiger gegen die Emittentin nicht zuvor vollständig erfüllt sind.

unsubordinated, except as otherwise provided by mandatory provisions of law or as expressly provided for by the terms of the relevant instrument.

The rights of the Holders towards the Issuer under the Notes constitute direct, unsecured and subordinated rights in the meaning of section 39 paragraph 2 of the German Insolvency Regulation (*Insolvenzordnung*) and, in the event of the insolvency of the Issuer, composition or other proceedings for the avoidance of insolvency of the Issuer, rank (i) senior only to the claims of the Issuer's general partners (*persönlich haftende Gesellschafter*) and limited partnership shareholders (*Kommanditaktionäre*) arising out of their respective participation in the equity of the Issuer, (ii) pari passu among themselves and pari passu with any Parity Securities and, (iii) junior to all other present and future obligations of the Issuer, whether subordinated or unsubordinated, except as otherwise provided by mandatory provisions of law or as expressly otherwise provided for by the terms of the relevant instrument.

In the case of (i) the winding-up, dissolution or liquidation of the Issuer, the obligations of the Issuer under the Notes, and (ii) the insolvency of the Issuer or composition or other proceedings for the avoidance of insolvency of the Issuer, the rights of the Holders towards the Issuer shall, pursuant to section 39 paragraph 2 of the German Insolvency Regulation (*Insolvenzordnung*), be subordinated to the claims of all unsubordinated and subordinated creditors of the Issuer (except as otherwise provided by mandatory provisions of law or as expressly otherwise provided for by the terms underlying the relevant claims) so that in any such case no amounts shall be payable in respect of the Notes until the claims of such unsubordinated and subordinated creditors of the Issuer shall have first been satisfied in full.

Für die Rechte der Gläubiger aus den Schuldverschreibungen ist diesen keine Sicherheit durch die Emittentin oder durch Dritte gestellt; eine solche Sicherheit wird auch zu keinem Zeitpunkt gestellt werden.

"Gleichrangige Wertpapiere" bezeichnet (i) jedes von der Emittentin begebene Wertpapier oder andere Instrument und gegen sie gerichtete Forderungen, die gleichrangig im Verhältnis zu den Verbindlichkeiten der Emittentin unter den Schuldverschreibungen sind, oder (ii) jedes von einer Tochtergesellschaft begebene Wertpapier oder andere Instrument, das durch die Emittentin garantiert wird oder von einer Patronatserklärung der Emittentin profitiert, bei dem die Verbindlichkeiten der Emittentin aus der maßgeblichen Garantie oder Patronatserklärung gleichrangig im Verhältnis zu den Verbindlichkeiten der Emittentin aus den Schuldverschreibungen sind. Am Ausgabebetrag der Schuldverschreibungen sind Gleichrangige Wertpapiere der Emittentin die nicht besicherten nachrangigen Schuldverschreibungen der Emittentin erstmals kündbar im Jahr 2021, fällig im Jahr 2074, ISIN XS1152338072, und die nicht besicherten nachrangigen Schuldverschreibungen der Emittentin erstmals kündbar im Jahr 2024, fällig im Jahr 2074, ISIN XS1152343668.

"Tochtergesellschaft" bezeichnet jede direkte oder mittelbare mehrheitliche Tochtergesellschaft der Emittentin.

- (2) *Aufrechnungsverbot.* Die Gläubiger sind nicht berechtigt, Forderungen aus den Schuldverschreibungen gegen mögliche Forderungen der Emittentin aufzurechnen. Die Emittentin ist nicht berechtigt, Forderungen gegenüber einem Gläubiger gegen Verpflichtungen aus den Schuldverschreibungen aufzurechnen.
- (3) Unter Beachtung von § 3(1) bleibt es der Emittentin unbenommen, ihre Verbindlichkeiten aus den Schuldverschreibungen auch aus dem sonstigen freien Vermögen zu bedienen.

No security is, or shall at any time be, granted by the Issuer or any other person securing rights of the Holders under the Notes.

"Parity Securities" means (i) any securities or other instruments issued by the Issuer and claims towards the Issuer which are expressed to rank *pari passu* with the Issuer's obligations under the Notes or (ii) securities or other instruments issued by a Subsidiary, where such securities or instruments have the benefit of a guarantee or keep well agreement by the Issuer, and the obligations under such guarantee or keep well agreement rank *pari passu* with the Issuer's obligations under the Notes. On the issue date of the Notes Parity Securities of the Issuer are the unsecured subordinated notes with a first call date in 2021, due in 2074, ISIN XS1152338072, and its unsecured subordinated notes with a first call date in 2024, due in 2074, ISIN XS1152343668.

"Subsidiary" means any directly or indirectly majority-owned subsidiary of the Issuer.

- (2) *Prohibition of Set-off.* No Holder may set-off any claims arising under the Notes against any claims that the Issuer may have against it. The Issuer may not set-off any claims it may have against any Holder against any of its obligations under the Notes.
- (3) Subject to § 3(1), the Issuer may satisfy its obligations under the Notes also from other distributable assets (*sonstiges freies Vermögen*) of the Issuer.

§ 4
ZINSEN, ZINSAUFSCHUB

- (1) *Zinszahlungstage und Zinszeiträume.* Vorbehaltlich der weiteren Bestimmungen dieses § 4 (insbesondere § 4(7)) berechtigen die Schuldverschreibungen die Gläubiger für jeden Zinszeitraum (wie nachstehend definiert) vom Zinslaufbeginn (einschließlich) bis zu dem in § 4(9) vorgesehenen Zeitpunkt zu Zinsen in Höhe des für den jeweiligen Zinszeitraum gemäß § 4(2) anwendbaren Zinssatzes (der "**Anwendbare Zinssatz**") auf die festgelegte Stückelung je Schuldverschreibung. Die Zinsen sind jährlich nachträglich am 25. Juni eines jeden Jahres (jeweils ein "**Zinszahlungstag**") zur Zahlung vorgesehen, erstmals am 25. Juni 2020, und werden gemäß § 4(7) und § 4(8) fällig.

"**Zinszeitraum**" bezeichnet (i) den Zeitraum ab dem Zinslaufbeginn (einschließlich) bis zum ersten Zinszahlungstag (ausschließlich) und (ii) den Zeitraum ab einem Zinszahlungstag (einschließlich) bis zum unmittelbar folgenden Zinszahlungstag (ausschließlich).

- (2) *Anwendbarer Zinssatz.*
- (a) *Anfänglicher Festzinszeitraum.* Für jeden Zinszeitraum, der in den Zeitraum ab dem Zinslaufbeginn (einschließlich) bis zum 25. Juni 2029 (der "**Erste Resettag**") (ausschließlich) fällt, entspricht der Anwendbare Zinssatz 2,875 % per annum.
- (b) *Erster Resetzeitraum.* Für jeden Zinszeitraum, der in den Resetzeitraum ab dem Ersten Resettag (einschließlich) bis zum 25. Juni 2049 (dem "**Zweiten Step-Up Tag**") (ausschließlich) fällt, entspricht der Anwendbare Zinssatz dem Referenzsatz für diesen Resetzeitraum zuzüglich 293,8 Basispunkte per annum (die "**Erste Step-Up Marge**", die der Anfänglichen Marge zuzüglich 25 Basispunkten per annum entspricht).

Die "**Anfängliche Marge**" beträgt 268,8 Basispunkte per annum.

§ 4
INTEREST, INTEREST DEFERRAL

- (1) *Interest Payment Dates and Interest Periods.* Subject to the further provisions of this § 4 (in particular, but not limited to, § 4(7)) the Notes entitle the Holders to Interest for each Interest Period (as defined below) from and including the Interest Commencement Date to the date specified in § 4(9) at the prevailing interest rate according to § 4(2) (the "**Prevailing Interest Rate**") on the Specified Denomination per Note. Such Interest shall be scheduled to be paid annually in arrear on June 25 of each year (each a "**Interest Payment Date**"), commencing on June 25, 2020, and will fall due and payable (*fällig*) in accordance with the conditions set forth in § 4(7) and § 4(8).

"**Interest Period**" means (i) the period from and including the Interest Commencement Date to but excluding the first Interest Payment Date and (ii) the period from and including any Interest Payment Date to but excluding the immediately following Interest Payment Date.

- (2) *Prevailing Interest Rate.*
- (a) *Initial Fixed Rate Period.* For any Interest Period falling in the period from and including the Interest Commencement Date to but excluding June 25, 2029 (the "**First Reset Date**"), the Prevailing Interest Rate shall be equal to a rate of 2.875 % per annum.
- (b) *First Reset Period.* For any Interest Period falling in the Reset Period from and including the First Reset Date to but excluding June 25, 2049 (the "**Second Step-Up Date**"), the Prevailing Interest Rate shall be equal to the Reference Rate for such Reset Period plus 293.8 basis points per annum (the "**First Step-Up Margin**" which represents the Initial Margin plus 25 basis points per annum).

"**Initial Margin**" means 268.8 basis points per annum.

- (c) *Resetzzeiträume nach dem ersten Resetzzeitraum.* Für jeden Zinszeitraum, der in einen Resetzzeitraum fällt, der an oder nach dem Zweiten Step-Up Tag beginnt, entspricht der Anwendbare Zinssatz dem Referenzsatz für den betreffenden Resetzzeitraum zuzüglich der Zweiten Step-Up Marge (wie nachstehend definiert).

"**Zweite Step-Up Marge**" bezeichnet die Anfängliche Marge zuzüglich 100 Basispunkten per annum.

- (d) *Feststellung des Referenzsatzes.*

Die Berechnungsstelle bestimmt vorbehaltlich § 4(2)(g) an jedem Zinsfestsetzungstag den jeweiligen Referenzsatz nach Maßgabe dieses § 4(2)(d).

- (i) "**Referenzsatz**" für einen Resetzzeitraum bezeichnet den 5-Jahres-Swapsatz (der "**5-Jahres-Swapsatz**") wie er am Zinsfestsetzungstag um 11:00 Uhr (Frankfurter Zeit) auf dem Reuters Bildschirm "ICESWAP2" unter der Überschrift "EURIBOR BASIS" und dem Untertitel "11:00 AM Frankfurt time" (auf dem solche Überschriften und Untertitel von Zeit zur Zeit erscheinen) (die "**Reset-Bildschirmseite**") angezeigt wird (der "**Ursprüngliche Benchmarksatz**").

- (ii) Falls der 5-Jahres-Swapsatz an dem Zinsfestsetzungstag nicht auf der Reset-Bildschirmseite erscheint, aber kein Benchmark-Ereignis eingetreten ist, entspricht der "**Referenzsatz**" für den nächsten Resetzzeitraum dem Referenzbankensatz an dem Zinsfestsetzungstag.

Kann der Referenzbankensatz nicht gemäß den nachstehenden Bestimmungen dieses § 4(2)(d)

- (c) *Reset Periods following the first Reset Period.* For any Interest Period falling in any Reset Period commencing on or after the Second Step-Up Date, the Prevailing Interest Rate shall be equal to the Reference Rate for the relevant Reset Period plus the Second Step-Up Margin (as defined below).

"**Second Step-Up Margin**" means the Initial Margin plus 100 basis points per annum.

- (d) *Determination of the Reference Rate.*

The Calculation Agent will, subject to § 4(2)(g), determine the relevant Reset Rate in accordance with this § 4(2)(d) on each Interest Determination Date.

- (i) "**Reference Rate**" for any Reset Period means the 5 year swap rate (the "**5 year Swap Rate**") which appears on the Reuters screen "ICESWAP2" under the heading "EURIBOR BASIS" and the caption "11:00 AM Frankfurt time" (as such headings and captions may appear from time to time) as of 11:00 a.m. (Frankfurt time) (the "**Reset Screen Page**") on the Interest Determination Date (the "**Original Benchmark Rate**").

- (ii) If the 5 year Swap Rate does not appear on the Reset Screen Page on the Interest Determination Date, but no Benchmark Event has occurred, the "**Reference Rate**" for the next Reset Period will be the Reference Bank Rate on the Interest Determination Date.

If the Reference Bank Rate cannot be determined pursuant to the following provisions of this

bestimmt werden, aber ist kein Benchmark-Ereignis eingetreten, entspricht der jeweilige "**Referenzsatz**" dem durch die Berechnungsstelle festgelegten 5-Jahres-Swapsatz, welcher zuletzt auf der Reset-Bildschirmseite verfügbar war.

- (iii) Wenn ein Benchmark-Ereignis eintritt, wird der "**Referenzsatz**" für jeden Resetzeitraum, der an oder nach dem Stichtag (wie in § 4(2)(g)(ix) definiert) beginnt, gemäß § 4(2)(g) bestimmt.

Dabei gilt Folgendes:

"**Referenzbanken**" bezeichnet fünf führende Swap-Händler im Interbankenhandel, die von der Emittentin ausgewählt werden

"**Referenzbankensatz**" bedeutet, dass der Referenzsatz für den nächsten Resettag ein Prozentsatz ist, der auf der Grundlage der jeweiligen von den Referenzbanken um ca. 11:00 Uhr (Frankfurter Zeit) an dem Zinsfestsetzungstag mitgeteilten Mid-Market jährliche Swapsatz-Quotierungen ermittelt wird. Für diesen Zweck bezeichnet "Mid-Market jährlicher Swapsatz" das rechnerische Mittel der Geld- und Briefkurse für den jährlichen Festzinszahlungsstrom (berechnet auf einer 30/360 Tagesberechnungsbasis) einer fixed-for-floating Euro Zinsswap-Transaktion, die eine Laufzeit von fünf Jahren beginnend am Resettag hat, auf einen Betrag lautet, der dem einer repräsentativen einzelnen Transaktion in dem relevanten Markt zur relevanten Zeit mit einem anerkannten Händler mit guter Bonität im Swap Markt entspricht, und deren variabler Zahlungsstrom auf dem 6-Monats EURIBOR Satz beruht (berechnet auf einer Actual/360 Tageberechnungsbasis).

§ 4(2)(d), but no Benchmark Event has occurred, the relevant "**Reference Rate**" shall be equal to the last 5 year Swap Rate available on the Reset Screen Page as determined by the Calculation Agent.

- (iii) If a Benchmark Event occurs, the "**Reference Rate**" for each Reset Period commencing on or after the Effective Date (as defined in § 4(2)(g)(ix)) will be determined in accordance with § 4(2)(g).

Where:

"**Reference Banks**" means five leading swap dealers in the interbank market selected by the Issuer.

"**Reference Bank Rate**" means that the Reference Rate for a Reset Date will be a percentage determined on the basis of the mid-Market Annual Swap Rate quotations provided by the Reference Banks at approximately 11:00 a.m., Frankfurt time, on the Interest Determination Date preceding that Reset Date. For this purpose, the "Mid-Market Annual Swap Rate" means the arithmetic mean of the bid and offered rates for the annual fixed leg, calculated on a 30/360 day count basis, of a fixed-for-floating euro interest rate swap transaction with a term equal to five years commencing on that Reset Date and in an amount that is representative of a single transaction in the relevant market at the relevant time with an acknowledged dealer of good credit in the swap market, where the floating leg, calculated on an Actual/360 day count basis, is equivalent to the six months-EURIBOR.

Die Emittentin wird die Hauptniederlassung jeder Referenzbank bitten, der Berechnungsstelle ihre jährliche Mid-Market Swapsatz-Quotierungen mitzuteilen.

Wenn mindestens drei Quotierungen genannt werden, ist der Referenzsatz das rechnerische Mittel der Quotierungen unter Ausschluss der höchsten Quotierung (oder, für den Fall von gleich hohen Quotierungen, einer der höchsten Quotierungen) und der niedrigsten Quotierung (oder, für den Fall von gleich hohen Quotierungen, einer der niedrigsten Quotierungen).

"Resettag" bezeichnet den Ersten Resettag und danach jeden fünften Jahrestag des jeweils unmittelbar vorangehenden Resettages.

"Resetzeitraum" bezeichnet jeden Zeitraum ab dem Ersten Resettag (einschließlich) bis zum nächstfolgenden Resettag (ausschließlich) und nachfolgend ab jedem Resettag (einschließlich) bis zu dem jeweils nächstfolgenden Resettag (ausschließlich).

"Zinsfestsetzungstag" bezeichnet den zweiten TARGET-Geschäftstag vor dem jeweiligen Resettag.

- (e) Unverzüglich nach Bestimmung des betreffenden Referenzsatzes wird die Berechnungsstelle den Anwendbaren Zinssatz für den betreffenden Resetzeitraum (jeweils ein **"Reset-Zinssatz"**) berechnen.
- (f) Die Berechnungsstelle wird veranlassen, dass der Reset-Zinssatz der Emittentin, der Hauptzahlstelle, und jeder Börse, an der die Schuldverschreibungen zu diesem Zeitpunkt notiert sind und deren Regeln eine Mitteilung an die Börse verlangen, sowie den Gläubigern gemäß § 13 unverzüglich, aber keinesfalls später als am achten auf dessen

The Issuer will request the principal office of each of the Reference Banks to provide to the Calculation Agent a quotation of its Mid-Market Annual Swap Rate.

If at least three quotations are provided, the Reference Rate for that Reset Date will be the arithmetic mean of the quotations, eliminating the highest quotation (or, in the event of equality, one of the highest) and the lowest quotation (or, in the event of equality, one of the lowest).

"Reset Date" means the First Reset Date and thereafter each fifth anniversary of the immediately preceding Reset Date.

"Reset Period" means each period from and including the First Reset Date to but excluding the next following Reset Date and thereafter from and including each Reset Date to but excluding the next following Reset Date.

"Interest Determination Date" means the second TARGET Business Day prior to the relevant Reset Date.

- (e) Promptly after the determination of the relevant Reference Rate, the Calculation Agent shall determine the Prevailing Interest Rate for the relevant Reset Period (each a **"Reset Interest Rate"**).
- (f) The Calculation Agent will cause the Reset Interest Rate to be notified to the Issuer, the Principal Paying Agent and, if required by the rules of any stock exchange on which the Notes are listed from time to time, to such stock exchange, and to the Holders in accordance with § 13 without undue delay, but, in any case, not later than on

Feststellung folgenden Geschäftstag mitgeteilt wird.

(g) *Benchmark-Ereignis.*

Wenn ein Benchmark-Ereignis in Bezug auf den Ursprünglichen Benchmarksatz (oder eine Teilkomponente davon) eintritt, gilt für die Bestimmung des jeweiligen Referenzsatzes und den Reset des Anwendbaren Zinssatzes gemäß diesem § 4(2) Folgendes:

- (i) Wenn ein Benchmark-Ereignis in Bezug auf den Ursprünglichen Benchmarksatz eingetreten ist, wird sich die Emittentin bemühen, sobald wie möglich einen Unabhängigen Berater zu benennen, der einen Neuen Benchmarksatz, die Anpassungsspanne (gemäß § 4(2)(g)(iv)) und etwaige Benchmark-Änderungen (gemäß § 4(2)(g)(v)) festlegt.
- (ii) Wenn vor dem jeweiligen Zinsfestsetzungstag
 - (A) die Emittentin keinen Unabhängigen Berater ernannt; oder
 - (B) der ernannte Unabhängige Berater keinen Neuen Benchmarksatz gemäß diesem § 4(2)(g) festlegt,

dann entspricht der "**Referenzsatz**" für den unmittelbar nachfolgenden Resetzeitraum dem an dem letzten zurückliegenden Zinsfestsetzungstag festgestellten Ursprünglichen Benchmarksatz.

Falls dieser § 4(2)(g)(ii) bereits im Hinblick auf den Ersten Resettag angewendet werden muss, entspricht der "**Referenzsatz**" für den ersten

the eighth Business Day after its determination.

(g) *Benchmark Event.*

If a Benchmark Event occurs in relation to the Original Benchmark Rate (or any component part thereof), the relevant Reference Rate and the reset of the Prevailing Interest Rate in accordance with this § 4(2) will be determined as follows:

- (i) If a Benchmark Event has occurred in relation to the Original Benchmark Rate, then the Issuer shall endeavour to appoint an Independent Adviser as soon as possible, who will determine a New Benchmark Rate, the Adjustment Spread (in accordance with § 4(2)(g)(iv)) and any Benchmark Amendments (in accordance with § 4(2)(g)(v)).
- (ii) If prior to any relevant Interest Determination Date,
 - (A) the Issuer fails to appoint an Independent Adviser; or
 - (B) the Independent Adviser appointed by it fails to determine a New Benchmark Rate in accordance with this § 4(2)(g),

the "**Reference Rate**" applicable to the immediately following Reset Period shall be the Original Benchmark Rate determined on the last preceding Interest Determination Date.

If this § 4(2)(g)(ii) is to be applied in respect of the First Reset Date, the "**Reference Rate**" applicable to the first Reset Period shall be the Original

Resetzeitraum dem Ursprünglichen Benchmarksatz auf der Reset-Bildschirmseite an dem letzten Tag vor dem Zinsfestsetzungstag, an dem dieser Ursprüngliche Benchmarksatz angezeigt wurde.

Falls der Ausweichsatz gemäß diesem § 4(2)(g)(ii) zur Anwendung kommt, wird § 4(2)(g) erneut angewendet, um den Referenzsatz für den nächsten nachfolgenden Resetzeitraum zu bestimmen.

(iii) *Nachfolge-Benchmarksatz oder Alternativ-Benchmarksatz.* Falls der Unabhängige Berater nach billigem Ermessen feststellt,

(A) dass es einen Nachfolge-Benchmarksatz gibt, dann ist dieser Nachfolge-Benchmarksatz anstelle des Ursprünglichen Benchmarksatzes maßgeblich; oder

(B) dass es keinen Nachfolge-Benchmarksatz aber einen Alternativ-Benchmarksatz gibt, dann ist dieser Alternativ-Benchmarksatz an Stelle des Ursprünglichen Benchmarksatzes maßgeblich,

dann entspricht der "**Referenzsatz**" für den unmittelbar nachfolgenden Resetzeitraum und alle folgenden Resetzeiträume vorbehaltlich § 4(2)(g)(viii) dem betreffenden Neuen Benchmarksatz an dem betreffenden Zinsfestsetzungstag zuzüglich der Anpassungsspanne gemäß § 4(2)(g)(iv).

(iv) *Anpassungsspanne.* Die Anpassungsspanne (oder die

Benchmark Rate on the Reset Screen Page on the last day preceding the Interest Determination Date on which such Original Benchmark Rate was displayed.

If the fallback rate determined in accordance with this § 4(2)(g)(ii) is to be applied, § 4(2)(g) will be operated again to determine the Reference Rate applicable to the next subsequent Reset Period.

(iii) *Successor Benchmark Rate or Alternative Benchmark Rate.* If the Independent Adviser determines in its reasonable discretion that:

(A) there is a Successor Benchmark Rate, then such Successor Benchmark Rate shall subsequently be used in place of the Original Benchmark Rate; or

(B) there is no Successor Benchmark Rate but that there is an Alternative Benchmark Rate, then such Alternative Benchmark Rate shall subsequently be used in place of the Original Benchmark Rate,

the "**Reference Rate**" for the immediately following Reset Period and all following Reset Periods, subject to § 4(2)(g)(viii), will be the relevant New Benchmark Rate on the relevant Interest Determination Date plus the Adjustment Spread as provided in § 4(2)(g)(iv).

(iv) *Adjustment Spread.* The Adjustment Spread (or the

Formel oder die Methode zur Bestimmung der Anpassungsspanne) wird auf den Neuen Benchmarksatz angewendet, um den betreffenden Referenzsatz zu bestimmen.

- (v) *Benchmark-Änderungen.* Wenn ein Neuer Benchmarksatz und die entsprechende Anpassungsspanne gemäß diesem § 4(2)(g) festgelegt wird, und wenn der Unabhängige Berater feststellt, dass Änderungen hinsichtlich dieser Anleihebedingungen notwendig sind, um die ordnungsgemäße Anwendung des Neuen Benchmarksatzes und der entsprechenden Anpassungsspanne zu gewährleisten (diese Änderungen, die "**Benchmark-Änderungen**"), dann wird der Unabhängige Berater die Benchmark-Änderungen feststellen und die Emittentin wird diese durch eine Mitteilung gemäß § 4(2)(g)(vi) bekanntmachen.

Diese Benchmark-Änderungen können insbesondere folgende Regelungen in den Anleihebedingungen erfassen:

- (A) den Referenzsatz einschließlich (in Ersetzung von § 4(2)(d)(ii) und (iii)) der "Reset-Bildschirmseite" und/oder die Methode zur Bestimmung des Ausweichsatzes (sog. fallback) für den Referenzsatz einschließlich des Referenzbankensatzes; und/oder

formula or methodology for determining the Adjustment Spread) shall be applied to the New Benchmark Rate to determine the relevant Reference Rate.

- (v) *Benchmark Amendments.* If any relevant New Benchmark Rate and the applicable Adjustment Spread is determined in accordance with this § 4(2)(g), and if the Independent Adviser determines that amendments to these Terms and Conditions are necessary to ensure the proper operation of such New Benchmark Rate and the applicable Adjustment Spread (such amendments, the "**Benchmark Amendments**"), then the Independent Adviser will determine the Benchmark Amendments and the Issuer will give notice thereof in accordance with § 4(2)(g)(vi).

The Benchmark Amendments may comprise in particular the following conditions of these Terms and Conditions:

- (A) the Reference Rate including the "Reset Screen Page" and/or (in replacement of § 4(2)(d)(ii) and (iii)) the method for determining the fallback rate in relation to the Reference Rate, including the Reference Bank Rate; and/or

- (B) die Definitionen der Begriffe "Geschäftstag", "Zinszahlungstag", "Resettag", "Zinsfestsetzungstag", "Zinstagequotient" und/oder "Zinszeitraum"; und/oder
- (C) die Geschäftstagekonvention gemäß § 6(2).

- (vi) *Mitteilungen, etc.* Die Emittentin hat einen Neuen Benchmarksatz, die Anpassungsspanne und etwaige Benchmark-Änderungen gemäß diesem § 4(2)(g) der Hauptzahlstelle und der Berechnungsstelle sowie gemäß § 13 den Gläubigern mitzuteilen, und zwar sobald eine solche Mitteilung (nach Ansicht der Emittentin) nach deren Feststellung praktikabel ist. Eine solche Mitteilung ist unwiderruflich und hat den Stichtag zu benennen.

Der Neue Benchmarksatz, die Anpassungsspanne und etwaige Benchmark-Änderungen, die jeweils in der Mitteilung benannt werden, sind für die Emittentin, die Berechnungsstelle, die Hauptzahlstelle, eventuelle weitere Zahlstellen und die Gläubiger bindend. Die Anleihebedingungen gelten ab dem Stichtag als durch den Neuen Benchmarksatz, die Anpassungsspanne und die etwaigen Benchmark-Änderungen geändert.

Am Tag dieser Mitteilung hat die Emittentin der Hauptzahlstelle eine durch zwei Unterschriftsberechtigte der Emittentin unterzeichnete Bescheinigung zu übergeben, die

- (B) the definitions of the terms "Business Day", "Interest Payment Date", "Reset Date", "Interest Determination Date", "Day Count Fraction" and/or "Interest Period"; and/or
- (C) the business day convention in § 6(2)

- (vi) *Notices, etc.* The Issuer will notify any New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any) determined under this § 4(2)(g) to the Principal Paying Agent and the Calculation Agent and, in accordance with § 13, the Holders as soon as such notification is (in the Issuer's view) practicable following the determination thereof. Such notice shall be irrevocable and shall specify the Effective Date.

The New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any), each as specified in such notice, will be binding on the Issuer, the Calculation Agent, the Principal Paying Agent, any additional paying agents and the Holders. The Terms and Conditions shall be deemed to have been amended by the New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments with effect from the Effective Date.

On the date of such notice, the Issuer shall deliver to the Principal Paying Agent a certificate signed by two authorized signatories of the Issuer:

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| <p>(A)</p> <p>(I) bestätigt, dass ein Benchmark-Ereignis eingetreten ist;</p> <p>(II) den nach Maßgabe der Bestimmungen dieses § 4(2)(g) festgestellten Neuen Benchmarksatz benennt; und</p> <p>(III) die entsprechende Anpassungsspanne und etwaige Benchmark-Änderungen benennt, die jeweils nach Maßgabe der Bestimmungen dieses § 4(2)(g) festgestellt wurden;</p> <p>(IV) den Stichtag benennt; und</p> <p>(B) bestätigt, dass die etwaigen Benchmark-Änderungen notwendig sind, um die ordnungsgemäße Anwendung des Neuen Benchmarksatzes und der entsprechenden Anpassungsspanne zu gewährleisten.</p> <p>(vii) <i>Definitionen.</i> Zur Verwendung in § 4(2)(g):</p> <p>Die "Anpassungsspanne", die positiv, negativ oder gleich Null sein kann, wird in Basispunkten ausgedrückt und bezeichnet entweder (a) die Spanne oder (b) das Ergebnis der Anwendung der Formel oder Methode zur Berechnung der Spanne,</p> | <p>(A)</p> <p>(I) confirming that a Benchmark Event has occurred;</p> <p>(II) specifying the relevant New Benchmark Rate determined in accordance with the provisions of this § 4(2)(g); and</p> <p>(III) specifying the applicable Adjustment Spread and the Benchmark Amendments (if any), each determined in accordance with the provisions of this § 4(2)(g);</p> <p>(IV) specifying the Effective Date; and</p> <p>(B) certifying that the Benchmark Amendments, if any, are necessary to ensure the proper operation of such relevant New Benchmark Rate and the applicable Adjustment Spread.</p> <p>(vii) <i>Definitions.</i> As used in this § 4(2)(g):</p> <p>The "Adjustment Spread", which may be positive, negative or zero, will be expressed in basis points and means either (a) the spread or (b) the result of the operation of the formula or methodology for calculating the spread,</p> |
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- (A) die im Fall eines Nachfolge-Benchmarksatzes formell im Zusammenhang mit der Ersetzung des Ursprünglichen Benchmarksatzes durch den Nachfolge-Benchmarksatz vom Nominierungsgremium empfohlen wird; oder
- (B) die (sofern keine Empfehlung abgegeben wurde oder im Fall eines Alternativ-Benchmarksatzes) an den internationalen Anleihekapitalmärkten (oder, hilfsweise, an den internationalen Swapmärkten) auf den Neuen Benchmarksatz (oder eine Teilkomponente davon) angewendet wird, um einen industrieweit akzeptierten Ersatz-Benchmarksatz für den Ursprünglichen Benchmarksatz zu erzeugen, wobei sämtliche Feststellungen durch den Unabhängigen Berater nach billigem Ermessen vorgenommen werden.

"Alternativ-Benchmarksatz"

bezeichnet eine alternative Benchmark oder einen alternativen Bildschirmsatz, die bzw. der üblicherweise an den internationalen Anleihekapitalmärkten (oder, hilfsweise, an den internationalen Swapmärkten) zur Bestimmung von Zinssätzen bzw. Mid-Swap-Sätzen in Euro angewendet wird, wobei sämtliche Feststellungen

- (A) which in the case of a Successor Benchmark Rate, is formally recommended in relation to the replacement of the Original Benchmark Rate with the Successor Benchmark Rate by any Relevant Nominating Body; or
- (B) which (if no such recommendation has been made, or in the case of an Alternative Benchmark Rate) is applied to the New Benchmark Rate (or any component part thereof) in the international debt capital markets (or, alternatively, the international swap markets) to produce an industry-accepted replacement benchmark rate for the Original Benchmark Rate, provided that all determinations will be made by the Independent Adviser in its reasonable discretion.

"Alternative Benchmark Rate"

means an alternative benchmark or screen rate which is customarily applied in the international debt capital markets (or, alternatively, the international swap markets) for the purpose of determining rates of interest or mid swap rates, respectively in EUR, provided that all determinations will be

durch den Unabhängigen Berater
vorgenommen werden.

"Benchmark-Ereignis"

bezeichnet:

- (A) der Ursprüngliche Benchmarksatz (oder eine Teilkomponente davon) wird nicht mehr regelmäßig veröffentlicht oder wird nicht mehr erstellt; oder
- (B) eine öffentliche Bekanntmachung des Administrators des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) dahingehend, dass dieser die Berechnung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) dauerhaft oder auf unbestimmte Zeit eingestellt hat oder einstellen wird (in Fällen in denen kein Nachfolgeadministrator ernannt worden ist, der die Veröffentlichung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon) vornehmen wird); oder
- (C) eine öffentliche Bekanntmachung der Aufsichtsbehörde des Administrators des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon), dass der Ursprüngliche Benchmarksatz (oder einer Teilkomponente davon) dauerhaft oder auf unbestimmte Zeit nicht

made by the Independent
Adviser.

"Benchmark Event" means:

- (A) the Original Benchmark Rate (or any component part thereof) ceasing to be published on a regular basis or ceasing to exist; or
- (B) a public statement by the administrator of the Original Benchmark Rate (or any component part thereof) that it has ceased or that it will cease publishing the Original Benchmark Rate (or any component part thereof) permanently or indefinitely (in circumstances where no successor administrator has been appointed that will continue the publication of the Original Benchmark Rate (or any component part thereof)); or
- (C) a public statement by the supervisor of the administrator of the Original Benchmark Rate (or any component part thereof), that the Original Benchmark Rate (or any component part thereof) has been or will permanently or indefinitely discontinued; or

mehr fortgeführt wird
oder fortgeführt werden
wird; oder

- (D) eine öffentliche
Bekanntmachung der
Aufsichtsbehörde des
Administrators des
Ursprünglichen
Benchmarksatzes (oder
einer Teilkomponente
davon) infolgedessen der
Ursprüngliche
Benchmarksatz (oder eine
Teilkomponente davon)
allgemein oder in Bezug
auf die
Schuldverschreibungen
nicht mehr verwendet
wird oder verwendet
werden darf; oder
- (E) den Umstand, dass die
Verwendung des
Ursprünglichen
Benchmarksatzes (oder
einer Teilkomponente
davon) zur Berechnung
oder Bestimmung des
Referenzsatzes für die
Zahlstellen, die
Berechnungsstelle, die
Emittentin oder jeden
Dritten rechtswidrig
geworden ist.

"Nachfolge-Benchmarksatz"

bezeichnet einen Nachfolger oder
Ersatz des Ursprünglichen
Benchmarksatzes, der formell
durch das Nominierungsgremium
empfohlen wurde.

"Neuer Benchmarksatz"

bezeichnet den jeweils gemäß
§ 4(2)(g) bestimmten Nachfolge-
Benchmarksatz bzw. Alternativ-
Benchmarksatz.

"Nominierungsgremium"

bezeichnet in Bezug auf die

- (D) a public statement by the
supervisor of the
administrator of the
Original Benchmark Rate
(or any component part
thereof) as a consequence
of which the Original
Benchmark Rate (or any
component part thereof)
has been or will be
prohibited from being
used either generally, or in
respect of the relevant
Notes; or

- (E) it has become unlawful for
any Paying Agent, the
Calculation Agent, the
Issuer or any other party to
calculate or determine any
Reference Rate using the
Original Benchmark Rate
(or any component part
thereof).

"Successor Benchmark Rate"

means a successor to or
replacement of the Original
Benchmark Rate which is
formally recommended by any
Relevant Nominating Body.

"New Benchmark Rate"

means the Successor Benchmark Rate
or, as the case may be, the
Alternative Benchmark Rate
determined in accordance with
§ 4(2)(g).

"Relevant Nominating Body"

means, in respect of the

Ersetzung des Ursprünglichen Benchmarksatzes (oder einer Teilkomponente davon):

- (A) die Zentralbank für die Währung in der die Benchmark oder der Bildschirmsatz dargestellt wird oder eine Zentralbank oder andere Aufsichtsbehörde, die für die Aufsicht des Administrators der Benchmark oder des Bildschirmsatzes zuständig ist; oder
- (B) jede Arbeitsgruppe oder jedes Komitee gefördert durch, geführt oder mitgeführt von oder gebildet von (a) der Zentralbank für die Währung in der die Benchmark oder der Bildschirmsatz dargestellt wird, (b) einer Zentralbank oder anderen Aufsichtsbehörde, die für die Aufsicht des Administrators der Benchmark oder des Bildschirmsatzes zuständig ist, (c) einer Gruppe der zuvor genannten Zentralbanken oder anderer Aufsichtsbehörden oder (d) dem Finanzstabilitätsrat (*Financial Stability Board*) oder Teilen davon.

"Unabhängiger Berater" bezeichnet ein von der Emittentin ernanntes unabhängiges Finanzinstitut mit internationalem Ansehen oder einen anderen unabhängigen Finanzberater mit Erfahrung in internationalen Kapitalmärkten.

replacement of the Original Benchmark Rate (or any component part thereof):

- (A) the central bank for the currency to which the benchmark or screen rate (as applicable) relates, or any central bank or other supervisory authority which is responsible for supervising the administrator of the benchmark or screen rate (as applicable); or
- (B) any working group or committee sponsored by, chaired or co-chaired by or constituted at the request of (a) the central bank for the currency to which the benchmark or screen rate (as applicable) relates, (b) any central bank or other supervisory authority which is responsible for supervising the administrator of the benchmark or screen rate (as applicable), (c) a group of the aforementioned central banks or other supervisory authorities or (d) the Financial Stability Board or any part thereof.

"Independent Adviser" means an independent financial institution of international repute or other independent financial adviser experienced in the international capital markets, in each case appointed by the Issuer.

- (viii) Eine Anpassung des Ursprünglichen Benchmarksatzes im Falle eines Benchmark-Ereignisses darf nur insoweit durchgeführt werden, als dass durch diese Anpassung kein Ratingagenturereignis eintritt.
- (ix) Der Stichtag für die Anwendung des Neuen Benchmarksatzes, der Anpassungsspanne und der etwaigen Benchmark-Änderungen gemäß diesem § 4(2)(g) (der "**Stichtag**") ist der Zinsfestlegungstag, der auf den frühesten der folgenden Tage fällt oder diesem nachfolgt:
- (A) den Tag des Eintritts des Benchmark-Ereignisses, wenn das Benchmark-Ereignis aufgrund des Absatzes (A) der Definition des Begriffs "Benchmark-Ereignis" eingetreten ist; oder
- (B) den Tag, an dem die Veröffentlichung des Ursprünglichen Benchmarksatzes eingestellt wird bzw. an dem der Ursprüngliche Benchmarksatz eingestellt wird, wenn das Benchmark-Ereignis aufgrund der Absätze (B), (C) oder (D) der Definition des Begriffs "Benchmark-Ereignis" eingetreten ist; oder
- (C) den Tag, ab dem der Ursprüngliche Benchmarksatz nicht mehr verwendet werden darf, wenn das Benchmark-Ereignis aufgrund des Absatzes (E) der Definition des
- (viii) Any adjustment to the Original Benchmark Rate in case of a Benchmark Event will be made only to the extent that no Rating Agency Event would occur as a result of such adjustment.
- (ix) The effective date for the application of the New Benchmark Rate, the Adjustment Spread and the Benchmark Amendments (if any) determined under this § 4(2)(g) (the "**Effective Date**") will be Interest Determination Date falling on or after the earliest of the following dates:
- (A) if the Benchmark Event has occurred as a result of clause (A) of the definition of the term "Benchmark Event", the date of the occurrence of the Benchmark Event; or
- (B) if the Benchmark Event has occurred as a result of clause (B), (C) or (D) of the definition of the term "Benchmark Event", the date of cessation of publication of the Original Benchmark Rate or of the discontinuation of the Original Benchmark Rate, as the case may be; or
- (C) if the Benchmark Event has occurred as a result of clause (E) of the definition of the term "Benchmark Event", the date from which the prohibition applies.

Begriffs "Benchmark-Ereignis" eingetreten ist; oder

- (x) Wenn ein Benchmark-Ereignis in Bezug auf einen Neuen Benchmarksatz eintritt, gilt dieser § 4(2)(g) entsprechend für die Ersetzung des Neuen Benchmarksatzes durch einen neuen Nachfolge-Benchmarksatz bzw. Alternativ-Benchmarksatz.
- (x) If a Benchmark Event occurs in relation to any New Benchmark Rate, the § 4(2)(g) shall apply *mutatis mutandis* to the replacement of such New Benchmark Rate by any new Successor Benchmark Rate or Alternative Benchmark Rate, as the case may be.
- (3) *Berechnung der Zinsen.* Die an dem jeweiligen Zinszahlungstag zu zahlenden Zinsen je Schuldverschreibung (die "**Zinsen**") ergeben sich aus der Multiplikation des jeweiligen Anwendbaren Zinssatzes mit der Festgelegten Stückelung je Schuldverschreibung und dem Zinstagequotienten, wobei der daraus resultierende Betrag auf den nächsten Eurocent auf oder abgerundet wird, und 0,5 oder mehr eines Eurocents aufgerundet werden. Zinsen, die für einen Zeitraum von weniger als einem Jahr zu berechnen sind, werden nach Maßgabe des § 4(5) berechnet.
- (3) *Calculation of Interest.* Interest payable per Note on the respective Interest Payment Date (the "**Interest**") shall be calculated by multiplying the Prevailing Interest Rate with the Specified Denomination and the Day Count Fraction and rounding the resulting figure to the nearest eurocent with 0.5 or more of a eurocent being rounded upwards. If Interest is to be calculated for a period of less than one year, it shall be calculated pursuant to § 4(5).
- (4) *Zinsen nach Eintritt eines Kontrollwechselereignisses.* Wenn ein Kontrollwechselereignis (wie in § 5(7) definiert) eintritt und die Emittentin die Schuldverschreibungen nicht insgesamt gemäß § 5(7) zurückzahlt, erhöht sich der für die Berechnung der Zinsen ansonsten anzuwendende Anwendbare Zinssatz ab dem Kontrollwechsel-Stichtag (wie in § 5(7) definiert) um zusätzliche 500 Basispunkte per annum. Für den Fall, dass in dem Zeitraum zwischen dem Eintritt des ersten Kontrollwechsels und dem Tag, an dem die Kontrollwechsel-Mitteilung (wie in § 5(7) definiert) in Bezug auf diesen ersten Kontrollwechsel veröffentlicht wird, mehr als ein Kontrollwechsel eintritt, erhöht sich der für die Berechnung der Zinsen ansonsten anzuwendende Anwendbare Zinssatz jedoch nur einmal.
- (4) *Interest following the occurrence of a Change of Control Event.* If a Change of Control Event (as defined in § 5(7)) occurs and the Issuer does not redeem the Notes in whole in accordance with § 5(7), the rate applicable for calculating the Interest will be subject to an additional 500 basis points per annum above the otherwise applicable Prevailing Interest Rate from the Change of Control Effective Date (as defined in § 5(7)), provided however that, in case more than one Change of Control will have occurred in the period from the occurrence of the first Change of Control to (and including) the day on which the Change of Control Notice (as defined in § 5(7)) with regard to such first Change of Control is published, the otherwise applicable Prevailing Interest Rate will only be increased once.
- (5) *Berechnung der Zinsen für Zeiträume von weniger als einem Jahr.* Sofern Zinsen für einen Zeitraum von weniger als einem vollen Jahr zu
- (5) *Calculation of Interest for Periods of less than one Year.* If Interest is to be calculated for a period of less than a full year, it shall be

berechnen sind, erfolgt die Berechnung auf der Grundlage des Zinstagequotienten (wie nachfolgend definiert). Die Anzahl der Feststellungstermine (wie in § 4(6) definiert) je Kalenderjahr beträgt 1.

(6) *Zinstagequotient.* "**Zinstagequotient**" bezeichnet in Bezug auf die Berechnung von Zinsen auf die Schuldverschreibungen für einen beliebigen Zeitraum (der "**Zinsberechnungszeitraum**"):

- (a) wenn der Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) kürzer ist als die Feststellungsperiode, in die das Ende des Zinsberechnungszeitraumes fällt oder ihr entspricht, die Anzahl der Tage in dem betreffenden Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) geteilt durch das Produkt aus (1) der Anzahl der Tage in der Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr; oder
- (b) wenn der Zinsberechnungszeitraum (einschließlich des ersten aber ausschließlich des letzten Tages dieses Zeitraums) länger ist als die Feststellungsperiode, in die das Ende des Zinsberechnungszeitraumes fällt, die Summe aus (A) der Anzahl der Tage in dem Zinsberechnungszeitraum, die in die Feststellungsperiode fallen, in welcher der Zinsberechnungszeitraum beginnt, geteilt durch das Produkt aus (1) der Anzahl der Tage in dieser Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr und (B) der Anzahl der Tage in dem Zinsberechnungszeitraum, die in die nächste Feststellungsperiode fallen, geteilt durch das Produkt aus (1) der Anzahl der Tage in dieser Feststellungsperiode und (2) der Anzahl der Feststellungstermine in einem Kalenderjahr.

calculated on the basis of the Day Count Fraction (as defined below). The number of Determination Dates (as defined in § 4(6)) per calendar year is 1.

(6) *Day Count Fraction.* "**Day Count Fraction**" means, in respect of the calculation of Interest on any Note for any period of time (the "**Calculation Period**"):

- (a) if the Calculation Period (from and including the first day of such period but excluding the last) is equal to or shorter than the Determination Period during which the Calculation Period ends, the number of days in such Calculation Period (from and including the first day of such period but excluding the last) divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year; or
- (b) if the Calculation Period (from and including the first day of such period but excluding the last) is longer than the Determination Period during which the Calculation Period ends, the sum of: (A) the number of days in such Calculation Period falling in the Determination Period in which the Calculation Period begins divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year and (B) the number of days in such Calculation Period falling in the next Determination Period divided by the product of (1) the number of days in such Determination Period and (2) the number of Determination Dates that would occur in one calendar year.

"**Feststellungsperiode**" ist der Zeitraum ab einem Feststellungstermin (einschließlich) bis zum nächsten Feststellungstermin (ausschließlich).

"**Feststellungstermin**" bezeichnet jeden 25. Juni.

- (7) *Zinsaufschub.* Zinsen sind an dem jeweiligen Zinszahlungstag fällig und zahlbar, sofern sich die Emittentin nicht entscheidet, die Zinsen aufzuschieben. Eine solche Nichtzahlung, die jedoch in Bezug auf die jeweiligen Zinsen nur insgesamt erfolgen kann, begründet keinen Verzug der Emittentin und keine anderweitige Verletzung ihrer Verpflichtungen aufgrund dieser Schuldverschreibungen oder für sonstige Zwecke. Soweit sich die Emittentin entscheidet, an einem Zinszahlungstag die Zinsen nicht zu zahlen, hat sie dies den Gläubigern gemäß § 13 unter Einhaltung einer Frist von mindestens 20 Geschäftstagen vor dem jeweiligen Zinszahlungstag bekannt zu machen.

Die aufgrund einer derartigen Entscheidung der Emittentin nicht gezahlten Zinsen stellen "**Zinsrückstände**" dar. Zinsrückstände werden nicht verzinst.

- (8) *Nachzahlung von Zinsrückständen.*
- (a) Die Emittentin kann ausstehende Zinsrückstände jederzeit (insgesamt, jedoch nicht teilweise) nach Mitteilung gemäß § 13 unter Einhaltung einer Frist von mindestens 10 Geschäftstagen zahlen (wobei eine solche Mitteilung unwiderruflich ist und die Emittentin verpflichtet ist, die jeweiligen Zinsrückstände an dem in dieser Mitteilung genannten Zahlungstag zu zahlen).
- (b) Bei Eintritt des frühesten der nachfolgenden Ereignisse gelten die ausstehenden Zinsrückstände (insgesamt, jedoch nicht teilweise) durch die Emittentin als für fällig und zahlbar erklärt:
- (i) der zehnte Geschäftstag nach Eintritt eines Obligatorischen

"**Determination Period**" means the period from and including a Determination Date to but excluding the next Determination Date.

"**Determination Date**" means each June 25.

- (7) *Interest Deferral.* Interest shall be due and payable on the respective Interest Payment Date unless the Issuer elects to defer such Interest. An election not to pay Interest, which can only be made regarding the whole respective Interest, shall not constitute a default of the Issuer or any other breach of obligations under the Notes or for any other purpose. If the Issuer decides to not pay the Interest on an Interest Payment Date, the Issuer shall notify the Holders in accordance with § 13 not less than 20 Business Days prior to the relevant Interest Payment Date.

Any Interest not paid due to such an election of the Issuer shall constitute "**Deferred Interest Payments**". Deferred Interest Payments shall not bear interest themselves.

- (8) *Payment of Deferred Interest Payments.*
- (a) The Issuer may pay outstanding Deferred Interest Payments (in whole but not in part) at any time upon giving of not less than 10 Business Days' notice in accordance with § 13 (which notice shall be irrevocable and will oblige the Issuer to pay the relevant Deferred Interest Payments on the payment date specified in such notice).
- (b) The Issuer shall be deemed to have declared outstanding Deferred Interest Payments (in whole but not in part) due and payable at the earliest of any of the following events:
- (i) the tenth Business Day following the occurrence of a Compulsory

- | | | | |
|-------|--|-------|--|
| | Zahlungsereignisses (wie nachfolgend definiert); oder | | Payment Event (as defined below); or |
| (ii) | der Tag, an dem die Schuldverschreibungen insgesamt zur Rückzahlung fällig sind; oder | (ii) | the due date for the redemption of the Notes; or |
| (iii) | der Tag, an dem eine freiwillige Auflösung der Emittentin beschlossen wird oder an dem eine Verfügung zur Auflösung, Abwicklung oder Liquidation der Emittentin ergeht (sofern dies nicht für die Zwecke einer Sanierung oder eines Insolvenzplanverfahrens oder als Folge eines Zusammenschlusses oder einer Umstrukturierung geschieht, während die Emittentin noch zahlungsfähig ist und die fortführende Gesellschaft im Wesentlichen alle Vermögenswerte und Verpflichtungen der Emittentin übernimmt). | (iii) | the date on which the voluntary winding-up of the Issuer will be resolved or an order is made for the winding-up, dissolution or liquidation of the Issuer (in each case other than for the purposes of or pursuant to the restructuring or an insolvency plan procedure (<i>Insolvenzplanverfahren</i>) or an amalgamation or reorganisation while solvent, where the continuing entity assumes substantially all of the assets and obligations of the Issuer). |
| (c) | Ein " Obligatorisches Zahlungseignis " gilt bei Eintritt eines der folgenden Ereignisse als eingetreten: | (c) | A " Compulsory Payment Event " shall be deemed to have occurred upon any of the following events: |
| (i) | der Tag, (x) an dem die Jahreshauptversammlung oder eine andere Hauptversammlung der Emittentin für eine Beteiligung der Kommanditaktionäre am Eigenkapital der Emittentin eine Dividende, bzw. eine andere Ausschüttung oder Zahlung beschließt (mit Ausnahme einer Dividende bzw. einer anderen Ausschüttung oder Zahlung, die in Form von Kommanditaktien der Emittentin vorgenommen wird) und/oder (y) der Tag an dem eine Entnahme aufgrund der Beteiligung eines persönlich haftenden Gesellschafters am Eigenkapital der Emittentin zu Gunsten eines persönlich haftenden Gesellschafters | (i) | the date on which (x) the Issuer's annual general meeting or any other general meeting (<i>Hauptversammlung</i>) of the Issuer resolves on a dividend, other distribution or other payment in respect of any participation of the limited partnership shareholders (<i>Kommanditaktionäre</i>) in the equity of the Issuer (other than a dividend, distribution or payment which is made in the form of limited partnership shares (<i>Kommanditaktien</i>) of the Issuer) and/or (y) the date on which any distribution to a general partner (<i>persönlich haftender Gesellschafter</i>) of the Issuer arising out of its participation in |

beschlossen wird oder die Emittentin eine solche Entnahme leistet; oder

- (ii) die Emittentin erwirbt Kommanditaktien der Emittentin zurück oder zahlt einen Kapitalanteil eines persönlich haftenden Gesellschafters zurück oder eine ihrer Tochtergesellschaften kauft ausstehende Kommanditaktien der Emittentin oder Kapitalanteile eines persönlich haftenden Gesellschafters zurück (ausgenommen (x) in Verbindung mit einem Mitarbeiterbeteiligungsprogramm oder einer ähnlichen Maßnahme zu Gunsten von Arbeitnehmern, leitenden Angestellten, Führungskräften oder Beratern, (y) als Ergebnis eines Umtauschs oder einer Wandlung einer Aktiegattung in eine andere oder (z) falls die Emittentin Kapitalanteile eines persönlich haftenden Gesellschafters oder Kommanditaktien der Emittentin als Entgelt für einen Verkauf von Vermögenswerten an Dritte erhält); oder
- (iii) ein Zinszahlungstag, in Bezug auf den die Emittentin entscheidet, die Zahlung vorgesehener Zinsen auf die Schuldverschreibungen vorzunehmen; oder
- (iv) der Tag, an dem die Emittentin oder eine Tochtergesellschaft eine Zahlung oder Ausschüttung auf ein Gleichrangiges Wertpapier vornimmt; oder
- (v) der Tag, an dem die Emittentin oder eine Tochtergesellschaft (jeweils direkt oder indirekt) ein

the equity of the Issuer is declared or made by the Issuer; or

- (ii) the Issuer repurchases any limited partnership shares (*Kommanditaktien*) of the Issuer or any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) or any of its Subsidiaries repurchases or otherwise acquires any of the outstanding limited partnership shares (*Kommanditaktien*) of the Issuer or any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) (other than (x) in connection with any employee benefit plan or similar arrangements with or for the benefit of employees, officers, directors or consultants, (y) as a result of the exchange or conversion of one class of shares for another class, or (z) in the case the Issuer receives any equity interest (*Kapitalanteil*) of a general partner (*persönlich haftender Gesellschafter*) or limited partnership shares (*Kommanditaktien*) of the Issuer as consideration for a sale of assets to third parties); or
- (iii) an Interest Payment Date in relation to which the Issuer elects to pay a scheduled Interest on the Notes; or
- (iv) the date on which the Issuer or any Subsidiary makes any payment or distribution in respect of any Parity Security; or
- (v) the date on which the Issuer or any Subsidiary redeems, repurchases or otherwise

Gleichrangiges Wertpapier oder Schuldverschreibungen zurückzahlt, zurückkauft oder anderweitig erwirbt.

acquires (in each case directly or indirectly) any Parity Security or Notes.

In den vorgenannten Fällen (iv) und (v) tritt kein Obligatorisches Zahlungsereignis ein, wenn

The cases (iv) and (v) above are subject to the provision that no Compulsory Payment Event occurs if

(x) die Emittentin oder die betreffende Tochtergesellschaft gemäß den Anleihebedingungen des betreffenden Gleichrangigen Wertpapiers zu der Zahlung, zu der Rückzahlung, zu dem Rückkauf oder zu dem anderweitigen Erwerb verpflichtet ist; oder

(x) the Issuer or the relevant Subsidiary is obliged under the terms and conditions of such Parity Security to make such payment, such redemption, such repurchase or such other acquisition; or

(y) die Emittentin oder die betreffende Tochtergesellschaft Gleichrangige Wertpapiere oder Schuldverschreibungen nach einem öffentlichen Rückkaufangebot oder öffentlichen Umtauschangebot mit einer unter dem jeweiligen Nennwert liegenden Gegenleistung je Gleichrangigem Wertpapier bzw. je Schuldverschreibung zurückkauft oder anderweitig erwirbt; oder

(y) the Issuer or the relevant Subsidiary repurchases or otherwise acquires any Parity Security or Note in whole or in part in a public tender offer or public exchange offer at a consideration per Parity Security or, as applicable, per Note below its respective par value; or

(z) die betreffenden Zahlungen auf oder in Bezug auf Gleichrangige Wertpapiere Konzerninterne Zahlungen sind.

(z) the relevant payments on, or in respect of, any Parity Securities are Intra-Group Payments.

"Konzerninterne Zahlungen" sind Zahlungen, die ausschließlich an die Emittentin und/oder an eine oder mehrere ihrer Tochtergesellschaften erfolgen.

"Intra-Group Payments" means payments made exclusively to the Issuer and/or one or more of its Subsidiaries.

(9) *Ende der Verzinsung.* Die Verzinsung der Schuldverschreibungen endet mit Beginn des Tages, an dem die Schuldverschreibungen zur Rückzahlung fällig werden. Sollte die Emittentin die Schuldverschreibungen bei Fälligkeit nicht einlösen, endet die Verpflichtung zur Zahlung von Zinsen auf die festgelegte Stückelung je ausstehender

(9) *Cessation of Interest Accrual.* The Notes shall cease to bear Interest from the beginning of the day on which they are due for redemption. If the Issuer shall fail to redeem the Notes when due, the obligation to pay Interest shall continue to accrue at the then Prevailing Interest Rate on the Specified Denomination per Note outstanding

Schuldverschreibung zu dem dann Anwendbaren Zinssatz nicht am Tag der Fälligkeit, sondern erst mit dem Beginn des Tages der tatsächlichen Rückzahlung der Schuldverschreibungen.

§ 5 RÜCKZAHLUNG UND RÜCKKAUF

- (1) *Endfälligkeit.* Sofern nicht bereits zuvor zurückgezahlt oder zurückgekauft und entwertet, wird die Emittentin den Gesamtnennbetrag der ausstehenden Schuldverschreibungen am 25. Juni 2079 (der "**Endfälligkeitstag**") zurückzahlen.
- (2) *Kündigungsrecht der Emittentin bei einem Quellensteuer-Ereignis, einem Steuerereignis, einem Ratingagenturereignis oder einem Akquisitionsergebnis.*
 - (a) Bei Eintritt eines Quellensteuer-Ereignisses, eines Steuerereignisses, eines Ratingagenturereignisses oder eines Akquisitionsergebnisses ist die Emittentin berechtigt, die Schuldverschreibungen jederzeit (insgesamt, jedoch nicht teilweise) durch eine unwiderrufliche Mitteilung gemäß § 13 unter Einhaltung einer Frist von mindestens 10 Geschäftstagen zu kündigen.

Erfolgt die Kündigung aufgrund eines Quellensteuer-Ereignisses, hat die Emittentin sämtliche ausstehenden Schuldverschreibungen zu einem Betrag je Schuldverschreibung in Höhe der festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen.

Erfolgt die Kündigung aufgrund eines Steuerereignisses, eines Ratingagenturereignisses oder eines Akquisitionsergebnisses hat die Emittentin sämtliche ausstehenden Schuldverschreibungen (i) zu einem Betrag je Schuldverschreibung in Höhe

beyond the due date to the beginning of the day of actual redemption of the Notes.

§ 5 REDEMPTION AND PURCHASE

- (1) *Maturity Date.* Unless previously redeemed or repurchased and cancelled, Issuer will repay the aggregate principal amount of the Notes outstanding on June 25, 2079 (the "**Maturity Date**").
- (2) *Issuer Call Right due to a Gross-up Event, a Tax Event, a Rating Agency Event or an Acquisition Event.*
 - (a) If either a Gross-up Event, a Tax Event, a Rating Agency Event or an Acquisition Event occurs, the Issuer may call and redeem the Notes (in whole but not in part) at any time by giving of not less than 10 Business Days' irrevocable notice in accordance with § 13.

If the Notes are called by the Issuer upon the occurrence of a Gross-up Event, all outstanding Notes will be redeemed at an amount per Note equal to the Specified Denomination plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

If the Notes are called upon the occurrence of a Tax Event, a Rating Agency Event or an Acquisition Event the Issuer will redeem all outstanding Notes (i) at an amount equal to 101 % of the Specified Denomination per Note plus any Interest accrued and unpaid to

von 101 % der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen, soweit eine solche Rückzahlung vor dem Ersten Rückzahlungstag erfolgt, oder (ii) zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen, soweit eine solche Rückzahlung an oder nach dem Ersten Rückzahlungstag erfolgt.

- (b) Im Fall eines Quellensteuer-Ereignisses kann eine Kündigungsmitteilung nicht früher als 90 Tage vor dem ersten Tag gemacht werden, an dem die Emittentin erstmals verpflichtet wäre, die jeweiligen Zusätzlichen Beträge (wie in § 8 beschrieben) in Ansehung fälliger Beträge auf die Schuldverschreibungen zu zahlen.

Im Fall eines der in diesem § 5(2) bezeichneten Ereignisse kann eine Kündigungsmitteilung nur zeitgleich mit oder nach einer Mitteilung der Emittentin über den Eintritt eines dieser Ereignisse nach Maßgabe von § 13 gemacht werden.

Die Emittentin hat der Hauptzahlstelle vor Abgabe einer Kündigungsmitteilung aus einem der in § 5(2) genannten Gründe folgende Dokumente zu übermitteln bzw. deren Übermittlung zu veranlassen:

- (i) eine von zwei ordnungsgemäß bevollmächtigten Vertretern der Emittentin unterzeichnete Bescheinigung, die bestätigt, dass die Emittentin berechtigt ist, die maßgebliche Rückzahlung vorzunehmen, und aus der die Tatsachen hervorgehen, auf

but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b) if such redemption occurs prior to the First Call Date, or (ii) at an amount equal to the Specified Denomination per Note plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b) if such redemption occurs on or after the First Call Date.

- (b) In the case of a Gross-up Event no notice of redemption may be given earlier than 90 days prior to the earliest day on which the Issuer would be for the first time obliged to pay the Additional Amounts (as described in § 8) in question on payments due in respect of the Notes.

In the case of any event specified in this § 5(2) a notice of redemption may only be given simultaneously with or after a notification by the Issuer in accordance with § 13 that such an event has occurred.

Prior to the giving of any notice of redemption resulting from any event specified in § 5(2), the Issuer shall deliver or procure that there is delivered to the Principal Paying Agent:

- (i) a certificate signed by any two duly authorized representatives of the Issuer stating that the Issuer is entitled to effect such redemption and setting out a statement of facts showing that the conditions precedent to the exercise of the right of the Issuer

deren Grundlage die Voraussetzungen für das Rückzahlungsrecht der Emittentin eingetreten sind; sowie

- (ii) für den Fall eines Quellensteuer-Ereignisses, ein Gutachten eines angesehenen externen Rechtsberaters, aus dem hervorgeht, dass die Emittentin verpflichtet ist oder verpflichtet sein wird, die betreffenden zusätzlichen Beträge als Folge eines Quellensteuer-Ereignisses zu zahlen.

(3) *Definitionen.*

Ein "**Quellensteuer-Ereignis**" liegt vor, falls die Emittentin verpflichtet ist oder verpflichtet sein wird, Zusätzliche Beträge (wie in § 8 beschrieben) als Folge einer Änderung oder Ergänzung von Gesetzen oder Vorschriften der Bundesrepublik Deutschland oder einer ihrer Gebietskörperschaften oder Steuerbehörden oder als Folge einer Änderung oder Ergänzung der offiziellen Auslegung oder Anwendung dieser Gesetze oder Vorschriften durch eine gesetzgebende Körperschaft, ein Gericht, eine Steuerbehörde, eine Aufsichtsbehörde oder eine sonstige Behörde (einschließlich des Erlasses von Gesetzen sowie der Bekanntmachung gerichtlicher oder aufsichtsrechtlicher Entscheidungen) zu zahlen, allerdings nur soweit die betreffende Änderung, Ergänzung oder Durchführung an oder nach dem Ausgabetag der Schuldverschreibungen wirksam wird und die Emittentin die Zahlungsverpflichtung nicht durch das Ergreifen von Maßnahmen vermeiden kann, die sie nach Treu und Glauben für angemessen hält.

Ein "**Steuerereignis**" liegt vor, wenn

- (a) der Hauptzahlstelle ein Gutachten eines anerkannten unabhängigen Steuerberaters übergeben worden ist, aus dem hervorgeht, dass an oder nach dem Ausgabetag der Schuldverschreibungen als Folge:

to redeem have been satisfied; and

- (ii) in the case of a Gross-up Event, an opinion of an external legal adviser of recognised standing to the effect that the Issuer has or will become obliged to pay the additional amounts in question as a result of a Gross-up Event.

(3) *Definitions.*

A "**Gross-up Event**" has occurred if the Issuer has or will become obliged to pay Additional Amounts (as set out in § 8) as a result of any change in, or amendment to, the laws or regulations of the Federal Republic of Germany or any political subdivision or taxing authority thereof, or therein, or as a result of any amendment to, or any change in, any official interpretation or application of any such laws or regulations by any legislative body, court, or taxing authority, governmental agency or regulatory authority (including the enactment of any legislation and the publication of any judicial decision or regulatory determination), provided that the relevant amendment, change or execution becomes effective on or after the issue date of the Notes and provided further that the payment obligation cannot be avoided by the Issuer taking such reasonable measures it (acting in good faith) deems appropriate.

A "**Tax Event**" shall have occurred if

- (a) an opinion of a recognised independent tax counsel has been delivered to the Principal Paying Agent, stating that on or after the issue date of the Notes, as a result of:

- | | |
|--|---|
| <p>(i) einer Änderung oder Ergänzung der Gesetze (oder von aufgrund dieser Gesetze erlassenen Bestimmungen oder Vorschriften) der Bundesrepublik Deutschland oder einer ihrer Gebietskörperschaften oder Steuerbehörden, die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen, verkündet oder anderweitig wirksam wird; oder</p> <p>(ii) einer Änderung oder Ergänzung der bindenden offiziellen Auslegung solcher Gesetze, Bestimmungen oder Vorschriften durch eine gesetzgebende Körperschaft, ein Gericht, eine Regierungsstelle oder eine Aufsichtsbehörde (einschließlich des Erlasses von Gesetzen sowie der Bekanntmachung gerichtlicher oder aufsichtsrechtlicher Entscheidungen), die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen, verkündet oder anderweitig wirksam wird; oder</p> <p>(iii) einer allgemein anwendbaren offiziellen Auslegung oder Verkündung, die an oder nach dem Ausgabetag der Schuldverschreibungen erlassen oder verkündet wird und nach der die Rechtslage im Hinblick auf diese Gesetze oder Vorschriften von der früheren allgemein anerkannten Rechtslage abweicht;</p> | <p>(i) any amendment to, or change in, the laws (or any rules or regulations thereunder) of the Federal Republic of Germany or any political subdivision or any taxing authority thereof or therein which is enacted, promulgated, issued or becomes effective otherwise on or after the issue date of the Notes; or</p> <p>(ii) any amendment to, or change in, an official and binding interpretation of any such laws, rules or regulations by any legislative body, court, governmental agency or regulatory authority (including the enactment of any legislation and the publication of any judicial decision or regulatory determination) which is enacted, promulgated, issued or becomes effective otherwise on or after the issue date of the Notes; or</p> <p>(iii) any generally applicable official interpretation or pronouncement that provides for a position with respect to such laws or regulations that differs from the previous generally accepted position which is issued or announced on or after the issue date of the Notes;</p> |
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Zahlungen, die von der Emittentin in Bezug auf die Schuldverschreibungen zahlbar sind, von der Emittentin nicht mehr für die Zwecke der deutschen Körperschaftsteuer voll abzugsfähig sind, bzw. innerhalb von 90 Tagen nach

payments by the Issuer on the Notes are no longer, or within 90 days of the date of that opinion will no longer be, fully deductible by the Issuer for German corporate income tax purposes; and

dem Datum dieses Gutachtens nicht mehr voll abzugsfähig sein werden; und

- (b) die Emittentin dieses Risiko nicht durch das Ergreifen zumutbarer Maßnahmen vermeiden kann.

Ein "**Ratingagenturereignis**" liegt vor, wenn die Emittentin von S&P oder Moody's oder von einem ihrer jeweiligen Rechtsnachfolger (jeweils eine "**Relevante Ratingagentur**"), schriftlich benachrichtigt wurde oder die Relevante Ratingagentur veröffentlicht, dass die Schuldverschreibungen aufgrund einer Änderung der Hybrid Rating Methodologie oder deren Auslegung nicht mehr der Anfänglichen

Eigenkapitalanrechnungskategorie (wie nachstehend definiert) und auch nicht einer höheren Eigenkapitalanrechnungskategorie (oder einer vergleichbaren Bezeichnung durch diese Relevante Ratingagentur, die beschreibt, in welchem Umfang der Bedingungen eines Finanzierungsinstruments die Fähigkeit der Emittentin zur Bedienung ihrer vorrangigen Verbindlichkeiten stützt) zuzuordnen sind.

"**Anfängliche Eigenkapitalanrechnungskategorie**" bezeichnet die Eigenkapitalanrechnungskategorie, der die Schuldverschreibungen mit Wirkung ab dem Tag, ab dem in Bezug auf die Schuldverschreibungen kein Akquisitionereignis mehr eintreten kann, zugeordnet sein werden, wie anfänglich am oder um den Tag ihrer Begebung durch die Relevante Ratingagentur gegenüber der Emittentin bestätigt.

Ein "**Akquisitionereignis**" liegt vor, wenn (x) die Emittentin oder eine Tochtergesellschaft den Erwerb der Versum Materials, Inc. nicht abgeschlossen und vollzogen hat und (y) öffentlich erklärt hat, dass sie nicht länger beabsichtigt, den Erwerb zu verfolgen und die Emittentin gemäß § 13 den Gläubigern dieses Akquisitionereignis am oder vor dem 13. Juli 2020 bekanntgemacht hat, bevor sie die Erklärung nach § 5(2)(a) abgegeben hat. Die Emittentin kann auf ihr Recht zur Rückzahlung wegen eines Akquisitionereignisses

- (b) such risk cannot be avoided by the Issuer taking reasonable measures available to it.

A "**Rating Agency Event**" has occurred if the Issuer has received written confirmation from either S&P or Moody's or from any of their respective legal successors, (each a "**Relevant Rating Agency**") or the Relevant Rating Agency publishes, that the Notes due to a change in hybrid rating methodology or the interpretation thereof will no longer be eligible for the Initial Category of Equity Credit (as defined below) or a higher category of equity credit (or such similar nomenclature as being used by that Relevant Rating Agency from time to time to describe the degree to which the terms of an instrument are supportive of the Issuer's senior obligations).

"**Initial Category of Equity Credit**" means the category of equity credit to be attributed to the Notes with effect from the date on which the Notes will no longer be subject to an Acquisition Event, as first confirmed by the Relevant Rating Agency to the Issuer at or around the date of issuance.

An "**Acquisition Event**" shall occur if (x) the Issuer or any Subsidiary has not completed and closed the acquisition of Versum Materials, Inc., and (y) has publicly stated that it no longer intends to pursue such acquisition; and the Issuer has given notice to the Holders in accordance with § 13 on or prior to July 13, 2020 of such Acquisition Event prior to giving the notice in accordance with § 5(2)(a). The Issuer may waive its right to call the Notes for redemption based on an Acquisition Event by giving notice pursuant to § 13.

verzichten, indem sie dies nach § 13 bekannt macht.

(4) *Rückzahlung nach Wahl der Emittentin.*

Die Emittentin kann die Schuldverschreibungen (insgesamt, jedoch nicht teilweise) mit Wirkung (i) zu jedem Tag während des Zeitraums ab dem 25. März 2029 (der "**Erste Rückzahlungstag**") bis zum Ersten Resettag (jeweils einschließlich) und (ii) zu jedem danach folgenden Zinszahlungstag nach unwiderruflicher Kündigungsmitteilung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von mindestens 20 Geschäftstagen kündigen.

Eine solche Kündigungsmitteilung verpflichtet die Emittentin, sämtliche ausstehenden Schuldverschreibungen zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzuzahlen.

(5) *Rückkauf von Schuldverschreibungen.* Die Emittentin oder Tochtergesellschaften können unter Einhaltung der einschlägigen gesetzlichen Vorschriften jederzeit Schuldverschreibungen im Markt oder anderweitig zu jedem beliebigen Preis kaufen. Derartig erworbene Schuldverschreibungen können entwertet, gehalten oder wieder veräußert werden.

(6) *Kündigungsrecht der Emittentin bei geringem ausstehenden Gesamtnennbetrag.* Falls die Emittentin und/oder eine Tochtergesellschaft allein oder gemeinsam Schuldverschreibungen im Volumen von 80 % oder mehr des ursprünglich begebenen Gesamtnennbetrages der Schuldverschreibungen erworben hat, kann die Emittentin die verbleibenden Schuldverschreibungen (insgesamt, jedoch nicht teilweise) nach unwiderruflicher Kündigungsmitteilung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von mindestens 20 und höchstens 40 Geschäftstagen kündigen und zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum

(4) *Redemption at the Option of the Issuer.*

The Issuer may call and redeem the Notes (in whole but not in part) with effect (i) as of any date during the period from and including March 25, 2029 (the "**First Call Date**") to and including the First Reset Date and (ii) on any Interest Payment Date thereafter upon giving not less than 20 Business Days' irrevocable notice of redemption to the Holders in accordance with § 13.

Such notice of redemption shall oblige the Issuer to redeem all outstanding Notes at an amount per Note equal to the Specified Denomination plus any interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

(5) *Purchase of Notes.* The Issuer or any Subsidiary may, in compliance with applicable laws, at any time purchase Notes in the open market or otherwise and at any price. Such acquired Notes may be cancelled, held or resold.

(6) *Issuer Call Right in the case of Minimal Outstanding Aggregate Principal Amount.* In the event that the Issuer and/or any Subsidiary has, severally or jointly, purchased Notes equal to or in excess of 80 % of the aggregate principal amount of the Notes initially issued, the Issuer may call and redeem the remaining Notes (in whole but not in part) upon giving not less than 20 and not more than 40 Business Days' irrevocable notice of redemption to the Holders in accordance with § 13 at an amount equal to the Specified Denomination per Note plus any Interest accrued and unpaid to but excluding the Redemption Date and, for the avoidance of doubt, any Deferred Interest

Rückzahlungstag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände zurückzahlen.

(7) *Kündigungsrecht der Emittentin nach Eintritt eines Kontrollwechselereignisses.*

(a) Wenn ein Kontrollwechselereignis (wie in § 5(7)(c) definiert) eintritt, hat die Emittentin binnen 20 Geschäftstagen den Kontrollwechsel-Stichtag (wie in § 5(7)(c) definiert) zu bestimmen und das Kontrollwechselereignis und den Kontrollwechsel-Stichtag gemäß § 13 anzuzeigen (die "**Kontrollwechsel-Mitteilung**").

(b) Wenn ein Kontrollwechselereignis eintritt, ist die Emittentin berechtigt, die Schuldverschreibungen (insgesamt, jedoch nicht teilweise) durch Erklärung gemäß dem nachstehenden Absatz mit Wirkung zu dem Kontrollwechsel-Stichtag zu kündigen. Im Falle einer solchen Kündigung hat die Emittentin jede ausstehende Schuldverschreibung am Kontrollwechsel-Stichtag zu einem Betrag je Schuldverschreibung in Höhe der Festgelegten Stückelung zuzüglich der bis zum Kontrollwechsel-Stichtag (ausschließlich) aufgelaufenen, aber noch nicht bezahlten Zinsen sowie, zur Klarstellung, etwaiger gemäß § 4(8)(b) fälliger Zinsrückstände, zurückzuzahlen.

Die Emittentin kann ihr Recht zur Rückzahlung gemäß diesem § 5(7) durch eine Bekanntmachung an die Gläubiger gemäß § 13 unter Einhaltung einer Frist von nicht mehr als 5 Geschäftstagen nach Bekanntmachung der Kontrollwechsel-Mitteilung ausüben. Diese Bekanntmachung kann auch zeitgleich mit der Kontrollwechsel-Mitteilung erfolgen

(c) In diesem § 5(7) gilt:

Ein "**Kontrollwechselereignis**" gilt jedes Mal in einem der folgenden Fälle als eingetreten, wenn (i) E. Merck KG, Darmstadt das Recht verliert, die

Payments due and payable pursuant to § 4(8)(b).

(7) *Issuer Call Right following a Change of Control Event.*

(a) If a Change of Control Event (as defined in § 5(7)(c)) occurs, the Issuer will fix the Change of Control Effective Date (as defined in § 5(7)(c)) and give notice in accordance with § 13 of the Change of Control and the Change of Control Effective Date within 20 Business Days (the "**Change of Control Notice**").

(b) If a Change of Control Event occurs, the Issuer may call the Notes for redemption (in whole but not in part) with effect as of the Change of Control Effective Date upon giving notice in accordance with the following paragraph. In the case such call notice is given, the Issuer shall redeem each Note outstanding at an amount per Note equal to the Specified Denomination plus any Interest accrued and unpaid to but excluding the Change of Control Effective Date and, for the avoidance of doubt, any Deferred Interest Payments due and payable pursuant to § 4(8)(b).

The Issuer may give not more than 5 Business Days' notice to the Holders after publication of the Change of Control Notice in accordance with § 13 of an early redemption pursuant to this § 5(7). Such notice may be given simultaneously with the Change of Control Notice.

(c) In this § 5(7):

A "**Change of Control Event**" shall be deemed to have occurred at each time if (i) E. Merck KG, Darmstadt loses the right to appoint, subject to the consent of

Mehrheit der persönlich haftenden Gesellschafter ohne Kapitalanteil der Merck KGaA, Darmstadt mit Zustimmung der einfachen Mehrheit der anderen persönlich haftenden Gesellschafter zu bestellen, und (ii) eine Person oder mehrere Personen, die abgestimmt handeln, oder einer oder mehrere Dritte, die im Auftrag einer solchen Person oder solcher Personen handeln, zu irgendeiner Zeit mittelbar oder unmittelbar (unabhängig davon, ob die persönlich haftenden Gesellschafter oder der Aufsichtsrat der Merck KGaA, Darmstadt ihre bzw. seine Zustimmung erteilt hat bzw. haben) mehr als 50 % des Grundkapitals der Merck KGaA, Darmstadt erwirbt (erwerben) (ein "**Kontrollwechsel**"); und die Merck KGaA, Darmstadt bei Eintritt des Kontrollwechsels über ein (mit Zustimmung der Merck KGaA, Darmstadt erteiltes) Rating von Moody's Investors Service Limited ("**Moody's**") oder Standard & Poor's Rating Services ein Unternehmen der S&P Global Inc. ("**S&P**") oder einer jeweiligen Nachfolgegesellschaft (jeweils eine "**Ratingagentur**") verfügt, entsprechend: (x) einem Investment Grade Rating (Baa3/BBB- oder gleichwertig oder besser) und dieses Rating von einer Ratingagentur innerhalb von 120 Tagen nach dem Kontrollwechsel zu einem non-investment Grade Rating (Ba1/BB+ oder gleichwertig oder schlechter) herabgestuft oder das Rating zurückgezogen wurde und nicht innerhalb dieser 120-Tagesperiode anschließend (im Falle einer Herabstufung) durch diese Ratingagentur wieder auf ein Investment Grade Rating heraufgestuft oder (im Falle einer Zurückziehung) durch das Investment Grade Rating einer anderen Ratingagentur ersetzt wurde; oder (y) einem non-investment Grade Rating (Ba1/BB+ oder gleichwertig oder schlechter) und dieses Rating durch eine

the simple majority of the other partners liable on an unlimited basis (*persönlich haftende Gesellschafter*) of Merck KGaA, Darmstadt, the majority of the personally liable partners not contributing capital (*persönlich haftende Gesellschafter ohne Kapitalanteil*) of Merck KGaA, Darmstadt, and (ii) any person or persons acting in concert or any person or persons acting on behalf of any such person(s), at any time directly or indirectly acquire(s) (whether or not approved by the partners liable on an unlimited basis (*persönlich haftende Gesellschafter*) or the supervisory board (*Aufsichtsrat*) of Merck KGaA, Darmstadt more than 50 % of the share capital (*Grundkapital*) of Merck KGaA, Darmstadt (a "**Change of Control**"); and at the time of the occurrence of a Change of Control, Merck KGaA, Darmstadt carries (with the agreement of Merck KGaA, Darmstadt) from any of Moody's Investors Service Limited ("**Moody's**") or Standard & Poor's Rating Services, a division of S&P Global Inc. ("**S&P**"), or any of their respective successors (each, a "**Rating Agency**"): (x) an investment grade credit rating (Baa3/BBB-, or equivalent, or better), and such rating from any Rating Agency is within 120 days of such time either downgraded to a non-investment grade credit rating (Ba1/BB+, or equivalent, or worse) or withdrawn and is not within such 120-day period subsequently (in the case of a downgrade) upgraded to an investment grade credit rating by such Rating Agency or (in the case of withdrawal) replaced by an investment grade credit rating from any other Rating Agency; or (y) a non-investment grade credit rating (Ba1/BB+, or equivalent, or worse), and such rating from any Rating Agency is within 120 days of such time downgraded by one or more notches (for illustration, Ba1 to Ba2 being one notch) and is not within such 120-day period subsequently upgraded to its earlier

Ratingagentur innerhalb von 120 Tagen nach Kontrollwechsel um eine oder mehrere Stufen (zur Erläuterung: Ba1 nach Ba2 entspricht einer Stufe) herabgestuft und nicht innerhalb dieser 120-Tagesperiode anschließend wieder auf das ursprüngliche oder ein besseres Rating durch diese Ratingagentur heraufgestuft wurde, wobei falls die Merck KGaA, Darmstadt zum Zeitpunkt des Eintritts des Kontrollwechsels über ein Rating von mehr als einer Ratingagentur verfügt, von denen mindestens eines ein Investment Grade Rating ist, die Regelung unter (x) Anwendung findet; und im Zusammenhang mit einer der oben genannten Entscheidungen die betreffende Ratingagentur öffentlich bekannt macht oder gegenüber der Merck KGaA, Darmstadt schriftlich bestätigt, dass diese Entscheidung ganz oder teilweise auf den Kontrollwechsel zurückzuführen ist.

Falls sich die von Moody's oder S&P verwendeten Rating Kategorien gegenüber denen, die in vorangegangenen Absatz angegeben wurden, ändern sollten, wird die Emittentin diejenigen Rating Kategorien von Moody's oder S&P bestimmen, die den früheren Rating Kategorien von Moody's oder S&P möglichst nahe kommen; der vorangegangene Absatz ist dann entsprechend auszulegen.

"Kontrollwechsel-Stichtag" bezeichnet den von der Emittentin in der Kontrollwechsel-Mitteilung festgelegten Tag, der (i) falls zum betreffenden Zeitpunkt nicht nachrangige Fremdkapitalwertpapiere der Merck KGaA, Darmstadt ausstehen, der fünfte Geschäftstag nach dem Tag sein muss, an dem solche Wertpapiere aufgrund einer Kündigung der Gläubiger dieser Wertpapiere wegen des gleichen Kontrollwechsel-Ereignisses (oder eines vergleichbaren Konzepts) fällig werden können; und (ii) falls zum betreffenden

credit rating or better by such Rating Agency, provided that if at the time of the occurrence of the Change of Control Merck KGaA, Darmstadt carries a rating from more than one Rating Agency, at least one of which is investment grade, then sub-paragraph (x) will apply; and in making the relevant decision(s) referred to above, the relevant Rating Agency announces publicly or confirms in writing to Merck KGaA, Darmstadt that such decision(s) resulted, in whole or in part, from the occurrence of the Change of Control.

If the rating designations employed by any of Moody's or S&P are changed from those which are described in the paragraph above, the Issuer shall determine the rating designations of Moody's or S&P (as appropriate) as are most equivalent to the prior rating designations of Moody's or S&P and the paragraph above shall be read accordingly.

"Change of Control Effective Date" means the date fixed by the Issuer in the Change of Control Notice, which (i) must, if at the relevant time any senior debt securities of Merck KGaA, Darmstadt are outstanding, be the fifth Business Day following the date on which such securities may become payable due to put notices of the holders of such securities in respect of the same Change of Control Event (or a similar concept); and (iii) must, if at the relevant time no senior debt securities of Merck KGaA, Darmstadt are outstanding, be a

Zeitpunkt keine nicht nachrangigen Fremdkapitalwertpapiere der Merck KGaA, Darmstadt ausstehen ein Geschäftstag sein muss, der nicht mehr als 40 Tage nach Bekanntmachung der Kontrollwechsel-Mitteilung liegen darf.

§ 6 ZAHLUNGEN

- (1) *Zahlung von Kapital und Zinsen.* Die Emittentin verpflichtet sich, Kapital und Zinsen auf die Schuldverschreibungen sowie alle sonstigen auf die Schuldverschreibungen zahlbaren Beträge bei Fälligkeit in Euro zu zahlen. Die Zahlung von Kapital und Zinsen sowie allen sonstigen auf die Schuldverschreibungen zahlbaren Beträge erfolgt an die Hauptzahlstelle zur Weiterleitung an das Clearingsystem oder an dessen Order zur Gutschrift für die jeweiligen Kontoinhaber und im Fall von Zinsen und Zinsrückständen auf Schuldverschreibungen, die durch die Vorläufige Globalurkunde verbrieft sind, nach ordnungsgemäßer Bescheinigung gemäß § 2(2)(b). Die Zahlung an das Clearingsystem oder an dessen Order, vorausgesetzt, die Schuldverschreibungen werden noch durch das Clearingsystem gehalten, befreit die Emittentin in Höhe der geleisteten Zahlung von ihren entsprechenden Verbindlichkeiten aus den Schuldverschreibungen.
- (2) *Fälligkeitstag kein Geschäftstag.* Falls ein Fälligkeitstag für die Zahlung von Kapital und/oder Zinsen und/oder Zinsrückständen kein Geschäftstag ist, erfolgt die Zahlung, erst am nächstfolgenden Geschäftstag; Gläubiger sind nicht berechtigt, Zinsen oder eine andere Entschädigung wegen eines solchen Zahlungsaufschubs zu verlangen.
- (3) *Lieferung und Zahlungen nur außerhalb der Vereinigten Staaten.* Unbeschadet der übrigen Bestimmungen in diesen Anleihebedingungen erfolgen die Lieferung oder Kapitalrückzahlungen oder Zinszahlungen bezüglich der Schuldverschreibungen, sei es in bar oder in anderer Form, ausschließlich außerhalb der Vereinigten Staaten.

Business Day which falls not more than 40 days after publication of the Change of Control Notice.

§ 6 PAYMENTS

- (1) *Payment of Principal and Interest.* The Issuer undertakes to pay, as and when due, principal and Interest as well as all other amounts payable on the Notes in euro. Payment of principal and Interest as well as all other amounts due and payable on the Notes shall be made to the Principal Paying Agent for on-payment to the Clearing System or to its order for credit to the respective accountholders and, in the case of payments of Interest and Deferred Interest Payments on Notes represented by the Temporary Global Note, upon due certification as provided in § 2(2)(b). Payments to the Clearing System or to its order shall, to the extent of amounts so paid and provided the Notes are still held on behalf of the Clearing System, constitute the discharge of the Issuer from its corresponding obligations under the Notes.
- (2) *Due Date not a Business Day.* If the due date for any payment of principal and/or Interest and/or Deferred Interest Payments is not a Business Day, payment shall be effected only on the next Business Day; a Holder shall have no right to claim payment of any interest or other indemnity in respect of such delay in payment.
- (3) *No Delivery or Payment Except outside United States.* Notwithstanding any other provision of these Terms and Conditions, no delivery or payment of principal or Interest in respect of the Notes, whether in cash or otherwise, shall be made unless such payment is made outside the United States.

§ 7

ZAHLSTELLEN UND BERECHNUNGSSTELLE

- (1) *Hauptzahlstelle.* Die Hauptzahlstelle (die "**Hauptzahlstelle**") ist:

Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Bundesrepublik Deutschland

- (2) *Berechnungsstelle.* Die Berechnungsstelle (die "**Berechnungsstelle**") ist:

Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Bundesrepublik Deutschland

- (3) *Ortswechsel.* Die Hauptzahlstelle und die Berechnungsstelle behalten sich das Recht vor, jederzeit ihre jeweiligen bezeichneten Geschäftsstellen durch eine andere bezeichnete Geschäftsstelle in der Bundesrepublik Deutschland zu ersetzen.

- (4) *Berechnungen der Berechnungsstelle.* Sämtliche Bescheinigungen, Mitteilungen, Gutachten, Festsetzungen, Berechnungen, Quotierungen und Entscheidungen, die von der Berechnungsstelle für die Zwecke dieser Anleihebedingungen gemacht, abgegeben, getroffen oder eingeholt werden, sind (sofern nicht vorsätzliches Fehlverhalten oder ein offensichtlicher Irrtum vorliegt) für die Emittentin, die Gläubiger und die Zahlstellen bindend.

- (5) *Änderung der Bestellung oder Abberufung.* Die Emittentin behält sich das Recht vor, jederzeit die Bestellung der Hauptzahlstelle oder der Berechnungsstelle zu ändern oder zu beenden und eine andere Hauptzahlstelle oder zusätzliche oder andere Zahlstellen oder eine andere Berechnungsstelle zu bestellen. Die Emittentin wird zu jedem Zeitpunkt eine Hauptzahlstelle und eine Berechnungsstelle unterhalten. Eine Änderung, Abberufung, Bestellung oder ein sonstiger Wechsel wird nur wirksam (außer im Insolvenzfall, in dem eine

§ 7

PAYING AGENTS AND CALCULATION AGENT

- (1) *Principal Paying Agent.* Principal paying agent (the "**Principal Paying Agent**") shall be:

Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Federal Republic of Germany

- (2) *Calculation Agent.* Calculation agent (the "**Calculation Agent**") shall be:

Deutsche Bank Aktiengesellschaft
Trust & Agency Services
Taunusanlage 12
60325 Frankfurt am Main
Federal Republic of Germany

- (3) *Change of Office.* Each of the Principal Paying Agent and the Calculation Agent reserves the right at any time to change its specified office to some other specified office in the Federal Republic of Germany.

- (4) *Calculations made by the Calculation Agent.* All certificates, communications, opinions, determinations, calculations, quotations and decisions given, expressed, made or obtained for the purposes of the provisions of these Terms and Conditions by the Calculation Agent shall (in the absence of wilful misconduct or manifest error) be binding upon the Issuer, the Holders and the paying agents.

- (5) *Variation or Termination of Appointment.* The Issuer reserves the right at any time to vary or terminate the appointment of the Principal Paying Agent or the Calculation Agent and to appoint another Principal Paying Agent or additional or other paying agents or another Calculation Agent. The Issuer shall at all times maintain a Principal Paying Agent and a Calculation Agent. Any variation, termination, appointment or other change shall only take effect (other than in the case of insolvency, when it shall be of immediate effect) after not

solche Änderung sofort wirksam wird), sofern die Gläubiger hierüber gemäß § 13 vorab unter Einhaltung einer Frist von mindestens 30 und nicht mehr als 45 Tagen informiert wurden.

- (6) *Erfüllungsgehilfe(n) der Emittentin.* Die Hauptzahlstelle und die Berechnungsstelle handeln ausschließlich als Beauftragte der Emittentin und übernehmen keine Verpflichtungen gegenüber den Gläubigern; es wird kein Vertrags-, Auftrags- oder Treuhandverhältnis zwischen ihnen und den Gläubigern begründet.
- (7) Wenn die Emittentin gemäß § 4(2)(g) einen Unabhängigen Berater bestellt, dann sind § 7(4)-(6) entsprechend auf den Unabhängigen Berater anzuwenden.

§ 8 BESTEUERUNG

Alle in Bezug auf die Schuldverschreibungen von der Emittentin an die Gläubiger zahlbaren Kapitalbeträge, Zinsen und Zinsrückstände werden ohne Einbehalt oder Abzug von gegenwärtigen oder zukünftigen Steuern oder Abgaben gleich welcher Art ("**Steuern**") gezahlt, die von oder im Namen der Bundesrepublik Deutschland, ihrer Bundesländer oder einer ihrer anderen steuererhebungsberechtigten Gebietskörperschaften (das "**Steuerhoheitsgebiet**") im Wege des Abzugs oder Einbehalts auferlegt oder erhoben werden, es sei denn, ein solcher Abzug oder Einbehalt ist gesetzlich vorgeschrieben. Falls die Emittentin gesetzlich zu einem solchen Abzug oder Einbehalt verpflichtet ist, wird die Emittentin diejenigen zusätzlichen Beträge ("**Zusätzliche Beträge**") zahlen, die erforderlich sind, damit die den Gläubigern zufließenden Beträge jeweils den Beträgen entsprechen, die diese ohne einen solchen Einbehalt oder Abzug erhalten hätten. Die Verpflichtung zur Zahlung solcher Zusätzlichen Beträge besteht jedoch nicht in Bezug auf Folgendes:

- (1) Deutsche Kapitalertragsteuer (inklusive der sog. Abgeltungsteuer), die nach dem deutschen Einkommensteuergesetz abgezogen oder einbehalten wird, und den deutschen Solidaritätszuschlag und die deutsche Kirchensteuer oder jede andere Steuer, welche die deutsche Kapitalertragsteuer bzw. den Solidaritätszuschlag bzw. die Kirchensteuer

less than 30 nor more than 45 days' prior notice thereof shall have been given to the Holders in accordance with § 13.

- (6) *Agent of the Issuer.* The Principal Paying Agent and the Calculation Agent act solely as agents of the Issuer and do not assume any obligations towards or relationship of contract, agency or trust for or with any of the Holders.
- (7) If the Issuer appoints an Independent Adviser in accordance with § 4(2)(g), § 7(4)-(6) shall apply *mutatis mutandis* to the Independent Adviser.

§ 8 TAXATION

All payments of principal, Interest and Deferred Interest Payments made by the Issuer in respect of the Notes to the Holders shall be made without withholding or deduction for, any present or future taxes or duties of whatever nature ("**Taxes**") imposed or levied by way of deduction or withholding by or on behalf of the Federal Republic of Germany, its federal states (*Bundesländer*) or any authority therein or thereof having power to tax (the "**Taxing Jurisdiction**"), unless such deduction or withholding is required by law. If the Issuer is required by law to make such deduction or withholding, the Issuer shall pay such additional amounts (the "**Additional Amounts**") as shall result in receipt by the Holders of such amounts as would have been received by them had no such withholding or deduction been required, except that no Additional Amounts shall be payable with respect to:

- (1) German *Kapitalertragsteuer* (including *Abgeltungsteuer*) to be deducted or withheld pursuant to the German Income Tax Act (*Einkommensteuergesetz*), and the German Solidarity Surcharge (*Solidaritätszuschlag*) and the German Church Tax (*Kirchensteuer*) or any other tax which may substitute the German *Kapitalertragsteuer* or *Solidaritätszuschlag* or

ersetzen sollte, und Einbehalte jeder Art, die von der Emittentin oder einem ihrer Vertreter für Rechnung des Inhabers der Schuldverschreibungen auf die von diesem geschuldete Vermögensteuer vorzunehmen sind, für den Fall, dass eine entsprechende Steuer von dem deutschen Gesetzgeber eingeführt wird; oder

- (2) Zahlungen an einen Gläubiger oder an einen Dritten für einen Gläubiger, falls dieser Gläubiger (oder ein Treuhänder, Treugeber, Begünstigter, Mitglied oder Gesellschafter eines solchen Gläubigers, sofern es sich bei dem Gläubiger um eine Vermögensmasse, ein Treuhandvermögen, eine Personengesellschaft oder eine Kapitalgesellschaft handelt) aufgrund einer früheren oder gegenwärtigen Verbindung zu Deutschland, einschließlich eines solchen Gläubigers (bzw. Treuhänders, Treugebers, Begünstigten, Mitglieds oder Gesellschafters), der Staatsbürger oder Einwohner dieses Landes war oder ist oder in diesem Land ein Gewerbe, ein Geschäft oder eine Repräsentanz betrieben hat oder betreibt oder eine Betriebsstätte hatte oder hat, einem solchen Einbehalt oder Abzug unterliegt und sich diese Verbindung nicht nur darauf beschränkt, dass er die Schuldverschreibung hält oder die unter dieser jeweils zu leistenden Zahlungen erhält; oder
- (3) Zahlungen an einen Gläubiger oder an einen Dritten für einen Gläubiger, falls kein Einbehalt oder Abzug hätte erfolgen müssen, wenn die Schuldverschreibung zum Zeitpunkt der fraglichen Zahlung in einem Depotkonto bei einem nicht in Deutschland ansässigen Kreditinstitut Finanzdienstleistungsinstitut, Wertpapierhandelsunternehmen oder einer nicht in Deutschland ansässigen Wertpapierhandelsbank verwahrt gewesen wären; oder
- (4) Zahlungen, falls der Einbehalt oder Abzug bei Zahlung begründet wird durch (i) eine Richtlinie oder Verordnung der Europäischen Union betreffend die Besteuerung von Zinserträgen, welche an eine natürliche Person oder an bestimmte juristische Personen, die als sonstige Einrichtungen bezeichnet werden, ausgezahlt werden, oder (ii) eine

Kirchensteuer, as the case may be, and withholdings of any kind to be made by the Issuer or one of its representatives on behalf of a Holder, where such Holder is subject to German net asset tax (*Vermögensteuer*), in case such a tax will be enacted by the German legislative authorities; or

- (2) payments to, or to a third party on behalf of, a Holder where such Holder (or a fiduciary, trustor, beneficiary, member or interest holder of such Holder, if such Holder is an estate, a trust, a partnership or a corporation) is liable to such withholding or deduction by reason of having some present or former connection with Germany, including, without limitation, such Holder (or such fiduciary, trustor, beneficiary, member or interest holder) being or having been a citizen or resident thereof or being or having been engaged in a trade or business present therein or having, or having had, a permanent establishment therein, other than by reason only of the holding of such Note or the receipt of the relevant payment in respect thereof; or
- (3) payments to, or to a third party on behalf of, a Holder where no such withholding or deduction would have been required to be made if the Notes were credited at the time of payment to a securities deposit account with a bank, financial services institution, securities trading business or securities trading bank, in each case outside Germany; or
- (4) payments where such withholding or deduction is imposed pursuant to (i) any European Directive or regulation concerning the taxation of interest income paid to an individual and certain types of entities called "residual entities", or (ii) any international treaty or understanding relating to such taxation and to which Germany or the European Union is a

zwischenstaatliche Vereinbarung über die Besteuerung solcher Zinserträge, an der Deutschland oder die Europäische Union beteiligt ist, oder (iii) eine gesetzliche Vorschrift, die eine solche Richtlinie, Verordnung oder Vereinbarung umsetzt oder befolgt, oder (iv) das luxemburgische Gesetz vom 23. Dezember 2005, geändert durch das Gesetz vom 17. Juli 2008, bezüglich natürlicher Personen, die in Luxemburg ansässig sind, oder (v) einen Vertrag gemäß Abschnitt 1471(b) des U.S. Internal Revenue Code von 1986 (der "**Code**") oder andere Regelungen gemäß den Abschnitten 1471 bis 1474 des Codes sowie sämtliche darunter erlassene Vorschriften, amtliche Auslegungen und Umsetzungsakte, die auf zwischenstaatlichen Vereinbarungen beruhen; oder

- (5) Zahlungen, soweit der Einbehalt oder Abzug von einem Gläubiger oder von einem Dritten für einen Gläubiger vorzunehmen ist, der einen solchen Einbehalt oder Abzug dadurch rechtmäßig hätte vermeiden können (aber nicht vermieden hat), dass er gesetzliche Vorschriften beachtet, oder dafür sorgt, dass Dritte dieses tun, oder dadurch, dass er eine Nichtansässigkeitserklärung oder einen vergleichbaren Antrag auf Steuerbefreiung gegenüber der am Zahlungsort zuständigen Steuerbehörde abgibt oder dafür sorgt, dass dies durch einen Dritten erfolgt, oder
- (6) Zahlungen, deren Einbehalt oder Abzug von einem Gläubiger oder von einem Dritten für einen Gläubiger vorzunehmen ist, der einen solchen Einbehalt oder Abzug durch die Bewirkung einer Zahlung über eine andere Zahlstelle in einem Mitgliedstaat der Europäischen Union, welche nicht zu einem solchen Einbehalt oder Abzug verpflichtet ist, hätte vermeiden können; oder
- (7) Zahlungen, soweit der Einbehalt oder Abzug vorzunehmen ist, weil der Gläubiger eine Schuldverschreibung mehr als 30 Tage nach dem Tag zur Zahlung vorlegt, an dem diese Zahlung erfüllbar und fällig wurde bzw., soweit dies später eintritt, nach dem Tag, an dem die fällige Zahlung ordnungsgemäß bereitgestellt wurde; oder

party, or (iii) any provision of law implementing, or complying with, or introduced to conform with, such Directive, regulation, treaty or understanding, or (iv) the Luxembourg law of December 23, 2005, as amended by the law of July 17, 2008, with respect to Luxembourg resident individuals, or (v) an agreement described in section 1471(b) of the U.S. Internal Revenue Code of 1986 (the "**Code**") or otherwise imposed pursuant to sections 1471 through 1474 of the Code, any regulations or agreements thereunder, any official interpretations thereof, or any law implementing an intergovernmental approach thereto; or

- (5) payments to the extent such withholding or deduction is payable by or on behalf of a Holder who could lawfully avoid (but has not so avoided) such withholding or deduction by complying or procuring that any third party complies with any statutory requirements or by making or procuring that a third party makes a declaration of non-residence or other similar claim for exemption to any tax authority in the place where the payment is effected; or
- (6) payments to the extent such withholding or deduction is payable by or on behalf of a Holder who would have been able to avoid such withholding or deduction by effecting a payment via another Paying Agent in a Member State of the European Union, not obliged to withhold or deduct tax; or
- (7) payments to the extent such withholding or deduction is for or on account of the presentation by the Holder of any Note for payment on a date more than 30 days after the date on which such payment became due and payable or the date on which payment thereof is duly provided for, whichever occurs later; or

(8) jegliche Kombination der Absätze (1)-(7).

Zudem werden keine Zusätzlichen Beträge im Hinblick auf Zahlungen auf die Schuldverschreibungen an einen Gläubiger gezahlt, welcher die Zahlung als Treuhänder oder Personengesellschaft oder als sonstiger nicht alleiniger wirtschaftlicher Eigentümer erhält, soweit nach den Gesetzen des Steuerhoheitsgebiets eine solche Zahlung für Steuerzwecke dem Einkommen eines Begünstigten bzw. Treugebers bezüglich einer solchen Treuhand oder eines Gesellschafters der Personengesellschaft oder eines wirtschaftlichen Eigentümers zugerechnet würde, der jeweils selbst nicht zum Erhalt von Zusätzlichen Beträgen berechtigt wäre, wenn er selbst Gläubiger der Schuldverschreibung(en) wäre.

§ 9

VORLEGUNGSFRIST

Die in § 801 Absatz 1 Satz 1 BGB bestimmte Vorlegungsfrist wird für die Schuldverschreibungen auf zehn Jahre verkürzt.

§ 10

ERSETZUNG DER EMITTENTIN

(1) *Ersetzung.* Die Emittentin (wobei eine Bezugnahme auf die Emittentin auch alle früheren Nachfolgeschuldnerinnen (wie nachfolgend definiert) umfasst) ist jederzeit berechtigt, wenn kein Zahlungsverzug hinsichtlich Kapital oder Zinsen oder Zinsrückstände auf die Schuldverschreibungen vorliegt, ohne weitere Zustimmung der Gläubiger ein Verbundenes Finanzierungsunternehmen an ihrer Stelle als Hauptschuldnerin (ein solches Unternehmen ist die "**Nachfolgeschuldnerin**") für alle Verpflichtungen aus und im Zusammenhang mit den Schuldverschreibungen einzusetzen, vorausgesetzt, dass:

- (a) die Nachfolgeschuldnerin alle Verpflichtungen der Emittentin aus den Schuldverschreibungen übernimmt;
- (b) die Nachfolgeschuldnerin in der Lage ist, sämtliche sich aus den Schuldverschreibungen ergebenden Zahlungsverpflichtungen in Euro leisten

(8) any combination of items (1)-(7);

nor shall any Additional Amounts be paid with respect to any payment on a Note to a Holder who is a fiduciary or partnership or who is other than the sole beneficial owner of such payment to the extent such payment would be required by the laws of the Taxing Jurisdiction to be included in the income, for tax purposes, of a beneficiary or trustor with respect to such fiduciary or a member of such partnership or a beneficial owner who would not have been entitled to such Additional Amounts had such beneficiary, trustor, member or beneficial owner been the Holder of the Note(s).

§ 9

PRESENTATION PERIOD

The presentation period provided in section 801 paragraph 1 sentence 1 of the German Civil Code (*Bürgerliches Gesetzbuch*) is reduced to ten years for the Notes.

§ 10

SUBSTITUTION OF ISSUER

(1) *Substitution.* The Issuer (reference to which shall always include any previous Substitute Debtor (as defined below)) may, at any time, if no payment of principal or interest or Deferred Interest Payments on any of the Notes is in default, without the consent of the Holders, substitute for the Issuer any Financing Affiliate (as defined below) as the principal debtor in respect to the Notes (any such company, the "**Substitute Debtor**"), provided that:

- (a) the Substitute Debtor assumes all obligations of the Issuer under the Notes;
- (b) the Substitute Debtor is in a position to fulfil all payment obligations under the Notes in euro without being required by law to make any withholding or

kann, ohne gesetzlich zu einem Abzug oder Einbehalt von Steuern (wie in § 8 definiert) in dem Land oder Hoheitsgebiet, in dem die Nachfolgeschuldnerin ihren Sitz hat (mit Ausnahme von Steuern, die auch angefallen wären, wäre die Ersetzung nicht erfolgt), verpflichtet zu sein;

- (c) kein Kündigungsrecht gemäß § 5 aufgrund der Ersetzung der Emittentin durch die Nachfolgeschuldnerin ausgelöst wird;
- (d) die Emittentin unwiderruflich und unbedingt gegenüber den Gläubigern die Zahlung aller von der Nachfolgeschuldnerin auf die Schuldverschreibungen zahlbaren Beträge garantiert (die "**Ersetzungs-Garantie**");
- (e) die Nachfolgeschuldnerin sich verpflichtet, jedem Gläubiger sämtliche Steuern, Gebühren oder Abgaben zu erstatten, die ihm im Zuge der Ersetzung der Emittentin gemäß diesem § 10 auferlegt werden, vorausgesetzt, dass sich die Verpflichtung auf Beträge beschränkt, die der Gläubiger ohne die Ersetzung der Emittentin nicht hätte tragen müssen; und
- (f) der Hauptzahlstelle jeweils ein Rechtsgutachten bezüglich jeder betroffenen Rechtsordnung von anerkannten Rechtsanwälten vorgelegt wurden, die bestätigen, dass die Bestimmungen in den vorstehenden Unterabsätzen (a) bis (e) erfüllt wurden.

Für Zwecke dieses § 10 bezeichnet "**Verbundenes Finanzierungsunternehmen**" jedes verbundene Unternehmen im Sinne des § 15 AktG der Emittentin, dessen Geschäftszweck in der Aufnahme von Mitteln für die Refinanzierung von verbundenen Unternehmen besteht und die keine wesentlichen operativen Vermögenswerte oder Anteile an operativen Gesellschaften der Emittentin oder deren Tochtergesellschaften hält.

deduction for, any Taxes (as defined in § 8) levied by the country or jurisdiction in which the Substitute Debtor is domiciled (other than taxes which would also be levied in the absence of such substitution);

- (c) none of the issuer call rights specified in § 5 occurs as a consequence of the substitution of the Issuer by the Substitute Debtor;
- (d) the Issuer irrevocably and unconditionally guarantees in favour of each Holder the payment of all sums payable by the Substitute Debtor in respect of the Notes (the "**Substitution Guarantee**");
- (e) the Substitute Debtor undertakes to reimburse any Holder for such taxes, fees or duties which may be imposed upon such Holder in relation to the Substitution of Issuer in accordance with this § 10, provided that such undertaking shall be limited to amounts that would not have been imposed upon the Holder had such Substitution of Issuer not occurred; and
- (f) there shall have been delivered to the Principal Paying Agent one opinion for each jurisdiction affected of lawyers of recognized standing to the effect that subparagraphs (a) through (e) above have been satisfied.

For purposes of this § 10, "**Financing Affiliate**" shall mean any affiliated company (*verbundenes Unternehmen*) within the meaning of § 15 German Stock Corporation Act (*Aktiengesetz*) of the Issuer, which has the corporate function of raising financing and passing it on to affiliates and which holds no significant operating assets or has any ownership in the operating companies of the Issuer or its Subsidiaries.

(2) *Schuldbefreiung; Bezugnahmen.* Nach einer Ersetzung gemäß diesem § 10 gilt die Nachfolgeschuldnerin als in den Schuldverschreibungen an Stelle der Emittentin als Hauptschuldnerin bestimmt und die Schuldverschreibungen gelten als dementsprechend ergänzt, um der Ersetzung zur Durchsetzung zu verhelfen, und als das relevante Steuerhoheitsgebiet in Bezug auf § 8, ein Quellensteuer-Ereignis und ein Steuerereignis gilt sowohl die Jurisdiktion, in der die Nachfolgeschuldnerin steuerlich ansässig ist, als auch die Bundesrepublik Deutschland.

§ 3(1) gilt als insoweit angepasst, dass der Rang der Ansprüche aus den Schuldverschreibungen gleich bleibt.

Zudem beziehen sich die Bezugnahmen auf die Emittentin in § 4(8)(c)(i) und § 4(8)(c)(ii), in der Definition von Ratingagenturereignis und Akquisitionereignis weiterhin nur auf die Merck KGaA.

Die Bezugnahmen auf die Emittentin in § 4(8)(b)(iii), § 4(8)(c)(iv), § 4(8)(c)(v) und § 5(5) beziehen sich sowohl auf die Nachfolgeschuldnerin als auch auf die Merck KGaA.

Jede Ersetzung zusammen mit der Mitteilung gemäß Absatz (3) dieser Bestimmung befreit, im Fall der Einsetzung einer anderen Gesellschaft als Hauptschuldnerin, die Emittentin von allen Verbindlichkeiten, die sie als Hauptschuldnerin (nicht jedoch, zur Klarstellung, in Bezug auf die Ersetzungs-Garantie) unter den Schuldverschreibungen hatte.

(3) *Benachrichtigung der Gläubiger.* Spätestens 15 Geschäftstage nach Durchführung der Ersetzung wird die Nachfolgeschuldnerin dies den Gläubigern und, sollten die Schuldverschreibungen an einer Börse notiert sein, dieser Börse gemäß § 13 mitteilen und jede andere Person oder Stelle, gemäß den anwendbaren Gesetzen und Regelungen informieren.

(2) *Discharge from Obligations; References.* Upon a substitution in accordance with this § 10, the Substitute Debtor shall be deemed to be named in the Notes as the principal debtor in place of the Issuer as issuer and the Notes shall thereupon be deemed to be amended to give effect to the substitution including that the relevant Taxing Jurisdiction in relation to the Issuer in § 8, a Gross-up Event and Tax Event shall be the Substitute Debtor's country of domicile for tax purposes as well as the Federal Republic of Germany.

§ 3(1) is deemed to be amended insofar that the ranking of the Notes stays the same.

In addition, the references to the Issuer in § 4(8)(c)(i) and § 4(8)(c)(ii), in the definition of Rating Agency Event and Acquisition Event shall continue to refer only to Merck KGaA.

The references to the Issuer in § 4(8)(b)(iii), § 4(8)(c)(iv), § 4(8)(c)(v) and § 5(5) shall refer to the Substitute Debtor and Merck KGaA.

Any such substitution, together with the notice referred to in subparagraph (3) below, shall, in the case of the substitution of any other company as principal debtor, release the Issuer as issuer from all of its obligations as principal debtor (but not, for the avoidance of doubt, in relation to the Substitution Guarantee) in respect of the Notes.

(3) *Notification to Holders.* Not later than 15 Business Days after effecting the substitution, the Substitute Debtor shall give notice thereof to the Holders and, if any Notes are listed on any stock exchange, to such stock exchange in accordance with § 13 and to any other person or authority as required by applicable laws or regulations.

§ 11
**BESCHLÜSSE DER GLÄUBIGER, ÄNDERUNG
DER ANLEIHEBEDINGUNGEN,
GEMEINSAMER VERTRETER**

- (1) *Beschlüsse durch die Gläubiger.* Die Emittentin kann mit den Gläubigern Änderungen der Anleihebedingungen oder sonstige Maßnahmen durch Mehrheitsbeschluss der Gläubiger nach Maßgabe der §§ 5 ff. des Gesetzes über Schuldverschreibungen aus Gesamtemissionen ("**SchVG**") in seiner jeweils geltenden Fassung beschließen.

Eine Änderung der Anleihebedingungen ohne Zustimmung der Emittentin scheidet aus. Die Gläubiger können insbesondere einer Änderung wesentlicher Inhalte der Anleihebedingungen, einschließlich der in § 5 Absatz 3 SchVG vorgesehenen Maßnahmen durch Beschlüsse mit den in dem nachstehenden § 11(2) genannten Mehrheiten zustimmen. Ein ordnungsgemäß gefasster Mehrheitsbeschluss ist für alle Gläubiger gleichermaßen verbindlich.

- (2) *Mehrheit.* Vorbehaltlich des nachstehenden Satzes und der Erreichung der erforderlichen Beschlussfähigkeit, beschließen die Gläubiger mit der einfachen Mehrheit der an der Abstimmung teilnehmenden Stimmrechte. Beschlüsse, durch welche der wesentliche Inhalt der Anleihebedingungen, insbesondere in den Fällen des § 5 Absatz 3 Nr. 1 bis 9 SchVG, geändert wird oder sonstige wesentliche Maßnahmen beschlossen werden, bedürfen zu ihrer Wirksamkeit einer Mehrheit von mindestens 75 % der an der Abstimmung teilnehmenden Stimmrechte (eine "**Qualifizierte Mehrheit**").
- (3) *Beschlussfassung, Gläubigerversammlung.* Die Gläubiger können Beschlüsse in einer Gläubigerversammlung gemäß §§ 5 ff. SchVG oder im Wege einer Abstimmung ohne Versammlung gemäß § 18 und §§ 5 ff. SchVG fassen.
- (a) Die Teilnahme an der Gläubigerversammlung und die Ausübung der Stimmrechte sind von

§ 11
**RESOLUTIONS OF HOLDERS, AMENDMENT
OF THE TERMS AND CONDITIONS,
HOLDERS' REPRESENTATIVE**

- (1) *Resolutions of Holders.* The Issuer may agree with the Holders on amendments to the Terms and Conditions or on other matters by virtue of a majority resolution of the Holders pursuant to § 5 et seqq. of the German Act on Issues of Debt Securities (*Gesetz über Schuldverschreibungen aus Gesamtemissionen – "SchVG"*), as amended from time to time.

There will be no amendment of the Terms and Conditions without the Issuer's consent. In particular, the Holders may consent to amendments which materially change the substance of the Terms and Conditions, including such measures as provided for under § 5 paragraph 3 SchVG by resolutions passed by such majority of the votes of the Holders as stated under § 11(2) below. A duly passed majority resolution shall be binding equally upon all Holders.

- (2) *Majority.* Except as provided by the following sentence and provided that the quorum requirements are being met, the Holders may pass resolutions by simple majority of the voting rights participating in the vote. Resolutions which materially change the substance of the Terms and Conditions, in particular in the cases of § 5 paragraph 3 numbers 1 through 9 SchVG, or which relate to material other matters may only be passed by a majority of at least 75 % of the voting rights participating in the vote (a "**Qualified Majority**").
- (3) *Passing of resolution, Meeting.* The Holders can pass resolutions in a meeting (*Gläubigerversammlung*) in accordance with § 5 et seqq. SchVG or by means of a vote without a meeting (*Abstimmung ohne Versammlung*) in accordance with § 18 and § 5 et seqq. SchVG.
- (a) Attendance at the meeting and exercise of voting rights is subject to the Holders' registration. The registration must be

einer vorherigen Anmeldung der Gläubiger abhängig. Die Anmeldung muss unter der in der Bekanntmachung der Einberufung mitgeteilten Adresse spätestens an dem dritten Tag vor der Gläubigerversammlung zugehen. Mit der Anmeldung müssen die Gläubiger ihre Berechtigung zur Teilnahme an der Abstimmung durch einen in Textform erstellten besonderen Nachweis der Depotbank und durch Vorlage eines Sperrvermerks der Depotbank, aus dem hervorgeht, dass die betreffenden Schuldverschreibungen ab dem Tag der Absendung der Anmeldung (einschließlich) bis zum angegebenen Ende der Gläubigerversammlung (einschließlich) nicht übertragbar sind, nachweisen.

- (b) Zusammen mit der Stimmabgabe müssen die Gläubiger ihre Berechtigung zur Teilnahme an der Abstimmung ohne Versammlung durch einen in Textform erstellten besonderen Nachweis der Depotbank und durch Vorlage eines Sperrvermerks der Depotbank, aus dem hervorgeht, dass die betreffenden Schuldverschreibungen ab dem Tag der Stimmabgabe (einschließlich) bis zum letzten Tag des Abstimmungszeitraums (einschließlich) nicht übertragbar sind, nachweisen.

- (4) *Zweite Versammlung.* Wird für die Gläubigerversammlung gemäß § 11(3)(a) oder die Abstimmung ohne Versammlung gemäß § 11(3)(b) die mangelnde Beschlussfähigkeit festgestellt, kann – im Falle der Gläubigerversammlung – der Vorsitzende eine zweite Versammlung im Sinne von § 15 Absatz 3 Satz 2 SchVG und – im Falle der Abstimmung ohne Versammlung – der Abstimmungsleiter eine zweite Versammlung im Sinne von § 18 Absatz 4 S. 2 und § 15 Absatz 3 Satz 3 SchVG einberufen. Die Teilnahme an der zweiten Versammlung und die Ausübung der Stimmrechte sind von einer vorherigen Anmeldung der Gläubiger abhängig. Für die Anmeldung der Gläubiger zu einer

received at the address stated in the convening notice no later than the third day preceding the meeting. As part of the registration, Holders must provide evidence of their eligibility to participate in the vote by means of a special confirmation of the Custodian in text form and by submission of a blocking instruction by the Custodian stating that the relevant Notes are not transferable from and including the day such registration has been sent until and including the stated end of the meeting.

- (b) Together with casting their vote, Holders must provide evidence of their eligibility to participate in the vote without a meeting by means of a special confirmation of the Custodian in text form and by submission of a blocking instruction by the Custodian stating that the relevant Notes are not transferable from and including the day such vote has been cast until and including the day the voting period ends.

- (4) *Second Meeting.* If it is ascertained that no quorum exists for the meeting pursuant to § 11(3)(a) or the vote without a meeting pursuant to § 11(3)(b), in case of a meeting the chairman (*Vorsitzender*) may convene a second meeting in accordance with § 15 paragraph 3 sentence 2 SchVG or in case of a vote without a meeting the scrutineer (*Abstimmungsleiter*) may convene a second meeting within the meaning of § 18 paragraph 4 sentence 2 and § 15 paragraph 3 sentence 3 SchVG. Attendance at the second meeting and exercise of voting rights is subject to the Holders' registration. The provisions set out in § 11(3)(a) shall apply mutatis mutandis to Holders' registration for a second meeting

zweiten Versammlung gelten die Bestimmungen des § 11(3)(a) entsprechend.

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| <p>(5) <i>Gemeinsamer Vertreter.</i> Die Gläubiger können durch Mehrheitsbeschluss die Bestellung oder Abberufung eines gemeinsamen Vertreters (der "Gemeinsame Vertreter"), die Aufgaben und Befugnisse des Gemeinsamen Vertreters, die Übertragung von Rechten der Gläubiger auf den Gemeinsamen Vertreter und eine Beschränkung der Haftung des Gemeinsamen Vertreters bestimmen. Die Bestellung eines Gemeinsamen Vertreters bedarf einer Qualifizierten Mehrheit, wenn er ermächtigt werden soll, Änderungen des wesentlichen Inhalts der Anleihebedingungen oder sonstigen wesentlichen Maßnahmen gemäß § 11(2) zuzustimmen.</p> <p>(6) <i>Bekanntmachungen.</i> Bekanntmachungen betreffend diesen § 11 erfolgen ausschließlich gemäß den Bestimmungen des SchVG.</p> <p>(7) <i>Ersetzungs-Garantie.</i> Im Fall einer Schuldnerersetzung gemäß § 10 gilt dieser § 11 entsprechend für die Änderung der Ersetzungs-Garantie gemäß § 10(1)(c), und Änderungen der Anleihebedingungen und die Ersetzungs-Garantie sind nur mit Zustimmung der Nachfolgeschuldnerin und der Merck KGaA als Garantin zulässig.</p> | <p>(5) <i>Holders' Representative.</i> The Holders may by majority resolution provide for the appointment or dismissal of a holders' representative (the "Holders' Representative"), the duties and responsibilities and the powers of such Holders' Representative, the transfer of the rights of the Holders to the Holders' Representative and a limitation of liability of the Holders' Representative. Appointment of a Holders' Representative may only be passed by a Qualified Majority if such Holders' Representative is to be authorized to consent, in accordance with § 11(2) hereof, to a material change in the substance of the Terms and Conditions or other material matters.</p> <p>(6) <i>Notices.</i> Any notices concerning this § 11 shall be made exclusively pursuant to the provisions of the SchVG.</p> <p>(7) <i>Substitution Guarantee.</i> In the event of a substitution pursuant to § 10, this § 11 shall apply <i>mutatis mutandis</i> for an amendment of the Substitution Guarantee pursuant to § 10(1)(c), and the Terms and Conditions and such Substitution Guarantee may only be amended with the consent of the Substitute Debtor and Merck KGaA as guarantor.</p> |
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§ 12

BEGEBUNG WEITERER SCHULDVERSCHREIBUNGEN, ENTWERTUNG

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| <p>(1) <i>Begebung weiterer Schuldverschreibungen.</i> Die Emittentin ist berechtigt, jederzeit ohne Zustimmung der Gläubiger weitere Schuldverschreibungen mit gleicher Ausstattung (gegebenenfalls mit Ausnahme des Tags der Begebung, des Beginns des Zinslaufs und/oder des Ausgabepreises) in der Weise zu begeben, dass sie mit diesen Schuldverschreibungen eine einheitliche Serie (Gesamtemission) bilden.</p> <p>(2) <i>Entwertung.</i> Sämtliche vollständig zurückgezahlten Schuldverschreibungen sind unverzüglich zu entwerten und können nicht wiederbegeben oder wiederverkauft werden.</p> | <p>(1) <i>Further Issues.</i> The Issuer may from time to time, without the consent of the Holders, issue further Notes having the same terms and conditions as the Notes in all respects (or in all respects except for the issue date, commencement of the interest accrual period and/or issue price) so as to form a single series (<i>Gesamtemission</i>) with the Notes.</p> <p>(2) <i>Cancellation.</i> All Notes redeemed in full shall be cancelled forthwith and may not be reissued or resold.</p> |
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§ 12

FURTHER ISSUES, CANCELLATION

§ 13
MITTEILUNGEN

- (1) *Bekanntmachung.* Alle die Schuldverschreibungen betreffenden Mitteilungen, außer wie in § 11(8) vorgesehen, sind auf der Internetseite der Luxemburger Börse (www.bourse.lu) elektronisch zu veröffentlichen. Jede derartige Mitteilung gilt mit dem dritten Tag nach dem Tag der Veröffentlichung (oder bei mehrfacher Veröffentlichungen mit dem dritten Tag nach dem Tag der ersten solchen Veröffentlichung) als wirksam erfolgt.
- (2) *Mitteilungen an das Clearingsystem.* Solange Schuldverschreibungen an der Luxemburger Börse notiert sind, sind alle die Schuldverschreibungen betreffenden Mitteilungen gemäß Absatz (1) bekanntzumachen. Soweit die Mitteilung den Zinssatz betrifft, oder die Regeln der Luxemburger Börse dies sonst zulassen, kann die Emittentin eine Veröffentlichung nach Absatz (1) durch eine Mitteilung an das Clearingsystem zur Weiterleitung an die Gläubiger ersetzen; jede derartige Mitteilung gilt am siebten Tag nach dem Tag der Mitteilung an das Clearingsystem als den Gläubigern mitgeteilt.

§ 14
**ANWENDBARES RECHT, GERICHTSSTAND
UND GERICHTLICHE GELTENDMACHUNG**

- (1) Anwendbares Recht. Form und Inhalt der Schuldverschreibungen sowie die Rechte und Pflichten der Gläubiger und der Emittentin bestimmen sich in jeder Hinsicht nach deutschem Recht.
- (2) Gerichtsstand. Nicht ausschließlich zuständig für sämtliche im Zusammenhang mit den Schuldverschreibungen entstehenden Klagen oder sonstige Verfahren ("**Rechtsstreitigkeiten**") ist das Landgericht Frankfurt am Main.

Für Entscheidungen gemäß §§ 9 Absatz 2, 13 Absatz 3 und 18 Absatz 2 SchVG und für Entscheidungen über die Anfechtung von Beschlüssen der Gläubiger gemäß § 20 SchVG

§ 13
NOTICES

- (1) *Publication.* All notices concerning the Notes, except as stipulated in § 11(8), will be made by means of electronic publication on the internet website of the Luxembourg Stock Exchange (www.bourse.lu). Any notice will be deemed to have been validly given on the third day following the date of such publication (or, if published more than once, on the third day following the date of the first such publication).
- (2) *Notification to Clearing System.* So long as any Notes are listed on the Luxembourg Stock Exchange, subparagraph (1) shall apply. In the case of notices regarding the rate of interest or, if the rules of the Luxembourg Stock Exchange otherwise so permit, the Issuer may deliver the relevant notice to the Clearing System for communication by the Clearing System to the Holders, in lieu of publication as set forth in subparagraph (1) above; any such notice shall be deemed to have been given on the seventh day after the day on which the said notice was given to the Clearing System.

§ 14
**APPLICABLE LAW, PLACE OF
JURISDICTION AND ENFORCEMENT**

- (1) Applicable Law. The Notes, as to form and content, and all rights and obligations of the Holders and the Issuer, shall be governed by German law.
- (2) Submission to Jurisdiction. The District Court (Landgericht) in Frankfurt am Main shall have non-exclusive jurisdiction for any action or other legal proceedings ("**Proceedings**") arising out of or in connection with the Notes.

The relevant court specified in the SchVG shall have jurisdiction for all judgments pursuant to §§ 9(2), 13(3) and 18(2) SchVG and for all

ist jeweils das gemäß SchVG genannte Gericht zuständig.

- (3) *Gerichtliche Geltendmachung.* Jeder Gläubiger von Schuldverschreibungen ist berechtigt, in jedem Rechtsstreit gegen die Emittentin oder in jedem Rechtsstreit, in dem der Gläubiger und die Emittentin Partei sind, seine Rechte aus diesen Schuldverschreibungen im eigenen Namen auf der folgenden Grundlage zu schützen und geltend zu machen: (i) er bringt eine Bescheinigung der Depotbank bei, bei der er für die Schuldverschreibungen ein Wertpapierdepot unterhält, welche (a) den vollständigen Namen und die vollständige Adresse des Gläubigers enthält, (b) den Gesamtnennbetrag der Schuldverschreibungen bezeichnet, die zu dem Datum der Bescheinigung auf dem Wertpapierdepot verbucht sind und (c) bestätigt, dass die Depotbank gegenüber dem Clearingsystem eine schriftliche Erklärung abgegeben hat, die die vorstehend unter (a) und (b) bezeichneten Informationen enthält und von dem Clearingsystem bestätigt wurde; (ii) er legt eine Kopie der die betreffenden Schuldverschreibungen verbriefenden Globalurkunde vor, deren Übereinstimmung mit dem Original eine vertretungsberechtigte Person des Clearingsystems oder des Verwahrers des Clearingsystems bestätigt hat, ohne dass eine Vorlage der Originalbelege oder der die Schuldverschreibungen verbriefenden Globalurkunde in einem solchen Verfahren erforderlich wäre oder (iii) auf jede andere Weise, die im Lande der Geltendmachung prozessual zulässig ist. "**Depotbank**" bezeichnet jede Bank oder ein sonstiges anerkanntes Finanzinstitut, das berechtigt ist, das Wertpapierverwahrungsgeschäft zu betreiben und bei der/dem der Gläubiger ein Wertpapierdepot für die Schuldverschreibungen unterhält und die/das ein Konto beim Clearingsystem unterhält, einschließlich des Clearingsystems.

§ 15 SPRACHE

Diese Anleihebedingungen sind in deutscher Sprache abgefasst. Eine Übersetzung in die englische Sprache

judgments over contested resolutions by Holders in accordance with § 20 SchVG.

- (3) *Enforcement.* Any Holder of Notes may in any proceedings against the Issuer, or to which such Holder and the Issuer are parties, protect and enforce in his own name his rights arising under such Notes on the basis of (i) a statement issued by the Custodian with whom such Holder maintains a securities account in respect of the Notes (a) stating the full name and address of the Holder, (b) specifying the aggregate principal amount of Notes credited to such securities account on the date of such statement and (c) confirming that the Custodian has given written notice to the Clearing System containing the information pursuant to (a) and (b) which has been confirmed by the Clearing System; (ii) a copy of the Note in global form certified as being a true copy by a duly authorized officer of the Clearing System or a depository of the Clearing System, without the need for production in such proceedings of the actual records or the global note representing the Notes or (iii) any other means of proof permitted in legal proceedings in the country of enforcement. "**Custodian**" means any bank or other financial institution of recognized standing authorized to engage in securities custody business with which the Holder maintains a securities account in respect of the Notes and which maintains an account with the Clearing System, and includes the Clearing System.

§ 15 LANGUAGE

These Terms and Conditions are written in the German language and provided with an English language

ist beigefügt. Der deutsche Text ist bindend und maßgeblich. Die Übersetzung in die englische Sprache ist unverbindlich.

Die folgenden Absätze in Kursivschrift sind nicht Bestandteil der Anleihebedingungen.

Beschränkungen bezüglich der Rückzahlung und des Rückkaufs der Schuldverschreibungen

Die Emittentin beabsichtigt (ohne dadurch eine Rechtspflicht zu übernehmen) die Schuldverschreibungen nur zurückzuzahlen oder zurückzukaufen, soweit sie durch Instrumente mit zumindest gleichwertiger S&P Eigenkapitalanrechnung ersetzt werden. Als Ersatz gelten die Nettoerlöse, die die Emittentin oder eine Tochtergesellschaft der Emittentin aus dem Verkauf an Dritte von Wertpapieren erhält, die eine S&P Eigenkapitalanrechnung (oder eine vergleichbare Bezeichnung durch S&P) haben, die mindestens so hoch ist wie die Eigenkapitalanrechnung der Schuldverschreibungen, die diesen auf Basis der Anfänglichen Eigenkapitalanrechnungskategorie zugewiesen wurde (wobei Änderungen der Hybrid Rating Methodologie oder deren Auslegung seit dem Ausgabetag der Schuldverschreibungen berücksichtigt werden).

Es gelten jedoch folgende Ausnahmen in Bezug auf die Absicht der Emittentin. Es muss nicht für Ersatz gesorgt werden:

- (i) wenn das der Emittentin durch S&P erteilte Rating mindestens "A" (oder eine vergleichbare Bezeichnung durch S&P) beträgt und die Emittentin zuversichtlich ist, dass ein solches Rating infolge der Rückzahlung oder des Rückkaufs nicht unter diesen Wert fallen würde oder*
- (ii) im Fall eines Rückkaufs von Schuldverschreibungen in Höhe von weniger als (x) 10 % des ursprünglich ausgegebenen Gesamtnennbetrags der Schuldverschreibungen während einer Frist von 12 aufeinander folgenden Monaten oder (y) 25 % des ursprünglich ausgegebenen Gesamtnennbetrags der Schuldverschreibungen während einer Frist von 10 aufeinander folgenden Jahren oder*

translation. The German text shall be controlling and binding. The English language translation is provided for convenience only.

The following paragraph in italics does not form part of the Terms and Conditions.

Restrictions regarding redemption and repurchase of the Notes

The Issuer intends (without thereby assuming a legal or contractual obligation) that it will redeem or repurchase the Notes only to the extent they are replaced with instruments with at least equivalent S&P equity credit. The net proceeds received by the Issuer or subsidiary of the Issuer from the sale to third party purchasers of securities which are assigned an S&P equity credit (or such similar nomenclature then used by S&P) that is at least equal to the equity credit assigned to the Notes on the basis of the Initial Category of Equity Credit will count as replacement (but taking into account any changes in hybrid capital methodology or the interpretation thereof since the issue date of the Notes).

The following exceptions apply as to the Issuer's replacement intention. The Notes are not required to be replaced:

- (i) if the rating assigned by S&P to the Issuer is at least "A" (or such similar nomenclature then used by S&P) and the Issuer is comfortable that such rating would not fall below this level as a result of such redemption or repurchase, or*
- (ii) in the case of repurchase of less than (x) 10 % of the aggregate principal amount of the Notes originally issued in any period of 12 consecutive months or (y) 25 % of the aggregate principal amount of the Notes originally issued in any period of 10 consecutive years is repurchased, or*

- (iii) *im Fall der Rückzahlung der Schuldverschreibungen nach Eintritt eines Ratingagenturereignisses, eines Akquisitionserignisses, eines Steuerereignisses oder eines Quellensteuer-Ereignisses erfolgt oder*
- (iv) *wenn im Falle eines Rückkaufs von Schuldverschreibungen der Gesamtnennbetrag der zurückzukaufenden Schuldverschreibungen kleiner gleich der Betrag ist, um den der Höchstbetrag des Hybridkapitals der Emittentin, für den S&P im betreffenden Zeitpunkt eine Eigenkapitalanrechnung nach Maßgabe ihrer dann geltenden Methodologie zuordnet, überschritten wird.*
- (v) *wenn die Schuldverschreibungen keine "Eigenkapitalanrechnung" (oder eine solche von S&P zum Zeitpunkt der Rückzahlung oder des Rückkaufs dann verwendete gleichartige Klassifikation) aufweisen oder*
- (vi) *wenn die Rückzahlung oder der Rückkauf am oder nach dem Zweiten Step-up Tag erfolgt.*

Verwendete Begriffe, die im vorstehenden Satz nicht definiert wurden, haben dieselbe Bedeutung wie in den Anleihebedingungen.

- (iii) *if the Notes are redeemed following the occurrence of a Rating Agency Event, an Acquisition Event, a Tax Event or a Gross-up Event, or*
- (iv) *in the case of a repurchase of Notes, such repurchase relates to an aggregate principal amount of Notes which is less than or equal to the excess (if any) above the maximum aggregate principal amount of the Issuer's hybrid capital to which S&P then assigns equity content under its prevailing methodology, or*
- (v) *if the Notes are not assigned an "equity credit" (or such similar nomenclature then used by S&P at the time of such redemption or repurchase), or*
- (vi) *if such redemption or repurchase occurs on or after the Second Step-up Date.*

Terms used but not defined in the preceding sentence shall have the meaning set out in the Terms and Conditions.

DESCRIPTION OF MERCK AND THE MERCK GROUP

Formation, Company Name, Registered Office, Fiscal Year and LEI of Merck

Merck KGaA is the parent company of the Group.

Merck is a corporation with general partners (*Kommanditgesellschaft auf Aktien – KGaA*) organized under the laws of the Federal Republic of Germany, with its registered office at Frankfurter Strasse 250, 64293 Darmstadt, Germany. Merck can be reached by telephone on +49 6151 72-0.

Since July 18, 1995 Merck is recorded in the commercial register of the local court of Darmstadt, Germany, (docket number HRB: 6164) under its company name "MERCK Kommanditgesellschaft auf Aktien". Merck's fiscal year is the calendar year.

The Legal Entity Identifier ("LEI") of Merck KGaA is: 529900OAREIS0MOPTW25.

History

The history of the Group dates back to 1668, when Friedrich Jacob Merck purchased a pharmacy in Darmstadt, the Engel-Apotheke, which is still owned and operated by the Merck family today. With a history of nearly 350 years, the Group is one of the oldest chemical and pharmaceutical enterprises worldwide.

Merck was established in 1995 as a corporation with general partners (*Kommanditgesellschaft auf Aktien – KGaA*) by transferring a predominant part of the assets of E. Merck to Merck, whereby E. Merck became one of the general partners of Merck. At the time of the transfer, E. Merck was organized as a general partnership under German law (*offene Handelsgesellschaft – OHG*). In 1995, Merck placed about 26% of its total capital with investors in connection with its initial public offering and in 2007 completed a EUR 2 billion capital increase. On April 4, 2009, E. Merck was transformed from a general partnership (*offene Handelsgesellschaft – OHG*) into a limited partnership under German law (*Kommanditgesellschaft – KG*) ("**E. Merck**") with its registered office in Darmstadt, Germany. The incorporation of Merck for an indefinite term became effective with the registration of this spin-off and new formation in the commercial register of Darmstadt, Germany on July 18, 1995.

Business description

Overview

The Group is a leading science and technology enterprise in healthcare, life science and performance materials. More than 50,000 employees in 66 countries work to further develop technologies that improve and enhance life - from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions. The Group's research and development activities are mainly concentrated in Darmstadt (Germany), Boston (USA), Beijing (China) and Tokyo (Japan).

In fiscal year ended December 31, 2018, the Group posted net sales of EUR 14,836 million.

Group Structure

- The Healthcare Business Sector stands for innovative therapies focusing on people. Healthcare consists of the Biopharma and Allergopharma businesses. Prescription medicines - comprising mainly biopharmaceuticals - are used in neurodegenerative diseases, oncology, fertility, endocrinology, cardiometabolic diseases and general medicine.

In the fiscal year 2018, net sales of the Health Care Business Sector accounted for 42% of total net sales of the Group.

- The Life Science Business Sector has a broad product and technology portfolio and offers innovative solutions for the life science industry. The business sector's products and services are used in the research, development and manufacture of biotechnological and pharmaceutical drug therapies and for general laboratory applications. In addition, the Group's products and services also reach adjacent markets such as the food and beverage industry.

In the fiscal year 2018, net sales of the Life Science Business Sector accounted for 42% of total net sales of the Group.

- The Performance Materials Business Sector comprises the Group's entire specialty chemicals business. It offers high-tech performance chemicals for applications in fields such as consumer electronics, lighting, coatings, printing technology, plastics and cosmetics.

In the fiscal year 2018, net sales of the Performance Materials Business Sector accounted for 16% of total net sales of the Group.

The following provides an overview of the business sectors' key performance indicators for the fiscal years 2018 and 2017 and the first three months periods ended 31 March 2019 and 2018:

	Three-month period ended March 31,		Fiscal year ended December 31,	
	2019	2018 ¹	2018	2017 ¹
	<i>(unaudited)</i>		<i>(audited)</i>	
<i>(EUR in million)</i>				
Health Care				
Net sales ²	1,481	1,435	6,246	6,190
EBIT ^{2,3*}	128	195	731	1,337
EBITDA pre ^{2,4*}	332	381	1,556	1,773
Business free cash flow ^{5*}	222	299	1,025	1,314
Life Science				
Net sales ²	1,661	1,487	6,185	5,882
EBIT ^{2,3*}	313	273	1,036	834
EBITDA pre ^{2,4*}	516	455	1,840	1,786
Business free cash flow ^{5*}	268	375	1,393	1,402

	Three-month period ended March 31,		Fiscal year ended December 31,	
	2019	2018 ¹	2018	2017 ¹
	<i>(EUR in million)</i>			
	<i>(unaudited)</i>		<i>(audited)</i>	
<u>Performance Materials</u>				
Net sales ²	604	564	2,406	2,446
EBIT ^{2,3*}	95	136	508	689
EBITDA pre ^{2,4*}	193	196	786	980
Business free cash flow ^{5*}	172	137	588	906

* Not defined by International Financial Reporting Standards (IFRS).

1 Fiscal 2017 and Q1 2018 have been adjusted for effects from new accounting standards and other presentation and measurement changes.

2 The net sales refer to the continuing business areas of the Merck Group. Net sales of the Consumer Health business for the financial year 2018 were no longer reported in Group sales, as this business was to be classified as a discontinued operation pursuant to IFRS 5 during 2018 and sold as of December 1, 2018. Figures for fiscal year 2017 were adjusted accordingly.

3 "EBIT" is defined as a key figure for earnings before interest and taxes on income. Equals the operating result.

4 "EBITDA pre" excludes in addition to EBITDA specific income and expense of a one-time nature such as integration and restructuring costs, acquisition-related items, and other one-time items.

5 Business free cash flow is defined as "EBITDA pre" less investments in property, plant and equipment, software, advance payments for intangible assets, changes in inventories, trade accounts receivable as well as receivables from royalties and licenses.

The following table provides a regional breakdown of the Group's sales for the fiscal years 2018 and 2017:

	Fiscal year ended December 31,	
	2018 ²	2017 ^{1,2}
	<i>(in percent of net sales, unless otherwise indicated)</i>	
	<i>(audited)</i>	
Net Sales (in EUR million).....	14,836	14,517
Europe	31%	30%
North America.....	26%	26%
Asia Pacific.....	33%	33%
Middle East & Africa.....	4%	4%
Latin America.....	6%	7%

1 Figures for fiscal year 2017 have been adjusted for effects from new accounting standards and other presentation and measurement changes.

2 The net sales refer to the continuing business areas of the Merck Group. Net sales of the Consumer Health business for the financial year 2018 were no longer reported in Group sales, as this business was to be classified as a discontinued operation pursuant to IFRS 5 during 2018 and sold as of December 1, 2018. Figures for fiscal year 2017 were adjusted accordingly.

Known Trends affecting the Business of the Group

The Group has identified the following global megatrends that are most likely to affect the Group going forward:

- *Growing world population and general increase in life expectancy*: Merck is expecting that the growing world population and general increase in life expectancy will drive the demand for its healthcare products and the demand for the products and services offered by its Life Science sector, which are used in the research, development and manufacture of biotechnological and pharmaceutical drug therapies and for general laboratory applications.
- *Technology megatrends (Internet of Things, mobility, connectivity and big data)*: Merck is expecting that market trends such as mobility, Big Data and the Internet of Things will lead to higher demand for semiconductor materials and higher specialization at the same time. With its Performance Materials Business, Merck believes it is well positioned to participate in these trends.

Principal Industries

The Group aspires to be a successful player in the biopharmaceutical, life science tools and specialty chemicals industries with leading positions in attractive segments of these sectors.

To achieve this, the Group is building on established brands in all of its businesses and focuses its investments to benefit from global megatrends such as a growing world population, general increase in life expectancy and technology market trends such as mobility, Big Data and the Internet of Things. The following focus areas are targeted by the individual businesses:

- *Healthcare*: The business sector comprises the two businesses Biopharma and Allergopharma.
 - *Biopharma* discovers, develops, manufactures and markets innovative pharmaceutical and biological prescription drugs to treat cancer, multiple sclerosis, infertility, growth disorders as well as certain cardiovascular and metabolic diseases.
 - *Allergopharma*: high-dose hypoallergenic products for specific immunotherapy and diagnosis of type 1 allergies (such as hay fever or allergic asthma).
- *Life Science*: products and services for the life science industry which are used in the research, development and manufacture of biotechnological and pharmaceutical drug therapies, as well as in research and application laboratories. In addition, Merck's products and services also reach adjacent markets such as the food and beverage industry.
- *Performance Materials*: high-tech performance chemicals and liquid crystal mixtures for applications in the fields of consumer electronics, integrated circuits, lighting, coatings, printing, plastics, and cosmetics. The Group has been – according to its own estimates – the market leader in liquid crystal mixtures for many years.

Healthcare

As of March 2019, the Healthcare Business Sector comprises the two businesses Biopharma and Allergopharma as well as certain service activities for third parties related to divestitures of the Group. In 2018, Healthcare generated 42% of Group sales and 37% of EBITDA pre (excluding Corporate and Other), making it the largest of the three business sectors in terms of sales. The regions Europe and North America generated 58% of Healthcare's net sales in 2018. In recent years, Merck has steadily

expanded its presence in growth markets. In 2018, Asia-Pacific and Latin America accounted for 35% of sales. On December 1, 2018, Merck finalized the sale of its Consumer Health business, which was previously part of the Healthcare Business Sector, to Procter & Gamble.

Biopharma

Overview

The Group's Biopharma business discovers, develops, manufactures and markets innovative pharmaceutical and biological prescription drugs to treat cancer, multiple sclerosis, infertility, growth disorders as well as certain cardiovascular and metabolic diseases. Biopharma is the larger of Merck's Healthcare businesses. The Biopharma business operates in four franchises: Oncology, Neurology & Immunology, Fertility, General Medicine & Endocrinology. The streamlined R&D pipeline positions the Group with a clear focus on becoming a leading specialty innovator in oncology, immuno-oncology and immunology, including multiple sclerosis.

Main Products

Biopharma's products are primarily prescribed by specialists and sales are dominated by drugs manufactured using biotechnology.

Neurology and Immunology: Merck develops innovative treatments to help manage neurodegenerative diseases such as multiple sclerosis ("MS"). By the end of 2018, Merck had received regulatory approvals for Mavenclad[®] in 40 countries. Together with the well-established interferon beta therapy Rebif[®], Mavenclad[®] is a complementary new treatment option in Merck's MS product portfolio. Further development programs for neurology and immunology include evobrutinib as a potential treatment for multiple sclerosis, systemic lupus erythematosus as well as rheumatoid arthritis; atacicept as a potential treatment option for lupus patients with high disease activity; and sprifermin as a potential therapy for patients with osteoarthritis of the knee. On March 7, 2018, Merck announced that the Phase IIB study of evobrutinib has met its primary endpoint.

Oncology is focused on developing novel cancer-specific therapies that provide beneficial therapeutic outcomes and create new options for cancer patients. Erbitux[®] (cetuximab) remains the second best-selling drug in the portfolio of the Biopharma business and is the Group's flagship product in oncology. The product is a standard of care for patients with epidermal growth factor receptor ("EGFR")-expressing, RAS wild-type metastatic colorectal cancer ("mCRC") therapy, as well as both recurrent / metastatic and locally advanced squamous cell carcinoma of the head and neck ("SCCHN").

Immuno-oncology: Through the strategic alliance with Pfizer Inc., the Biopharma segment has continued to make progress in the development of avelumab, an investigational fully human anti-programmed death-ligand 1 ("PD-L1") antibody. Merck and Pfizer Inc have received 46 regulatory approvals for avelumab under the brand name Bavencio[®].

Merck, together with Pfizer, continues to explore the therapeutic potential of avelumab in a large clinical development program known as JAVELIN where more than 9,000 patients are evaluated across more than 15 different tumor types. Furthermore, Merck has entered into several strategic collaborations to evaluate the efficacy of avelumab in combination with other therapies:

In November 2017, Merck and Pfizer announced that the Phase III JAVELIN Gastric 300 trial did not meet its primary endpoint. This does not have any impact on current Bavencio approvals. Yet, the data will be further examined to better understand the results. In September 2018 Merck announced positive

top-line results from the pivotal Phase III JAVELIN Renal 101 study evaluating avelumab in combination with Inlyta® (axitinib), compared with Sutent® (sunitinib) as initial therapy for patients with advanced renal cell carcinoma (RCC). In December 2018 Merck and Pfizer announced that the data from an interim analysis of the Phase III JAVELIN Ovarian 100 study evaluating avelumab in combination with and/or following platinum-based chemotherapy in previously untreated patients with ovarian cancer did not support the study's initial hypothesis. A decision was made to terminate this trial.

Merck entered into various new strategic collaborations in 2018 to develop new treatment options with avelumab. These include Vyriad, Leap Therapeutics, Checkmate Pharmaceuticals (together with Pfizer), Immutep, Kyowa Hakko Kirin and Immunicum.

On February 5, 2019 Merck and GlaxoSmithKline plc (GSK) agreed on a collaboration in immuno-oncology. The two companies will jointly develop and commercialize M7824, a bifunctional fusion protein developed by Merck.

Fertility is an important growth driver for the Biopharma business, offering products that help couples to conceive a child, ranging from drugs to technologies. Infertility has become a key topic globally due to the trend towards delaying childbirth. On top of that, demand in growth markets is steadily increasing, fuelling sales. In addition, Merck is facing a rapidly changing environment in the fertility market, changes in competitive environment trending towards increased price pressure in the drugs business, more educated patients and an increasing importance of technologies in fertility. The innovative strategic objective of the Fertility business is to develop from the world market leader in fertility drugs into an integrated fertility treatment partner. Merck therefore focuses on turning these trends into opportunities to achieve further growth. The first step to achieve this goal was to complement the existing drug portfolio with a continuously expanding innovative technologies offering, such as the launch of connectivity platform QBOX IVF, which streamlines the data transfer between lab instruments and electronic medical records, improving data management across the clinic and the launch of Geri® Assess 2.0, which extends our innovative software portfolio, enabling automatic detection of key events in embryo and blastocyst development.

General Medicine & Endocrinology is the largest business franchise of the Healthcare segment in terms of sales, contributing significantly to the overall profitability of Biopharma and Merck. Although no longer patent-protected, the brand equity built over decades make Merck's products cornerstones for the treatment of chronic cardiovascular, metabolic and endocrine diseases. Today Concor® (leading beta-blocker for chronic cardiovascular diseases), Euthyrox® (leading treatment for hypothyroidism), Glucophage® (first-line treatment of type 2 diabetes), and Saizen® (treatment of growth hormone deficiency) are high-value brands and market leaders in many key markets around the world.

Research and Development

In 2018, Healthcare spent EUR 1,686 million in R&D, the majority of which relates to the Biopharma Segment. In addition to in-house research, Biopharma is committed to building long-term relationships with external partner companies, academic institutions and collaborative groups in order to enhance the productivity of its drug discovery activities, providing greater access to innovative and emerging technologies. The business is also seeking to strengthen its franchises by in-licensing clinical stage compounds.

Along with the sustained effort to foster an environment of end-to-end development – from early research to late stage development and product registration – there is a resolute commitment to ensure

that the patient's needs are the primary driver in all decision making. A patient-centric approach to R&D is increasingly inherent across Biopharma, from research of the highest-quality through to quick and efficient clinical development. Across the continuum of R&D, there is a renewed energy to build a solution-oriented, collaborative and accountable culture that delivers value to the business and to patients. With an unwavering focus on world-class science, and the development of strategic external opportunities, Biopharma R&D aims to accelerate its pipeline.

In research, the early phases of discovery remain structured across three distinct yet closely aligned Translational Innovation Platforms ("**TIPs**"): Oncology, Immuno-Oncology and Immunology as the core focus areas of expertise.

With four global hubs in Darmstadt, Germany, Boston, Massachusetts, USA, Tokyo, Japan, and Beijing, China, the broad footprint of Biopharma provides access to innovation in its key markets. Across the spectrum of biopharma – from academia, to hospitals, to research institutions, and to other companies in the biopharmaceutical industry – Biopharma complements its internal expertise by leveraging the experience and knowledge of others through partnerships. With a forward-looking view, Biopharma's R&D organization is positioning itself for future success. Strong collaboration, an unwavering commitment to exceptional science and a focus on objective decision making are the key principles that will guide the R&D teams going forward.

Allergopharma

Overview

Merck's allergy business Allergopharma is one of the leading companies in the field of allergy immunotherapy ("**AIT**"). The Allergopharma portfolio includes a diverse spectrum of approved allergen products that meet high quality standards. AIT (hypo-sensitization, desensitization, specific immunotherapy) is the only causal therapy for treating allergies to unavoidable allergens.

Main Products

The Group manufactures products to diagnose and treat type 1 allergies such as allergic rhinitis (for example hay fever) or allergic asthma. Merck's allergy business offers high-dose, hypoallergenic, standardized products for allergen immunotherapy of pollen and mite allergies. These allergoids have a special focus in Allergopharma's product portfolio and constitute a cornerstone in its integrated health approach for patients suffering from these conditions. For effective treatment, reliable diagnosis is key. Allergopharma offers a broad range of diagnostics in the field of allergies, providing physicians with the specific tools needed to identify the substances causing an allergy. Products of Allergopharma are available in European countries and in China.

Research & Development

With its own research department and in cooperation with research institutes and other partners, Allergopharma is developing a better understanding of the immunological mechanism that underlies the development of allergies and is working on the next generation of drugs for allergen immunotherapy.

Life Science

Overview

In the Life Science business sector, Merck serves more than 1.6 million customers in academia, biotech and pharma – helping them to deliver the promise of their work better, faster and safer. As a leading player in the global life science industry, the business sector offers innovative solutions for scientists and engineers at every stage. The more than 300,000 products range from lab water systems to genome-editing tools, antibodies and cell lines, as well as end-to-end bioprocessing systems to support the manufacturing needs of both emerging biotech and large pharma. In addition, the products and services also serve adjacent markets such as the food and beverage industry.

After successfully orchestrating the largest acquisition in the history of Merck, the Life Science business sector redesigned its organizational structure in the second quarter of 2017 to capture growth opportunities even more nimbly and to align the entire organization to optimally contribute to and capitalize on the strength of Merck Group. Strategic Marketing & Innovation units and commercial teams have been streamlined into three distinct business units - Research Solutions, Process Solutions and Applied Solutions - each designed to increase agility and drive sustained entrepreneurship to better serve its customers.

The Life Science business sector generates recurring sales and stable, attractive cash flows in an industry characterized by stringent regulatory requirements. A highly diversified and loyal customer base additionally ensures a low-risk profile. Merck benefits from a broad and relevant portfolio, a highly efficient supply chain that includes a superb eCommerce platform and global reach. In 2018, Life Science generated 42% of Group sales as well as 44% of EBITDA pre (excluding Corporate and Other).

Business Units

Research Solutions serves customers focused on identifying and developing new therapies. Merck offers a broad and relevant portfolio of solutions that enables scientific discovery through collaborative partnerships across the customer journey. This includes more than 200,000 products and services, including molecular platforms, protein and pathway technologies, biochemicals, materials science and cell culture workflow tools. In May 2017, the Group acquired Grzybowski Scientific Inventions for its revolutionary computer-aided retro-synthesis software that optimizes productivity and organic synthesis. The technology, now marketed as Synthia™, complements the Group's leading e-commerce platform and chemistry portfolio of more than 400,000 building blocks, catalysts and reagents for chemical syntheses.

Process Solutions delivers end-to-end products and expertise to customers who take what is developed in labs and manufacture it. Merck offers a diverse range of products to pharmaceutical and biotechnology companies that enables customers to develop large- and small-molecule drugs safely, effectively and cost-efficiently. The 15,000-plus products and services in this business unit include single-use manufacturing, filtration, chromatography and purification, virus reduction, pharma and biopharma raw materials, drug delivery compounds and engineering and validation services. In August 2017, the single-use chromatography portfolio was boosted with the agreement to acquire Matrix Separations, a provider of hydrogel membrane products based in Ontario, Canada. The acquisition complements Merck's efforts to drive next-generation bioprocessing, ultimately enabling faster and more efficient technology for customers.

Applied Solutions supports customers in their efforts to ensure that drugs, food and beverages are safe for consumption. Merck provides trusted products and comprehensive workflow solutions that streamline processes, lower costs and deliver consistent, reliable results. The 62,000-plus products and services include analytical separation systems, reference materials, lab water instruments with consumables and services, and microbiology and bio-monitoring testing materials. The Life Science business sector reinforced its commitment to food safety with the acquisition of BioControl Systems Inc. in January 2017, offering customers a complete workflow solution for food pathogen testing. BioControl's established rapid-detection technology and third-party-validated testing platforms complement the current portfolio of instruments and consumables. The acquisition strengthens Merck's ability to help customers protect the global food supply by providing an extensive portfolio of state-of-the-art testing technology.

Research & Development

In the Life Science business sector, Merck invests significantly in R&D, with more than 1,750 employees working in various R&D functions around the world. In 2018, Merck continued to focus on delivering the promise of accelerating access to health for people everywhere. The business sector in 2018 launched 13,000 products, including 6,000 chemicals, while aiming to:

- Improve and expand the portfolio
- Invest in new and disruptive technologies for the long term
- Partner with the global scientific community
- Meet customer needs

As an example, in 2018, Merck was awarded nine patents with regards to its CRISPR genome editing technology.

Performance Materials

Overview

The Performance Materials Business Sector comprises Merck's entire specialty chemicals business. The portfolio includes high-tech chemicals for applications in fields such as consumer electronics, lighting, coatings, printing technology, paints, plastics, and cosmetics. Since April 1, 2018, Performance Materials comprises three business units: Display Solutions, Semiconductor Solutions and Surface Solutions. In 2018, the Performance Materials business sector's share of Group sales amounted to 16% and its share of EBITDA pre (excluding Corporate and Other) was 19%. The EBITDA pre-margin amounted to 32.7% of net sales.

Business Units

Display Solutions comprises the liquid crystals, OLED (organic light-emitting diodes), photoresists and liquid crystal windows businesses. Even though competition has intensified, the Group considers itself as the global market and technology leader in the display materials business in 2018. Modern, energy-efficient technologies such as UB-FFS (ultra-brightness fringe-field-switching) have further established themselves in the market. The Group has secured projects in the area of large-surface displays and for high-resolution mobile devices for its product offerings of the newly launched XtraBright™ brand.

Semiconductor Solutions, the second-largest business unit in Performance Materials, supplies products for integrated circuits, Microelectronic systems, for antireflection coatings, and for the miniaturization

of transistor structures. Deposition materials and conductive pastes for semiconductor packaging round off the portfolio. The Group is continuously looking for new materials for metallization processes with low resistance and various dielectric characteristics for faster or better processors, servers and data storage density.

Surface Solutions aims at helping customers with the Group's materials and solutions to make innovative surfaces of all kinds more beautiful, more resistant or more intelligent. The Group's pearlescent pigments enable automotive coatings, cosmetics, packaging, innovative product design and even unique food creations. With its functional solutions the Group serves a large number of innovative applications, from dirt-repellent and easycare surfaces through to laser markings of plastic parts and cables. On October 26, 2018 the Surface Solutions business unit announced that it would align itself even more closely with the needs of its markets. The future business areas of Surface Solutions will be automotive coatings, cosmetic solutions and industrial solutions.

Research & Development

In 2018, R&D expenditures amounted to EUR 242 million, which is equivalent to 10% of Net Sales. R&D activities of Performance Materials are conducted by approximately 1,050 employees and primarily located in Germany, Japan, the US, Korea, UK, Taiwan, China, France, and Israel.

In 2018, the part of Performance Material's R&D activities that is not close to the products in the business units was combined in the central innovation unit "Early Research & Business Development". The goals of the Group in taking this step were to sharpen focus on customers' needs as well as to centrally decide on the assessment of projects and the related use of resources as part of an integrated approach to research and development. The unit develops a technology vision for Performance Materials and supports the business units in identifying projects with growth potential and tapping new markets. The Group evaluates the economic success of its projects and expands its activities to encompass neighboring areas in growing markets.

Investments

Except for the proposed acquisitions of Intermolecular, Inc. and Versum Materials, Inc., both as described under "*Recent Developments*" below, Merck has made no material investments since the date of its last published financial statements and, as at the date of this Prospectus, its management has made no firm commitments on such material investments in the future.

Risk Management

Risk management within the Group is described for all risk owners in detailed guidelines. These define the principles of risk management, outline roles and responsibilities, and help those responsible to implement the legal and operational requirements. Specific terminology and standard risk reports harmonize the risk management process worldwide. Regular risk reports are submitted to the Executive Board on a bi-annual basis. Furthermore, significant changes in the assessment of the risks already known and new significant risks shall be reported at any time and are communicated to the corporate bodies on an ad hoc basis. The internal auditing department reviews the risk management system on a regular basis.

Intellectual Property Rights

The Group endeavors to protect its products on a worldwide basis in countries where appropriate with patents, trademarks and other intellectual proprietary rights, in order to safeguard its investments,

particularly in R&D, but also in production and marketing. The Group aims to achieve the highest possible level of protection for its product developments and an intensive life-cycle management system in all key markets, especially Europe, the United States and Japan. The Group also endeavors to patent new processes and production procedures, secondary indications, active ingredient combinations and preparations for new and existing products. In the case of approved active pharmaceutical ingredients, the data exclusivity granted in the key industrialized countries and regions (i.e. United States, Japan and Europe) to protect the regulatory documentation is another important factor in the protection of products and investments.

Patents

Patent protection is available in most industrialized countries for both new active ingredients and the products that contain them, and for the indications, galenic specialties, such as formulations and manufacturing procedures, among others. The Group monitors its competitors and follows up any patent infringements. To compensate for the lengthy development times of pharmaceutical products resulting from the drug regulatory procedures, various countries have introduced laws to extend the term of pharmaceutical patents and grant the regulatory documentation special protection (data exclusivity). It has been possible for several years now to extend the normal terms of patents for pharmaceutical products by up to five years in the United States and Japan. A similar system (supplementary protection certificates) with the same maximum term of up to five years was introduced in the European Union in 1993. The Group takes advantage of these laws insofar as it seems reasonable and is feasible and applies for patent extensions or supplementary protection certificates.

In the Group's Biopharma business, the top-selling and thus most important products in 2018 were Rebif[®], Erbitux[®], Gonal-f[®], Concor[®], Glucophage[®], Glucovance[®] and Saizen[®]. Some of the patents for these products remain active. Moreover, the Group's Biopharma business has started to launch and commercialize Bavencio (oncology) and Mavenclad (multiple sclerosis) two new innovative products.

In the Group's Life Science business sector, marketed products and products in development for the life science technologies business field are currently protected by around 700 patent families. The universe was expanded after integration of Sigma Aldrich. An important technology is the CRISPR technology which includes all reagents needed for genome editing as well as a comprehensive service offering. Several patents with regards to the CRISPR technology were awarded to the Group in 2018.

The protection of the products of the Group's Performance Materials Business Sector by currently more than 2,500 patent families is extremely important. These patents relate to both individual chemical substances and to mixtures and components of mixtures for special applications up to and including finished displays with enhanced features. The Group owns patents for high-tech liquid crystal mixtures – for example for the polymer-stabilized vertical alignment or in-plane switching LCD technologies now used in LCD televisions. The Group holds more than 1,000 patents and patent applications worldwide in the field of effect pigments for the automotive, plastics, printing and cosmetics industry, and in the field of functional pigments, which protect pigments specially developed for certain applications (automotive paints, printing inks, security markings, cosmetics, drugs) or with certain properties (electrical conductivity, the ability to absorb heat and UV radiation, laser-markability). Furthermore, the Group holds more than 2,000 patents and patent applications relating to the legacy AZ business. Those patents mostly protect process chemicals or their application for the Optronics and Integrated Circuit markets or reagents, fine chemicals and the like. The Group considers this to be a key success factor.

Licenses

In addition to selling products from its own research and development pipeline, the Group generates significant merchandise sales by licensing products from other manufacturers. Licensing products to other companies is also becoming increasingly significant for the Group in order to ensure a long-term commitment to developing and marketing future products from the Group's R&D pipeline on a global basis.

A comparison covering several years shows an above-proportionate increase in the percentage of licensed products to products developed by the Group itself. The Group is a licensee who is present in all major global sales markets and has an efficient distribution system and marketing know-how.

Licensing is in particular important for the Group's Biopharma business. Also, in the Life Science business sector licensing in is a valuable tool to establish a broad product portfolio for customers in the R&D area. On the other hand, cross-licensing with partners in the field of liquid crystals is of limited importance. There are only few licenses of particular importance held by the Group in its Performance Materials Business Sector.

While the management of the Group considers the licenses to be collectively important for the businesses, generally speaking, there is, with one exception, no license or group of licenses of a single licensor that is so important that the Group would be dependent on single licenses or licensors and termination of that license would have a material adverse effect on the Group's business. The exception is Erbitux®, which was in-licensed from ImClone Systems, Inc. (now Eli Lilly) in 1998 and is one of Biopharma's main products. In this case, dependency exists on the part of the Group, so that a discontinuation of this license would have a severe impact on its oncology business.

The most important licensed products, the respective licensors (in-license) or licensee (out-license), the licensed territory and the area of application, excluding in-licensed and out-licensed development projects, are summarized in the following table:

	<u>Licensor / Licensee</u>	<u>Licensed territory</u>	<u>Area of application or indication</u>
Erbitux®(In-license)	Eli Lilly (former ImClone Systems, Inc.)	Profit share Japan	Oncology (various cancer types)
Erbitux®(In-license)	BMS	Royalties Japan	Oncology (various cancer types)
Avonex® / Plegridy® (Out-license)	Biogen	US and Canada	Multiple Sclerosis
Avonex® / Plegridy® (In-license)	YEDA / Weizman	US and Canada	Multiple Sclerosis
Viiibryd® (Out-license)	Allergan	US	Antidepressant
Rebif® NF (In-license)	GSK	Worldwide	Multiple Sclerosis
Mavenclad® (In-license)	Teva (Ivax)	Worldwide	Multiple Sclerosis
Xalkori® (In-license)	Pfizer	US, CA, DE, FR, GB, ES, IT, JP, ARG, TUR, CHN	Oncology
Bavencio® (Out-license)	Pfizer	Worldwide	Oncology

In-licensed or out-licensed development projects in the pharmaceutical field, i.e., potential products of the future that are not yet fully developed, are also important in terms of licensing activities. Examples include: TGF- β Trap molecule; IL 17 A-F nanobody; atacept and sprifermin. Other important alliances covering various projects were established with Vertex, F-Star and Intrexon.

In case of out-licensing the products are being developed worldwide together with or independently by major partners of the pharmaceutical industry. The Group participates in their success by way of milestone and royalty payments. Out-licensing is of minor relevance in the Performance Materials and Life Science Business Sectors.

Material Contracts

Multicurrency Revolving Credit Facility

The Group has a EUR 2.0 billion multicurrency revolving credit facility, established in March 2013. It was renewed in 2018 and is in place until 2023 to cover any unexpected cash needs. The facility is a pure back-up credit facility and has not been drawn as of the date of this Prospectus.

Notes issued under the EMTN Program of the Group (the "EMTN-Program")

In the fiscal years 2009, 2010 and 2015, Merck Financial Services GmbH ("**Merck FS**") issued notes under the EMTN-Program with a principal amount of EUR 6,000 million (EUR 3,300 million of which have already been repaid) on the Eurobond market. Merck KGaA guarantees these notes which are listed on the Luxembourg Stock Exchange.

Issuer	Principal amount in EUR millions	Maturity
Merck FS	1,350	March 24, 2020
Merck FS	800	September 2, 2019
Merck FS	550	September 1, 2022

In addition, Merck FS distributed three tranches of notes under the Program in a total amount of EUR 230 million (EUR 160 million of which have already been repaid) by way of private placements in 2009. All tranches are guaranteed by Merck.

Issuer	Principal amount in EUR millions	Maturity
Merck FS	70	December 10, 2019

USD Bonds

In 2015, EMD Finance LLC, a wholly-owned subsidiary of Merck KGaA, issued a total of USD 4,000 million (USD 650 million of which have already been repaid) in fixed and floating rate notes with varying maturities each with an unconditional and irrevocable guarantee from Merck KGaA.

Issuer	Principal amount in USD millions	Maturity
EMD Finance LLC	750	March 19, 2020
EMD Finance LLC	1,000	March 19, 2022
EMD Finance LLC	1,600	March 19, 2025

Hybrid Bonds

In December 2014, Merck KGaA has issued subordinated hybrid bonds in an aggregated principal amount of EUR 1,000 million with a first call date in 2021 and final maturity in 2074 and EUR 500 million with a first call date in 2024 and a final maturity in 2074.

Issuer	Principal amount in EUR millions	First Call Date / Maturity Date
Merck KGaA	1,000	December 12, 2021 / December 12, 2074
Merck KGaA	500	December 12, 2024 / December 12, 2074

Commercial Paper Program

In order to meet short-term capital requirements, the Group established a commercial paper program in 2011 with a volume of up to EUR 2.0 billion (or its equivalent in other currencies). As of December 31, 2018, the utilisation under the commercial paper program amounted to EUR 113 million including accrued interest.

Bilateral Loan Agreements

Merck respectively, Merck FS, have agreed on bilateral loan agreements with several banks in an amount of EUR 1,350 million. As of the date of this Prospectus, these lines have been fully drawn. On top of that, the Group can access various additional credit lines totalling EUR 600 million. As of December 31, 2018, these lines remained unutilized.

Syndicated Term Loan Facilities Agreement to finance the Versum Acquisition

On March 25, 2019, the Issuer and Merck Financial Services GmbH entered into a USD 6.3 billion term loan facilities agreement arranged by Bank of America Merrill Lynch, BNP Paribas Fortis and Deutsche Bank AG and with a syndicate of banks as lenders comprising two tranches. One of the tranches (USD 4.02 billion) is structured as bridge financing which is envisaged to be replaced by other financing sources (such as cash, bonds (including the Notes) and commercial paper) until closing of the Versum Acquisition (as described under "*Recent Developments*" below). The term loan facilities serve primarily to finance the Versum Acquisition, including (i) refinancing, repayment or repurchasing of any financial indebtedness incurred by Versum Materials, Inc. or any of its subsidiaries and (ii) financing of any appraisal rights of dissenting shareholders of Versum Materials, Inc. Subject to the absence of a major default and the correctness of major representations made by Merck, the lenders are obliged to provide the committed financing for the Versum Acquisition until the earlier of (i) July 13, 2020, or (ii) if the merger agreement with Versum Materials, Inc. has been terminated, the effective date of such termination. The term loan facilities agreement contains market-standard undertakings and restrictions that may influence the flexibility of Merck.

Commercialization Agreement with Pfizer

On November 17, 2014, the Group entered into a global agreement with Pfizer to co-develop and co-commercialize MSB0010718C, an investigational anti-PD-L1 (avelumab) antibody currently in development by the Group as a potential treatment for multiple tumour types to accelerate the two companies' presence in immuno-oncology. Under the terms of the agreement, the Group received an upfront payment of USD 850 million and is eligible to receive regulatory and commercial milestone payments up to USD 2.0 billion. The Group and Pfizer jointly fund all development and

commercialization costs and all sales obtained from selling any anti-PD-L1 or anti-PD-1 products generated from this collaboration will be shared. See also "*Principal Industries — Healthcare — Biopharma*" and "*Intellectual Property Rights — Licenses*".

Commercialization Agreement with GlaxoSmithKline

On February 5, 2019, the Group entered into a global agreement with GlaxoSmithKline to jointly develop and commercialise M7824, a novel immunotherapy with potential in multiple difficult-to-treat cancers. Under the terms of the agreement, the Group is eligible to receive an upfront payment of EUR 300 million, another up to EUR 500 million payment if the treatment reaches certain development milestones and up to another EUR 2.9 billion if approval and commercial milestones are achieved. Profits from the tie-up will be shared jointly between the Group and GlaxoSmithKline. See also "*Principal Industries — Healthcare — Biopharma*".

Legal and Arbitration Proceedings

Save as described in the following, there are currently no, and neither Merck nor any of its subsidiaries have been involved in any, governmental, legal or arbitration proceedings against or affecting Merck or any of its subsidiaries, nor is the Group aware of any pending or threatened proceedings, which (in either case) could have a material adverse effect on the Group's business, financial condition or results of operations. The Group has set up provisions for legal disputes in an amount that it considers appropriate.

Product-related and patent disputes

EMD Serono, a subsidiary of the Issuer, is involved in a patent dispute in the United States with Biogen Inc. (Massachusetts, USA) ("**Biogen**"). Biogen claims that the sale of Rebif® in the United States infringes on a Biogen patent. The disputed patent was granted to Biogen in 2009 in the United States. Subsequently, Biogen sued Merck and other pharmaceutical companies for infringement of this patent. Merck defended itself against all allegations and brought counterclaims that the patent is invalid and not infringed. A Markman hearing took place in January 2012, leading to a claims construction decision in the first quarter of 2016. A court-ordered mediation proceeding did not lead to an agreement between the parties. On February 23, 2018, a jury found in favour of Merck. This jury verdict was, however overturned by the preceding federal district judge. For the time being the patent is thus deemed to be valid and to have been infringed. Merck filed an appeal in October 2018 with the United States Court of Appeals of the Federal Circuit challenging the district judge's ruling.

In the Performance Materials Business Sector, Merck is involved in a legal dispute with JNC Corporation, Japan, ("**JNC**"). JNC claims that by manufacturing and marketing certain liquid crystals mixtures, Merck infringes on JNC patents. Merck maintains that JNC's patent infringement assertion is invalid owing to relevant prior art and has filed the corresponding nullity actions, which in three cases were already successful in first-instance proceedings. JNC has filed complaints in each case. In a correction trial, a decision in favor of JNC was issued in the second instance. Both Merck and the Korean Patent Office have filed complaints with the Korean Supreme Court. In parallel, JNC filed two patent infringement suits. In each of the cases, a first-instance and second-instance decision was taken in Merck's favor, respectively. While in one of these cases JNC appealed, in the second case the time for filing an appeal passed without JNC appealing the respective court decision.

In July 2017, the companies BMS, E.R. Squibb & Sons LLC, Ono Pharmaceutical Co. Ltd. and a private individual filed suit in the United States District Court of Delaware against Merck and Pfizer Inc., USA,

("Pfizer") based on the allegation that Bavencio® infringes a U.S. patent. The plaintiffs accuse multiple companies of infringing a U.S. patent relating to methods of treating tumors with PD-L1 antibodies. The lawsuit was settled based on a settlement agreement signed between Pfizer and the claimant on February 4, 2019.

A new formulation of Levothyrox (Euthyrox), which was developed by Merck on a request from regulatory authorities, was first launched in France in the second quarter of 2017. In the course of 2017 and ongoing during 2018, a significant number of patients started to complain about reported side effects leading to extensive media coverage. Patients have filed legal claims before civil courts asking for compensation from Merck or for a medical expertise. Several civil proceedings are ongoing. As of the date of this Prospectus, all decisions have been rendered in favor of Merck, except for one summary judgement against which an appeal has been filed by Merck before the French supreme court. In the largest collective civil action (Lyon court) initiated by 4,115 claimants for an alleged lack of information, the first instance fully rejected all claims made against Merck by a ruling rendered on March 5th, 2019. An appeal has been filed by the claimants.

Antitrust and other government proceedings

Paroxetine: In connection with the divested generics business, Merck has been subject to investigations by the Office of Fair Trading ("OFT") in the United Kingdom. In March 2013, the OFT informed Merck of the assumption that a settlement agreement entered into in 2002 between Generics (UK) Ltd., at that time a subsidiary of Merck, and several subsidiaries of GlaxoSmithKline in connection with the antidepressant drug paroxetine violates British and European competition law. The investigations into Generics (UK) Ltd. started in 2011, without this being known to Merck. The investigations were extended to Merck in 2013. On February 12, 2016, the OFT issued an infringement decision to a number of companies and Merck appealed this decision. The Competition Appeals Tribunal has since submitted the relevant legal questions to the European Court of Justice (CJEU) for a preliminary ruling.

Raptiva®: In December 2011, the Brazilian federal state of São Paulo sued Merck for damages because of alleged collusion between various pharmaceutical companies and an association of patients suffering from psoriasis and vitiligo. The collusion is alleged to have been intended to increase sales of the medicines from the companies to the detriment of patients and state coffers. Moreover, patients are also suing for damages in connection with the product Raptiva®. As of the date of this Prospectus, seven of the eight individual lawsuits have been dismissed.

On July 6, 2017, Merck received notice from the European Commission ("EU Commission"), in connection with the antitrust review proceedings for the acquisition of Sigma-Aldrich, in which the EU Commission informed Merck of its preliminary conclusion that Merck and Sigma-Aldrich allegedly transmitted incorrect and/or misleading information within the scope of the acquisition of Sigma-Aldrich. The EU Commission received registration of the merger on April 21, 2015 and granted clearance on June 15, 2015 subject to the condition that Merck and Sigma-Aldrich divest parts of the European solvents and inorganic chemicals businesses of Sigma-Aldrich in order to resolve antitrust concerns. According to the preliminary viewpoint of the EU Commission communicated in the letter dated July 6, 2017, Merck and Sigma-Aldrich withheld in this connection important information about an innovation project allegedly relevant for certain laboratory chemicals of significance to the analysis by the EU Commission. According to the EU Commission, the innovation project should have been included in the remedies package. At present, an EU Commission administrative procedure is still pending that could lead to a fine being imposed by the EU Commission. Merck is entitled to appeal

against a decision the EU Commission may pass. The ongoing investigations are limited to the examination of violations of EU merger control procedures and do not affect the validity of the EU Commission's decision to approve the merger.

Trademark rights / breach of agreement

Merck is involved in various legal disputes with Merck & Co. Inc., Kenilworth, NJ, US of the United States (outside the United States and Canada: Merck Sharp & Dohme ("**MSD**")), among other things due to breach of the co-existence agreement between the two companies and / or trademark / name right infringement regarding the use of the designation "Merck". In this context, Merck has sued MSD in various countries and has been sued by MSD in the United States.

In addition to provisions for the mentioned litigation, provisions existed as of the balance sheet date for various smaller pending legal disputes.

Recent Developments

On May 6, 2019, Merck announced the signing of a definitive agreement to acquire Intermolecular Inc., USA, ("**Intermolecular**") for US\$ 1.20 per share in cash (equity value of around US\$ 62 million). The acquisition aims to strengthen the semiconductor technology offering in the Issuer's Performance Materials business sector. Intermolecular reported annual sales of US\$ 34 million in its fiscal year 2018 and has around 90 employees. The transaction is expected to close in the second half of 2019, subject to the approval of Intermolecular's stockholders, regulatory clearances and the satisfaction of other customary closing conditions.

On April 12, 2019, Merck announced that it had signed a definitive agreement to acquire all the issued and outstanding shares of Versum Materials, Inc., USA, ("**Versum**") for US\$ 53 per share in cash the ("**Versum Acquisition**"). Versum is a supplier of innovation-driven, high-purity process chemicals, gases and equipment for semiconductor manufacturing. Versum reported annual sales of approximately € 1.2 billion in its fiscal year 2018 of which more than two thirds were generated in Asia. Versum is headquartered in Tempe, Arizona, United States, had approximately 2,300 employees in 2018 and operates 15 manufacturing and seven research and development facilities throughout Asia and North America.

In the assessment of Merck, the Versum Acquisition could further strengthen Merck's Performance Materials business sector and its position as a leading supplier for electronic materials. Merck expects increased scale, product and service depth, true global presence, a strengthened supply chain and an expansion of the portfolio to include factory equipment, specialty gases and services. The aim of the Versum Acquisition is to create a leading electronic materials player focused on the semiconductor and display industries.

The Versum Acquisition is expected to close in the second half of 2019, subject to regulatory clearances and the satisfaction of other customary closing conditions. The Versum Acquisition was approved at a special meeting of Versum's stockholders on June 18, 2019.

In order to finance the Versum Acquisition, Merck has entered into a facility agreement with Bank of America Merrill Lynch, BNP Paribas Fortis and Deutsche Bank. The facility agreement consists of a USD 4.02 billion bridge loan and a USD 2.28 billion term loan (for further information please see "*Material Contracts - Syndicated Term Loan Facilities Agreement to finance the Versum Acquisition*" above). Merck plans to replace the bridge loan until the closing of the Versum acquisition, *inter alia*, by issuing several series of subordinated and senior notes, including the Notes.

On the basis of previous transactions such as the Merck Serono SA, Millipore Corporation or Sigma-Aldrich Corporation takeovers, Merck believes that it has a strong track record of deleveraging after large acquisitions and intends to keep this focus.

Trend Information and Significant Changes

There has been no material adverse change in the prospects of Merck since December 31, 2018.

There has been no significant change in the financial or trading position of Merck since March 31, 2019.

Legal Structure of Merck

Merck is a corporation with general partners (*Kommanditgesellschaft auf Aktien – KGaA*) organized under German law. A corporation with general partners is a company with its own legal personality, having two types of stakeholders. One group comprises one or more partners having unlimited liability for the company's creditors (general partner – *persönlich haftende Gesellschafter*). The second group are the shareholders, holding an interest in the share capital, divided into shares, without any personal liability for the company's debts (limited liability shareholders – *Kommanditaktionäre*) (Section 278 (1) German Stock Corporation Act (*Aktiengesetz*, "**AktG**"). As a corporation with general partners, Merck is predominantly governed by German stock corporation (*Aktiengesellschaft*) law, subject to a number of distinctive differences, including the presence of general partners, who essentially also manage the company's business activities, the absence of a management board and the restriction of rights and obligations of the supervisory board. This legal form also involves special features with regard to the annual general meeting. For example, many of the resolutions made require the consent of the general partners (Section 285 (2) AktG), including the adoption of the annual financial statements (Section 286 (1) AktG).

Corporate Purpose

The corporate purpose of Merck is defined by Article 2 of its articles of association (*Satzung*) ("**Articles of Association**"):

- (a) the manufacture and distribution of chemical and biotechnological products, particularly pharmaceuticals, basic substances for medicinal products, specialty chemicals, industrial chemicals, pigments and cosmetic substances,
- (b) the manufacture, distribution and trade in laboratory preparations and equipment, particularly reagents and diagnostic agents, and
- (c) the development, acquisition and exploitation of chemical processes and facilities.

Merck is entitled to enter into all transactions and take all actions that appear suited to achieve the object of the Group. For this purpose, Merck may, in particular, provide services, acquire, manage and sell properties, set up, acquire or invest in other companies, and manage such companies or limit itself to the management of its investments.

Merck is also entitled to conduct its business activities through subsidiaries, associated companies and joint ventures. It may spin off or transfer its operations to affiliated companies, either in full or in part.

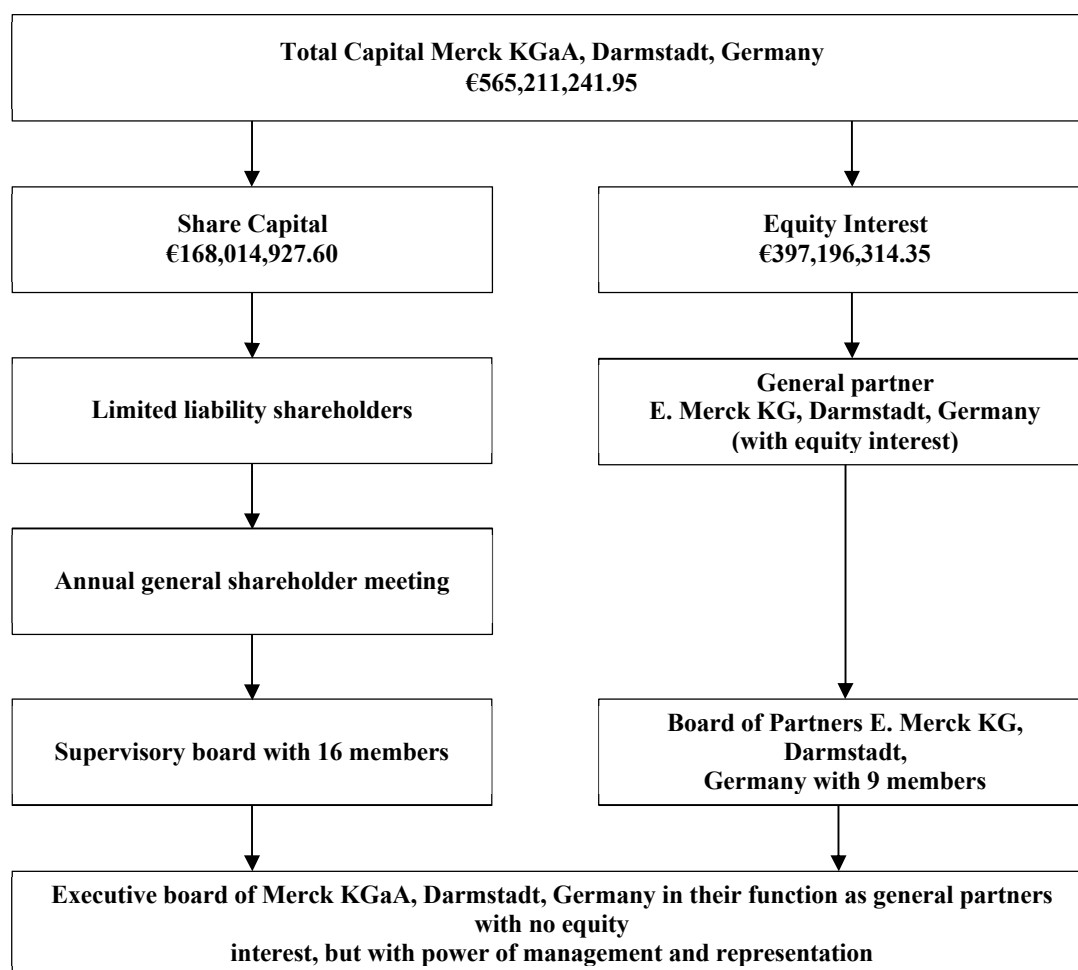
Share Capital

The total capital (*Gesamtkapital*) of Merck is EUR 565,211,241.95 and consists of the share capital (*Grundkapital*) of EUR 168,014,927.60 divided into 129,242,252 shares (including 129,242,251 no-par value bearer shares and one registered share) and the equity interest (*Kapitalanteil*) of EUR 397,196,314.35 held by the general partner E. Merck.

Thus, the general partner E. Merck holds an approximate 70% interest in the total capital of Merck. The equity interest of E. Merck in Merck is not certificated by shares and does not carry any voting rights. The total capital is fully paid up.

The shares of Merck are no-par value shares. One share is a registered share (share number 1); the remaining shares are bearer shares. The holder of the registered share is E. Merck Beteiligungen KG. The transfer of the registered share requires Merck's approval. The approval is granted at the sole discretion of the personally liable general partner with an equity interest, namely E. Merck.

The following chart illustrates the capital structure of Merck as described above:



Organizational Structure and Subsidiaries

Merck manages the operations of the Group as the parent company. Per December 31, 2018 the Group included 301 fully consolidated subsidiaries.

The following companies are the major subsidiaries of Merck:

Country	Company Name	City	Direct or indirect equity interest in percent
China	Merck Serono Co., Ltd.	Beijing	100.00%
France	Gonnon S.A.S.	Lyon	100.00%
France	Merck S.A.	Lyon	99.84%
France	Merck Santé S.A.S.	Lyon	100.00%
France	Millipore S.A.S.	Molsheim	100.00%
Germany	Merck 12. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck 13. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck 15. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck 16. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck 20. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck 21. Allgemeine Beteiligungs-GmbH	Darmstadt	100.00%
Germany	Merck Chemicals GmbH	Darmstadt	100.00%
Germany	Merck Consumer Health Holding Germany GmbH	Darmstadt	100.00%
Germany	Merck Financial Services GmbH	Darmstadt	100.00%
Germany	Merck Financial Trading GmbH	Gernsheim	100.00%
Germany	Merck Holding GmbH	Gernsheim	100.00%
Germany	Merck International GmbH	Darmstadt	100.00%
Germany	Merck Internationale Beteiligungen GmbH	Darmstadt	100.00%
Germany	Merck Vierte Allgemeine Beteiligungsgesellschaft mbH	Gernsheim	100.00%
Italy	Merck Serono S.p.A.	Rome	99.74%
Japan	Merck Performance Materials Ltd.	Tokyo	100.00%
Luxembourg	Merck Chemicals Holding S.a.r.l.	Luxembourg	100.00%
Luxembourg	Merck Finance S.a.r.l.	Luxembourg	100.00%
Luxembourg	Millipore International Holdings, S.a.r.l.	Luxembourg	100.00%
Malta	Merck Capital Holding Ltd.	Pietà	100.00%
Malta	Merck Capital Ltd.	Pietà	100.00%
Netherlands	Merck Chemicals B.V.	Amsterdam Zuidoost	100.00%
Netherlands	Merck Holding Netherlands B.V.	Schiphol- Rijk	100.00%

Country	Company Name	City	Direct or indirect equity interest in percent
South Korea	Merck Performance Materials Ltd.	Pyeongtaek-shi	100.00%
Switzerland	Ares Trading SA	Aubonne	100.00%
Switzerland	Merck Serono SA	Coinsins	100.00%
Switzerland	SeroMer Holding SA	Coinsins	100.00%
Switzerland	Sigma-Aldrich (Switzerland) Holding AG	Buchs	100.00%
Switzerland	Sigma-Aldrich International GmbH	St. Gallen	100.00%
Taiwan	Merck Performance Materials Ltd.	Taipei	100.00%
United Kingdom	Merck Holding Ltd.	Feltham	100.00%
USA	EMD Finance LLC	Wilmington	100.00%
USA	EMD Holding Corp.	Rockland	100.00%
USA	EMD Millipore Corporation	Burlington	100.00%
USA	EMD Serono Holding Inc.	Rockland	100.00%
USA	EMD Serono, Inc.	Rockland	100.00%
USA	Sigma-Aldrich Co. LLC	St. Louis	100.00%
USA	Sigma-Aldrich Corporation	St. Louis	100.00%
USA	Sigma-Aldrich, Inc.	Milwaukee	100.00%

Shareholders and Ownership Structure

As of the date of this Prospectus and according to the notifications received under Section 33 et seq. of the German Securities Trading Act (*Wertpapierhandelsgesetz*) shareholders holding at least 3% of the voting rights in Merck are the following companies (including, where relevant, their affiliates and subsidiaries):

Percent of voting rights	Shareholder
7.20%	BlackRock, Inc.
4.91%	Sun Life Financial, Inc.

A change in the shareholder structure is possible in certain cases. For example, E. Merck may use its right under the Articles of Association to convert its equity interest in whole or in part into share capital. No arrangements are known to Merck which may at a subsequent date result in a change in control over Merck.

Corporate Bodies

In accordance with German law, Merck has three corporate bodies:

- the general partners (*persönlich haftende Gesellschafter*),
- the supervisory board (*Aufsichtsrat*) (the "**Supervisory Board**"), and
- the general meeting (*Hauptversammlung*) (the "**General Meeting**").

According to the Articles of Association, the general partners not holding an equity interest (*persönlich haftende Gesellschafter ohne Kapitalanteil*) are responsible for the management of Merck and thus form the executive board (*Geschäftsleitung*) (the "**Executive Board**"). The administrative bodies consist of the Executive Board and the Supervisory Board. They are separate corporate bodies; no individual can be a member of both bodies.

The group of general partners (*persönlich haftende Gesellschafter*) currently comprises six partners: five members of the Executive Board and E. Merck. Only general partners of E. Merck may be general partners not holding an equity interest in Merck.

E. Merck is generally excluded from managing and representing Merck. However, on account of its substantial capital investment and unlimited personal liability, E. Merck advises and supervises the Executive Board in addition to the expertise and activities of the Supervisory Board. Furthermore, under the Articles of Association, E. Merck has extensive consultation, decision-making and veto rights with respect to the business of Merck.

Executive Board (General Partners not holding an Equity Interest)

The list provides an overview of the current members of the Executive Board and their current activities outside of Merck or other companies of the Group.

Name	Position	Responsibilities	Other current activities outside of the Merck Group
Stefan Oschmann	Chairman	Chief Executive Officer Responsibility for Group functions: Group Strategy & Transformation Group Legal & Compliance Group Internal Auditing Group Communications Public Affairs & Corporate Responsibility	No positions on external boards
Udit Batra	Member	CEO Life Science Responsibility for Group functions: Group Business Technology	(b) – EMD Millipore Corporation, Billerica, Massachusetts, (USA)
Kai Beckmann	Member	CEO Performance Materials Responsibility for Group functions: Patents & Scientific Information Site Operations Inhouse Consulting	(a) – Bundesdruckerei GmbH, Berlin
Belén Garijo Lopez	Member	CEO Healthcare Responsibility for Group functions: Group Human Resources	(b) – Banco Bilbao Vizcaya Argentaria S. A., Bilbao, Spain

Name	Position	Responsibilities	Other current activities outside of the Merck Group
Marcus Kuhnert	Member	Environment, Health, Safety, Security, Quality Chief Financial Officer Responsibility for Group functions: Group Accounting Group Controlling & Divisional Controlling Group Tax Group Treasury Finance Operations Mergers & Acquisitions Investor Relations Merck Business Services Group Procurement	– L'Oréal S.A., Clichy, France No positions on external boards

- * Organized by membership of
 (a) Other statutory supervisory boards
 (b) Comparable German and foreign supervisory bodies of corporations.

The members of the Executive Board can be contacted at the business address of Merck, at Frankfurter Strasse 250, 64293 Darmstadt, Germany.

The following potential conflict of interest exists:

According to the Articles of Association, members of the Executive Board are appointed by E. Merck, together with a simple majority vote of the other general partners. Each general partner of Merck must at the same time be a general partner of E. Merck. Thus, E. Merck de facto appoints the members of the Executive Board. The legal relationships between Merck and the general partners not holding an equity interest, i.e. the members of the Executive Board, are governed by separate agreements between E. Merck and the general partner in question. E. Merck is entitled to terminate these agreements for good cause.

There are no other conflicts of interest between the duties of the Executive Board members and their respective personal interests and/or other duties.

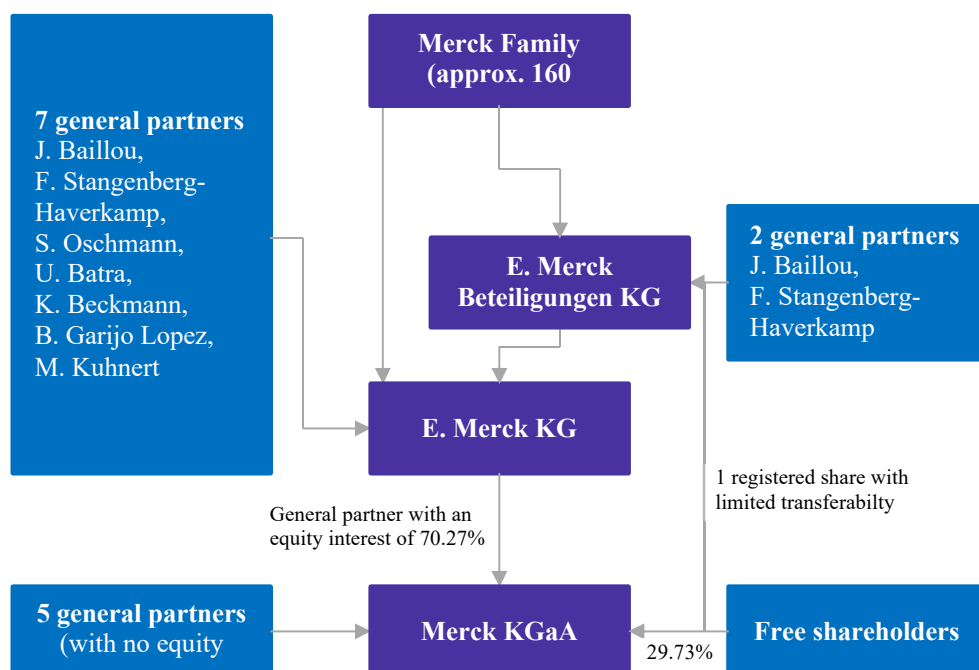
E. Merck (General Partner holding an Equity Interest)

E. Merck currently holds approximately 70% of the total capital of Merck and does not have any operating activities itself. Under the Articles of Association, E. Merck has extensive consultation, decision-making and veto rights with respect to the business of Merck.

E. Merck and its general partners appoint the members of the Executive Board with the approval of a simple majority of the other general partners of Merck. The only persons who can be members of the Executive Board are those who are also general partners of E. Merck. This creates a close relationship between the Executive Board and E. Merck. Other individuals may only become members of the Executive Board if they are nominated by E. Merck and receive the approval of all general partners with no equity interest.

Moreover, the Executive Board requires the consent of E. Merck for all transactions that are beyond the scope of the ordinary business of Merck.

The following chart shows the relationship between Merck, E. Merck and E. Merck Beteiligungen KG:



Supervisory Board

The Supervisory Board of Merck currently consists of sixteen members. Eight members are elected by the employees pursuant to the provisions of the German Co-determination Act (*Mitbestimmungsgesetz*). Of the eight members elected by the shareholders, six are elected by the shareholders at the General Meeting in accordance with the German Stock Corporation Act (*Aktiengesetz*). Two members are appointed by the holder of the registered share (currently E. Merck Beteiligungen KG) provided that a general partner is not the holder of the registered share. If a general partner holds the registered share, these two members are elected by the General Meeting.

The following table shows the current members of the Supervisory Board, the year of their initial election to the Supervisory Board, and their main occupation as well as all current activities outside of the Group.

Name	Position	Year of Election	Profession/ occupation	Other current activities outside of the Merck Group*
Wolfgang Büchele	Chairman	2009	Chairman of Exyte AG	(a) Gelita AG, Eberbach, Germany (b) Kemira Oyi, Helsinki, Finland E. Merck KG, Darmstadt, Germany ⁽¹⁾
Michael Fletterich ⁽²⁾	Vice Chairman	1998	Chairman of the Merck Joint Works Council	No positions on external boards

Name	Position	Year of Election	Profession/ occupation	Other current activities outside of the Merck Group*
Jürgen Glaser ⁽²⁾	Member	2019	District Manager IG Bergbau, Chemie, Energie, District Darmstadt (IG BCE)	(a) Evonik Performance Materials GmbH (Vice Chairman) HFC Prestige Service Germany GmbH (Vice Chairman)
Christian Raabe ⁽²⁾	Member	2019	IT Business Partner	No positions on external boards
Sascha Held ⁽²⁾	Member	2019	Application Engineer	No positions on external boards
Edeltraud Glänzer ⁽²⁾	Member	2008	Vice Chairperson of IG Bergbau, Chemie, Energie (IG BCE)	(a) B. Braun Melsungen AG, Melsungen, Germany Vice Chairperson Supervisory Board of Evonik Industries AG, Essen, Germany
Michael Kleinemeier	Member	2019	Member of the Executive Board of SAP SE, Walldorf, Germany, SAP Digital Business Services	(a) innogy SE, Essen, Germany (Member of the Supervisory Board) (b) E. Merck KG, Darmstadt, Germany ⁽¹⁾
Renate Koehler		2019	Pharmacist and Head of Engel-Apotheke, Darmstadt, Germany	No positions on external boards
Peter Emanuel Merck	Appointed Member	2019	Managing Partner Golf-Lounge GmbH, Hamburg, Germany	No positions on external boards
Dietmar Oeter ⁽²⁾	Member	2014	Vice President of Corporate Quality Assurance	No positions on external boards
Anne Lange ⁽²⁾	Member	2019	Application Engineer	No positions on external boards
Helga Rübsamen-Schaeff	Member	2014	Chairperson of the Advisory Board of AiCuris Antiinfective Cures GmbH, Wuppertal, Germany	(a) 4SC AG, Martinsried Supervisory Board of Bonn University Hospital (b) E. Merck KG, Darmstadt, Germany ⁽¹⁾
Daniel Thelen	Member	2019	Head of Infrastructure Development Department West Region, DB Netz AG, Frankfurt am Main/Duisburg, Germany	(b) E. Merck KG, Darmstadt, Germany ⁽¹⁾

Name	Position	Year of Election	Profession/occupation	Other current activities outside of the Merck Group*
Gabriele Eismann (2)	Member	2014	Senior Product Manager	No positions on external boards
Simon Thelen	Appointed Member	2019	Physician	(b) E. Merck KG, Darmstadt, Germany ⁽¹⁾
Helene von Roeder	Member	2019	Member of the Board (CFO) of Vonovia SE, Bochum, Germany	(b) AVW Versicherungsmakler GmbH, Hamburg, Germany Vonovia Finance B.V., Amsterdam, Netherlands E. Merck KG, Darmstadt, Germany ⁽¹⁾

(1) Internal board position

(2) Employee representatives

* Organized by membership of

(a) Other statutory supervisory boards

(b) Comparable German and foreign supervisory bodies of corporations.

The members of the Supervisory Board can be contacted at the business address of Merck, at Frankfurter Strasse 250, 64293 Darmstadt, Germany.

There are no possible conflicts of interest between the duties of the Supervisory Board members and/or their respective private interests or other duties.

There are no permanent committees such as an audit committee or a compensation committee due to the restrictions of rights and obligations of the supervisory board of a KGaA. In particular, the Supervisory Board is not responsible for appointing the general partners who form the Executive Board, or for regulating the terms and conditions of their contracts. However, the board of partners of E. Merck, the entity responsible for the appointment and dismissal of the members of the Executive Board, has set up committees, namely a Personal Committee, a Finance Committee and a Research & Development Committee. The Supervisory Board has formed a Nomination Committee comprising three shareholder representatives. The Nomination Committee is responsible for proposing to the Supervisory Board suitable candidates for its proposal to the Annual General Meeting.

Corporate Governance

The German Corporate Governance Code (the "**German Corporate Governance Code**") is geared exclusively towards the conditions found in a German stock corporation (Aktiengesellschaft) and not towards a corporation with general partners (Kommanditgesellschaft auf Aktien) such as Merck. Merck has resolved to apply the German Corporate Governance Code logically to serve the interests of its shareholders. On February 26, 2019, Merck issued the following statement of compliance:

"Since the last Declaration of Conformity on February 28, 2018, we have complied with the recommendations of the Government Commission of the German Corporate Governance Code in the version dated February 7, 2017 published in the official section of the German Federal Gazette with the following exception:

Contrary to section 5.3.2 of the German Corporate Governance Code, the Supervisory Board has not established an audit committee. However, an audit committee does exist in the form of the Finance Committee of the Board of Partners of E. Merck KG, which to a large extent exercises the duties described in section 5.3.2 of the Code. Due to the relatively limited authority of the supervisory board

of a KGaA in comparison with that of an AG, this therefore satisfies the requirements of the German Corporate Governance Code.

In view of future compliance with the current recommendations of the Government Commission of the German Corporate Governance Code, the Executive Board and the Supervisory Board declare the following: With the exception of the aforementioned deviation from section 5.3.2 (audit committee), the company will comply with the recommendations of the Code in the version dated February 7, 2017."

Stock Exchange Listing

The shares of Merck have been admitted to the regulated market (regulierter Markt) and to the listing segment with additional transparency requirements (Prime Standard) of the Frankfurt Stock Exchange.

On June 18, 2007 Merck became part of the DAX 30 Index. The DAX 30 Index is the German stock index that tracks the price developments of the 30 largest and most actively traded German equities.

Ratings¹

The following table shows the credit ratings of Merck as of the date of the Prospectus:

Rating Agency	Long-term Rating	Outlook	Short-term Rating
Standard & Poor's Ratings Services ("Standard & Poor's")	A ²	stable	A-1 ³
Moody's Investors Service ("Moody's")	Baa1 ⁴	stable	P-2 ⁵
Scope Ratings ("Scope")	A ⁶	stable	S-1 ⁷

Each of these rating agencies has a registered domicile in the European Union and has been declared to be registered in accordance with Regulation (EC) No. 1060/2009 of the European Parliament and of the Council of September 16, 2009 on rating agencies by the ESMA (source: ESMA, Press release of October 31, 2011, ESMA, List of registered and Certified Credit Rating Agencies, <https://www.esma.europa.eu/supervision/credit-rating-agencies/risk>).

¹ Rating information is merely an aid for investors for the purposes of decision-making and cannot replace an individual judgment to be made by the investor and may not be taken as a recommendation to purchase or sell certain Notes. Ratings are merely intended as a support when making an investment decision and are only one of the factors relevant to an evaluation, which factor must be seen and weighted in the context of other factors. As ratings often are amended only after the creditworthiness of an issuer or guarantor has changed, investors have to make their own judgments although a rating may exist.

² Standard & Poor's defines "A" as follows: "An obligor rated 'A' has strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in higher-rated categories. The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or (-) sign to show relative standing within the major rating categories."

³ Standard & Poor's defines "A-1" as follows: "An obligor rated 'A-1' has strong capacity to meet its financial commitments. It is rated in the highest category by Standard & Poor's. Within this category, certain obligors are designated with a plus sign (+). This indicates that the obligor's capacity to meet its financial commitments is extremely strong. The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or (-) sign to show relative standing within the major rating categories."

⁴ Moody's defines "Baa1" as follows: "Obligations rated 'Baa' are subject to moderate credit risk. They are considered medium grade and as such may possess certain speculative characteristics. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category."

⁵ Moody's defines "P-2" as follows: "Issuers (or supporting institutions) rated Prime-2 have a strong ability to repay short-term debt obligations."

⁶ Scope defines "A-" as follows: "Ratings at the A level reflect an opinion of strong credit quality with a very low risk of a default-like event. The AA, A, BBB, BB and B rating categories are divided into three sub-categories for each, using the '+' and '-' suffixes for the top and bottom sub-category, respectively."

⁷ Scope defines "S-1" as follows: "Ratings at the S-1 level reflect an opinion of very low credit risk with high capacity to repay short-term obligations."

A credit rating is not a recommendation to buy, sell or hold securities and may be revised or withdrawn by the rating agency at any time.

Auditors

The auditor of Merck's annual and consolidated financial statements for the 2017 and 2018 fiscal years is KPMG AG Wirtschaftsprüfungsgesellschaft, Klingelhöferstrasse 18, 10785 Berlin, ("KPMG"). The annual financial statements according to HGB, as well as the consolidated financial statements of Merck according to IFRS for the 2017 and 2018 fiscal years, were audited by KPMG and each provided with an unqualified auditor's opinion. KPMG is a member of the German Chamber of Auditors (*Wirtschaftsprüferkammer*).

Selected Consolidated Financial Information for Merck KGaA

*The following selected historical financial information for the Group is based on the audited consolidated financial statements of Merck KGaA for the fiscal years ended December 31, 2017 and December 31, 2018 ("**Consolidated Annual Financial Statements**") and the unaudited consolidated interim financial statements of Merck KGaA for the three-month period ended March 31, 2019 (the "**Consolidated Interim Financial Statements**") each of which are reproduced elsewhere or incorporated by reference in this Prospectus, and should be read together with them. The Consolidated Annual Financial Statements and the Consolidated Interim Financial Statements were prepared in accordance with International Financial Reporting Standards (IFRS) as adopted in the European Union. The Consolidated Annual Financial Statements were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and issued in each case with an unqualified auditor's opinion.*

The consolidated financial statements of the Merck KGaA were prepared using the cost of sales method, that is expenses are classified according to their function (production, marketing and sales, administration and research and development) and the costs directly incurred to generate the sales for the reporting period are presented as cost of sales.

The first-time application of IFRS 9 and IFRS 15 as of January 1, 2018 should be considered when comparing 2017 and 2018 financial information.

Selected Consolidated Financial Information

	Three-month period ended March 31,		Fiscal year ended December 31,	
	2019	2018 ¹	2018	2017 ¹
	<i>(EUR in million unless otherwise indicated)</i>			
	<i>(unaudited)</i>		<i>(audited unless otherwise indicated)</i>	
Net sales ²	3,746	3,486	14,836	14,517
Operating result (EBIT) ^{2,3*}	379	502	1,727	2,423
Margin (% of net sales) ^{2*}	10.1%	14.4%	11.6%	16.7%
EBITDA ^{2,4*}	853	924	3,528	4,164
Margin (% of net sales) ^{2,5*}	22.8%	26.5%	23.8%	28.7%
EBITDA pre ^{2,6*}	929	967	3,800	4,246
Margin (% of net sales) ^{2*}	24.8%	27.7%	25.6%	29.3%
Profit after tax ^{2,7}	190	342	3,396	2,615
Net cash flows from operating activities ⁷	493	380	2,219	2,696

* Not defined by International Financial Reporting Standards (IFRS).

1 Figures for fiscal year 2017 and Q1 2018 have been adjusted for effects from new accounting standards and other presentation and measurement changes

2 The net sales and profit after tax refer to the continuing business areas of the Merck Group. Net sales of the Consumer Health business for the financial year 2018 were no longer reported in Group sales, as this business was to be classified as a discontinued operation pursuant to IFRS 5 during 2018 and sold as of December 1, 2018. Figures for fiscal year 2017 were adjusted accordingly.

3 EBIT is defined as a key figure for earnings before interest and taxes on income. Equals the operating result.

4 EBITDA is defined as a key figure for earnings before interest, taxes on income, depreciation, amortization, impairments and reversals of impairments: depreciation, amortization, impairments and reversals of impairments are added back to EBIT.

5 Unaudited.

6 "EBITDA pre" excludes in addition to EBITDA specific income and expense of a one-time nature such as integration and restructuring costs, acquisition-related items, and other one-time items. Please refer to "Reconciliation EBITDA Pre to Profit Before Income Tax" below.

7 Including discontinued operations.

	As of March 31,	As of 31, December	
	2019	2018	2017
	<i>(EUR in million unless otherwise indicated)</i>		
	<i>(unaudited)</i>		
Net financial debt ^{1*}	7,089	6,701	10,144
Working capital ^{2*}	3,782	3,486	3,387

* Not defined by International Financial Reporting Standards (IFRS).

1 Please refer to "Reconciliation Net Financial Debt to Financial Liabilities" below.

2 Please refer to "Composition of Working Capital" below.

Reconciliation of Alternative Performance Measures

Certain financial measures set out in the tables above are Alternative Performance Measures and may therefore not be considered as an alternative to the financial measures defined in the accounting standards in accordance with generally accepted accounting principles. The Issuer has provided these Alternative Performance Measures because it believes they provide investors with additional information to assess the economic situation of the Issuer's business activities. The definition of the Alternative Performance Measures may vary from the definition of identically named alternative performance measures used by other companies. The Alternative Performance Measures used by the Issuer should not be considered as an alternative to measures derived in accordance with IFRS as measures of operating performance. The Alternative Performance Measures have limitations as analytical tools and should not be considered in isolation or as substitutes for analysis of results as reported under IFRS.

The following tables provide additional information on the reconciliation of the Alternative Performance measures.

Reconciliation EBITDA PRE to PROFIT BEFORE INCOME TAX

	Three-month period ended March 31,		Fiscal year ended December 31,	
	2019	2018 ¹	2018	2017 ¹
<i>(EUR in million)</i>				
<i>(unaudited unless otherwise indicated)</i>				
EBITDA pre of the operating business^{2*}	1,040	1,032	4,181	4,538
Corporate and Other	(112)	(65)	(381)	(292)
EBITDA pre of the Merck Group^{2*}	929	967	3,800	4,246
Depreciation/amortization/ impairment losses/reversals of impairment losses	(474)	(422)	(1,801) ⁴	(1,741) ⁴
Adjustments*	(76)	(43)	(272)	(82)
Operating result (EBIT)^{3*}	379	502	1,727⁴	2,423⁴
Financial result.....	(113)	(61)	(266) ⁴	(294) ⁴
Profit before income tax	266	441	1,461⁴	2,129⁴

* Not defined by International Financial Reporting Standards (IFRS).

1 Figures for fiscal year 2017 and Q1 2018 have been adjusted for effects from new accounting standards and other presentation and measurement changes

2 "EBITDA pre" excludes in addition to EBITDA specific income and expense of a one-time nature such as integration and restructuring costs, acquisition-related items, and other one-time items.

3 EBIT is defined as a key figure for earnings before interest and taxes on income. Equals the operating result.

4 Audited.

The adjustments comprised the following:

	Three-month period ended March 31,		Fiscal year ended December 31,	
	2019	2018	2018	2017 ¹
<i>(EUR in million)</i>				
<i>(unaudited)</i>				
Restructuring costs	(61)	(6)	(46)	(61)
Integration costs / IT costs	(13)	(21)	(142)	(188)
Gains / losses on the divestment of businesses	(2)	(2)	(25)	310
Acquisition-related adjustments	-	(1)	(2)	(63)
Other adjustments	1	(14)	(58)	(81)
Adjustments before impairment losses / reversals of impairment losses	(76)	(43)	(272)	(82)
Impairment losses	-	-	(55)	(68)
Reversals of impairment losses	-	-	-	87
Adjustments (total)*	(76)	(43)	(327)	(64)

* Not defined by International Financial Reporting Standards (IFRS).

Reconciliation NET FINANCIAL DEBT to FINANCIAL LIABILITIES

	As of March 31,	As of December 31,	
	2019	2018	2017
<i>(EUR in million)</i>			
<i>(unaudited)</i>			
Current financial liabilities	4,443	2,215	2,790
Non-current financial liabilities	5,047	6,681	8,033
Financial liabilities	9,490	8,896	10,823
Less:			
Cash and cash equivalents	2,340	2,170	589
Current financial assets	61	24	90
Net financial debt *	7,089	6,701	10,144

* Not defined by International Financial Reporting Standards (IFRS).

Composition of WORKING CAPITAL

	As of March 31,	As of December 31,	
	2019	2018	2017
		<i>(EUR in million)</i>	
		<i>(unaudited)</i>	
Trade accounts receivable	2,993	2,931	2,923
Receivables from royalties and licenses	25	29	28
Inventories	2,937	2,764	2,632
Trade accounts payable/Refund liabilities	-2,174	-2,238	-2,195
Working Capital *	3,782	3,486	3,387

* Not defined by International Financial Reporting Standards (IFRS).

TAXATION

The following discussion of the tax consequences of an investment in the Notes is based on the laws in force on the date of this Prospectus. We emphasize that the tax implications can be subject to alteration due to future changes in law, possibly with retroactive or retrospective effect.

Although this discussion reflects the opinion of the Issuer, it should not be misunderstood as a guarantee in an area of law which is not free from doubt. Further, this discussion is not intended as the sole basis for an investment in the Notes as the individual tax position of the Holder needs to be investigated. Therefore, this statement is confined to a general discussion of certain Luxembourg tax and German tax consequences of an investment in the Notes.

Prospective Holders are recommended to consult their own tax advisors as to the tax consequences to them of the investment.

Responsibility of the Issuer for the withholding of taxes at source

The Issuer does not assume any responsibility for the withholding of taxes at source.

Taxation in the Grand Duchy of Luxembourg

The following information is of a general nature only and is based on the laws presently in force in Luxembourg, though it is not intended to be, nor should it be construed to be, legal or tax advice. The information contained within this section is limited to Luxembourg to certain withholding tax issues and prospective investors in the Notes should therefore consult their own professional advisers as to the effects of state, local or foreign laws, including Luxembourg tax law, to which they may be subject.

Please be aware that the residence concept used under the respective headings below applies for Luxembourg income tax assessment purposes only. Any reference in the present section to a withholding tax or a tax of a similar nature, or to any other concepts, refers to Luxembourg tax law and/or concepts only.

Withholding Tax

Under Luxembourg tax law currently in effect and subject to the exception below, there is no Luxembourg withholding tax on payments of interest (including accrued but unpaid interest) or repayments of principal.

In accordance with the law of December 23, 2005, as amended, interest payments made by Luxembourg paying agents to individual beneficial owners, which are residents of Luxembourg, are subject to a 20 per cent. withholding tax. Responsibility for withholding such tax will be assumed by the Luxembourg paying agent. Such withholding tax will be in full discharge of income tax if the beneficial owner is an individual acting in the course of the management of his/her private wealth.

Income Taxation

Non-resident Holder of Notes

A non-resident Holder of Notes, not having a permanent establishment or permanent representative in Luxembourg to which or to whom such Notes are attributable, is not subject to Luxembourg income tax on interest accrued or received, redemption premiums or issue discounts, or any other income under the Notes. A gain realised by such non-resident Holder of Notes on the sale or disposal, in any form whatsoever, of the Notes is further not subject to Luxembourg income tax.

A non-resident Holder of Notes acting in the course of the management of professional or business undertaking, who has a permanent establishment or permanent representative in Luxembourg to which

or to whom such Notes are attributable, is subject to Luxembourg income tax on interest accrued or received, redemption premiums or issue discounts, or other income under the Notes, and on any gains realised upon the sale or disposal, in any form whatsoever of the Notes.

Resident Holder of Notes

Holder of Notes who/which are resident of Luxembourg will not be liable for any Luxembourg income tax on repayment of principal.

Luxembourg resident corporate Holder of Notes

A corporate Holder of Notes must include any interest accrued or received, any redemption premium or issue discount, as well as any gain realized on the sale or disposal, in any form whatsoever, of the Notes, in its taxable income for Luxembourg income tax assessment purposes.

Corporate Holder of Notes that are governed by the law of May 11, 2007 on family estate management companies, as amended, or by the law of December 17, 2010 on undertakings for collective investment, as amended, or by the law of February 13, 2007 on specialised investment funds as amended, or by the law of July 23, 2016 on reserved alternative investment funds (provided it is not foreseen in the incorporation documents that (i) the exclusive object is the investment in risk capital and that (ii) article 48 of the aforementioned law of July 23, 2016 apply), are tax exempt entities in Luxembourg, and are thus not subject to any Luxembourg tax (i.e., corporate income tax, municipal business tax and net wealth tax) other than the annual subscription tax calculated on their (paid up) share capital (and share premium) or net asset value.

Luxembourg resident individual Holder of Notes

An individual Holder of Notes, who acts in the course of the management of his private wealth and who is a resident of Luxembourg for tax purposes, has further to include the portion of the gain corresponding to accrued but unpaid interest in respect of the Holder of Notes in his taxable income, except if (i) withholding tax has been levied on such payments in accordance with the law of December 23, 2005, or (ii) the individual Holder of Notes has opted for the application of a 20% withholding tax in full discharge of income tax in accordance with the law of December 23, 2005, which applies if a payment of interest has been made or ascribed by a paying agent established outside Luxembourg in an EU Member State, or in a State of the European Economic Area other than an EU Member state.

The above 20% withholding tax represents the final tax liability on interest received for the Luxembourg resident individuals receiving the interest payments in the course of their private wealth and can be refunded in consideration of foreign withholding tax, based on double tax treaties concluded by Luxembourg.

Under Luxembourg domestic tax law, gains realised by an individual Holder of Notes, who acts in the course of the management of his private wealth and who is a resident of Luxembourg for tax purposes, on the sale or disposal, in any form whatsoever, of Notes are not subject to Luxembourg income tax, provided this sale or disposal took place six months after the acquisition of the Notes, or that the sale or disposal does not precedes the acquisition of the Notes.

An individual Holder of Notes acting in the course of the management of professional or business undertaking must include any income under the Notes in its taxable basis. In that event, such 20 % withholding tax levied will be credited against its final income tax liability.

Net Wealth Taxation

A corporate Holder of Notes, whether it is a resident of Luxembourg for tax purposes or, if not, it maintains a permanent establishment or a permanent representative in Luxembourg to which such Notes are attributable, is subject to Luxembourg net wealth tax on such Notes, except if the Holder of Notes is governed by the law of May 11, 2007 on family estate management companies, as amended, or by the law of December 17, 2010 on undertakings for collective investment, as amended, or by the law of February 13, 2007 on specialised investment funds, or is a securitisation company governed by the law of March 22, 2004 on securitisation, as amended, or is a capital company governed by the law of June 15, 2004 on venture capital vehicles, as amended or is a reserved alternative investment fund governed by the law of July 23, 2016. However, a securitisation company subject to the amended law of March 22, 2004 and a company subject to the amended law of June 15, 2004 on venture capital vehicles are, as from January 1, 2016, subject to a minimum net wealth tax, as well as reserved alternative investment funds subject to the law of July 23, 2016, provided it is foreseen in the incorporation documents that (i) the exclusive object is the investment in risk capital and that (ii) article 48 of the aforementioned law of July 23, 2016 applies.

An individual Holder of Notes, whether he/she is resident of Luxembourg or not, is not subject to Luxembourg net wealth tax on the Notes.

Inheritance and Gift Tax

Where a Holder of Notes is a resident of Luxembourg for tax purposes at the time of his/her death, the Notes are included in his/her taxable estate for inheritance tax assessment purposes.

Gift tax may be due on a gift or donation of Notes if embodied in a Luxembourg deed passed in front of a Luxembourg notary or recorded in Luxembourg.

Other Taxes

In principle, neither the issuance nor the transfer, repurchase or redemption of Notes will give rise to any Luxembourg registration tax or similar taxes.

However, a fixed or ad valorem registration duty may be due in case the Notes must be produced before an official Luxembourg authority, or in the case of a registration of the Notes on a voluntary basis, or if the Notes are appended to a document that requires mandatory registration.

Taxation in the Federal Republic of Germany

The following is a general discussion of certain German tax consequences of the acquisition, holding and disposal of the Notes. It does not purport to be a comprehensive description of all German tax considerations that may be relevant to a decision to purchase Notes, and, in particular, does not consider any specific facts or circumstances that may apply to a particular purchaser. This discussion of the tax consequences of an investment in the Notes is based on the tax laws of Germany currently in force and as applied on the date of this Prospectus, which are subject to change, possibly with retroactive or retrospective effect.

Tax resident Holders of the Notes

The section "*Tax resident Holders of the Notes*" refers to persons who are tax residents of Germany (i.e. persons whose residence, habitual abode, statutory seat, or place of effective management is located in Germany).

Withholding tax on interest payments and capital gains

Interest payments received by an individual Holder of the Notes will be subject to German withholding tax if the Notes are kept or administrated in a custodial account with a German branch of a German or non-German credit institution or financial services institution, a German securities trading company or a German securities trading bank (each a "**Disbursing Agent**", *auszahlende Stelle*). The flat income tax rate is 25% (plus 5.5% solidarity surcharge thereon, the total withholding being 26.375%). An electronic information system for withholding of church tax will apply to individuals subject to church tax in relation to investment income, with the effect that church tax will be collected by the Disbursing Agent by way of withholding unless the investor has filed a blocking notice (*Sperrvermerk*) with the German Federal Central Tax Office (*Bundeszentralamt für Steuern*) in which case the investor will be assessed to church tax.

The same treatment applies to capital gains (i.e. the difference between the proceeds from the disposal, redemption, repayment or assignment after deduction of expenses directly related to the disposal, redemption, repayment or assignment and the cost of acquisition) derived by an individual Holder provided the Notes have been held in a custodial account with a Disbursing Agent since the time of their acquisition. If Notes held or administrated in the same custodial account have been acquired at different points in time, the Notes first acquired will be deemed to have been sold first for the purposes of determining the capital gains. Where Notes are acquired and/or sold or redeemed in a currency other than Euro, the sales/redemption price and the acquisition costs have to be converted into Euro on the basis of the foreign exchange rates prevailing on the sale or redemption date and the acquisition date respectively. If interest coupons or interest claims are disposed of separately (i.e. without the Notes), the proceeds from the disposition are subject to withholding tax. The same applies to proceeds from the payment of interest coupons or interest claims if the Notes have been disposed of separately.

To the extent the Notes have not been kept in a custodial account with a Disbursing Agent since the time of their acquisition, upon the disposal, redemption, repayment or assignment withholding tax applies at a rate of 26.375% (including solidarity surcharge, plus church tax, if applicable) on 30% of the disposal proceeds (plus interest accrued on the Notes ("**Accrued Interest**", *Stückzinsen*), if any), unless the investor or the previous depository bank was able and allowed to prove evidence for the investor's actual acquisition costs to the Disbursing Agent.

In computing any German tax to be withheld, the Disbursing Agent may generally deduct from the basis of the withholding tax negative investment income realised by the individual Holder of the Notes via the Disbursing Agent (e.g. losses from the sale of other securities with the exception of shares). The Disbursing Agent may also deduct Accrued Interest on the Notes or other securities paid separately upon the acquisition of the respective security via the Disbursing Agent. In addition, subject to certain requirements and restrictions the Disbursing Agent may credit foreign withholding taxes levied on investment income in a given year regarding securities held by the individual Holder in the custodial account with the Disbursing Agent.

Individual Holders may be entitled to an annual allowance (*Sparer-Pauschbetrag*) of EUR 801 (EUR 1,602 for jointly assessed individual Holders) for all investment income received in a given year. Upon the individual Holder filing an exemption certificate (*Freistellungsauftrag*) with the Disbursing Agent, the Disbursing Agent will take the allowance into account when computing the amount of tax to be withheld. No withholding tax will be deducted if the Holder of the Notes has submitted to the

Disbursing Agent a certificate of non-assessment (*Nichtveranlagungsbescheinigung*) issued by the competent local tax office.

German withholding tax will not apply to gains from the disposal, redemption, repayment or assignment of Notes held by a corporation as Holder while ongoing payments, such as interest payments, are subject to withholding tax (irrespective of any deductions of foreign tax and capital losses incurred). With regard to gains from the disposal, repayment or assignment of Notes held by an individual Holder, a business partnership or through the permanent establishment of a non-resident taxpayer, the same may apply upon application where the Notes form part of a trade or business, subject to further requirements being met.

The Issuer is not obliged under German law to withhold any withholding tax (*Kapitalertragsteuer*) on interest payments and upon the sale or redemption of the Notes.

Taxation of current income and capital gains

The personal income tax liability of an individual Holder deriving income from capital investments under the Notes is, in principle, settled by the tax withheld. To the extent withholding tax has not been levied, such as in the case of Notes kept in custody abroad or if no Disbursing Agent is involved in the payment process, the individual Holder must report his or her income and capital gains derived from the Notes on his or her tax return and then will also be taxed at a rate of 25% (plus solidarity surcharge and church tax thereon, where applicable). If the withholding tax on a disposal, redemption, repayment or assignment has been calculated from 30% of the disposal proceeds (rather than from the actual gain), an individual Holder may and in case the actual gain is higher than 30% of the disposal proceeds must also apply for an assessment on the basis of his or her actual acquisition costs. Further, an individual Holder may request that all investment income of a given year is taxed at his or her lower individual tax rate based upon an assessment to tax with any amounts over withheld being refunded. In each case, the deduction of expenses (other than transaction costs) on an itemized basis is not permitted.

Please note that the coalition agreement between the German Christian Democratic Party and the German Social Democratic Party for the formation of the current German federal government provides that the flat tax regime shall be partially abolished for certain capital investment income, including interest income. The coalition agreement further provides that the solidarity surcharge shall be abolished in stages provided that the individual income does not exceed certain thresholds. There is however no draft bill available yet and a lot of details are hence still unclear. That means however that income received by Holders holding the Notes as private assets may be taxed at individual progressive income tax rates of up to 45 per cent. in the future (plus a 5.5 per cent. solidarity surcharge thereon, unless abolished or reduced in the future, and church tax, if applicable to the individual Holder).

Capital losses from the disposal, redemption, repayment or assignment of the Notes held as private assets should generally be tax-recognised irrespective of the holding period of the Notes. The losses may, however, not be used to offset other income like employment or business income but may only be offset against investment income subject to certain limitations. Losses not utilised in one year may be carried forward into subsequent years but may not be carried back into preceding years. According to the view of German tax authorities, losses suffered upon a bad debt loss (*Forderungsausfall*) and a waiver of a receivable (*Forderungsverzicht*) (to the extent the waiver does not qualify as a hidden contribution) shall, in general, not be deductible for tax purposes. With respect to a bad debt loss the German Federal Tax Court has recently rejected the view of German tax authorities. With respect to a (voluntary) waiver of receivable a lower German fiscal court confirmed the view of German tax

authorities in a final decision. The tax authorities have confirmed that losses from a sale or redemption qualify, subject to the aforementioned loss ring-fencing rules, as tax deductible irrespective of the amount of the transaction costs and the sale or redemption proceeds, i.e. even if the transaction costs exceed the sale or redemption proceeds.

Where Notes form part of a trade or business the withholding tax, if any, will not settle the personal or corporate income tax liability. Where Notes form part of a trade or business, interest (accrued) must be taken into account as income. The respective Holder will have to report income and related (business) expenses on the tax return and the balance will be taxed at the Holder's applicable tax rate. Withholding tax levied, if any, will be credited against the personal or corporate income tax of the Holder. Where Notes form part of a German trade or business the current income and gains from the disposal, redemption, repayment or assignment of the Notes may also be subject to German trade tax.

Non-resident Holders of the Notes

Interest, including Accrued Interest, and capital gains are not subject to German taxation, unless (i) the Notes form part of the business property of a permanent establishment, including a permanent representative, or a fixed base maintained in Germany by the Holder or (ii) the income otherwise constitutes German-source income. In cases (i) and (ii) a tax regime similar to that explained above under "*Tax resident Holders of the Notes*" applies.

Non-residents of Germany are, in general, exempt from German withholding tax on interest and the solidarity surcharge thereon. However, where the interest is subject to German taxation as set forth in the preceding paragraph and the Notes are held in a custodial account with a Disbursing Agent, withholding tax may be levied under certain circumstances. The withholding tax may be refunded based on an assessment to tax or under an applicable tax treaty.

Particularities of Notes with a negative yield

Holders will only realise a taxable capital gain if they receive, upon a disposal of the Notes, an amount (after the deduction of actual expenses directly related thereto) in excess of the issue price (or the purchase price they paid for the Notes).

Contrary thereto, Holders who subscribe the Notes at a negative yield upon issue and hold the Notes until their final maturity will realise a loss. The tax treatment of such losses is not entirely clear:

- (i) If the Notes are held by tax residents as non-business assets, statements of the German tax authorities regarding "negative interest" incurred on bank deposits made by private investors arguably imply that such losses cannot be fully deducted. Such losses are rather treated as expenses in connection with capital investment income and, are, consequently not tax-deductible except for an annual lump-sum deduction (*Sparer-Pauschbetrag*) of €801 (€1,602 for individuals filing jointly),
- (ii) If the Notes are held by tax residents as business assets, statements of the German tax authorities regarding "negative interest" incurred on bank deposits made by business investors arguably imply that such losses are generally tax deductible.

Substitution of the Issuer

If the Issuer exercises the right to substitute the debtor of the Notes, the substitution might, for German tax purposes, be treated as an exchange of the Notes for new notes issued by the Substitute Debtor and

subject to similar taxation rules like the Notes. In particular, such a substitution could result in the recognition of a taxable gain or loss for any Holder of a Note.

Inheritance and gift tax

The transfer of the Notes to another person by way of gift or inheritance may be subject to German gift or inheritance tax, respectively, if inter alia

- (i) the testator, the donor, the heir, the donee or any other acquirer had his residence, habitual abode or, in case of a corporation, association (*Personenvereinigung*) or estate (*Vermögensmasse*), has its seat or place of management in Germany at the time of the transfer of property,
- (ii) except as provided under (i), the testator's or donor's Notes belong to business assets attributable to a permanent establishment or a permanent representative in Germany.

Special regulations may apply to certain German expatriates.

Other taxes

No stamp, issue, value added, capital transfer or registration taxes or such duties will be payable in Germany in connection with the issuance, delivery or execution as well as the purchase, sale or other disposal of the Notes. However, under certain circumstances entrepreneurs may choose liability to German value added tax with regard to the sale of the Notes to other entrepreneurs which would otherwise be tax exempt. Currently, net assets tax is not levied in Germany.

Foreign Account Tax Compliance Act

Pursuant to certain provisions of the U.S. Internal Revenue Code of 1986, commonly known as FATCA, a "foreign financial institution" may be required to withhold on certain payments it makes ("**foreign passthru payments**") to persons that fail to meet certain certification, reporting, or related requirements. A number of jurisdictions (including Germany) have entered into, or have agreed in substance to, intergovernmental agreements with the United States to implement FATCA ("**IGAs**"), which modify the way in which FATCA applies in their jurisdictions. Certain aspects of the application of the FATCA provisions and IGAs to instruments such as the Notes, including whether withholding would ever be required pursuant to FATCA or an IGA with respect to payments on instruments such as the Notes, are uncertain and may be subject to change. Even if withholding would be required pursuant to FATCA or an IGA with respect to payments on instruments such as the Notes, such withholding would not apply prior to the date that is two years after the date of publication of final regulations with the U.S. Federal Register defining the term "foreign passthru payments". To date such final regulations have not yet been published. Holders should consult their own tax advisors regarding how these rules may apply to their investment in the Notes. In the event any withholding would be required pursuant to FATCA or an IGA with respect to payments on the Notes, the Issuer will not pay any additional amounts as a result of the withholding.

The proposed financial transactions tax (FTT)

On February 14, 2013, the European Commission published a proposal (the "**Commission's Proposal**") for a Directive for a common financial transactions tax (the "**FTT**"). According to the Commission's Proposal, the FTT shall be implemented in certain EU Member States, including Germany (the "**Participating Member States**").

Pursuant to the Commission's Proposal, the FTT shall be payable on financial transactions provided at least one party to the financial transaction is established or deemed established in a Participating Member State and there is a financial institution established or deemed established in a Participating Member State which is a party to the financial transaction, or is acting in the name of a party to the transaction. The FTT shall, however, not apply to (inter alia) primary market transactions referred to in Article 5(c) of Regulation (EC) No 1287/2006, including the activity of underwriting and subsequent allocation of financial instruments in the framework of their issue. Thus, the issuance of the Notes should not be subject to the FTT.

The rates of the FTT shall be fixed by each Participating Member State but for transactions involving financial instruments other than derivatives shall amount to at least 0.1% of the taxable amount. The taxable amount for such transactions shall in general be determined by reference to the consideration paid or owed in return for the transfer. The FTT shall be payable by a financial institution established or deemed established in a Participating Member State which is a party to the financial transaction, acting in the name of a party to the transaction or where the transaction has been carried out on its account. Where the FTT due has not been paid within the applicable time limits, each party to a financial transaction, including persons other than financial institutions, shall become jointly and severally liable for the payment of the FTT due.

According to the coalition agreement between the German Christian Democratic Party and the German Social Democratic Party, the current German government still has the intention to introduce a FTT. In June 2018, Germany and France agreed to further pursue the implementation of a FTT in the EU for which the current French financial transaction tax (which is mainly focused on transactions regarding shares in listed companies with a market capitalization of more than EUR 1 billion), could serve as a role model.

Nevertheless, the FTT remains subject to negotiation between the Participating Member States and was (and most probably will be) the subject of legal challenge. It may still be adopted and be altered prior to its adoption, the timing of which still remains unclear. Moreover, once any directive has been adopted (the "**Directive**"), it will need to be implemented into the respective domestic laws of the still Participating Member States and the domestic provisions implementing the Directive might deviate from the Directive itself. Finally, additional EU Member States may decide to participate.

Prospective holders of the Notes should consult their own tax advisers in relation to the consequences of the FTT associated with subscribing for, purchasing, holding and disposing of the Notes.

SUBSCRIPTION AND SALE

Pursuant to a subscription agreement to be signed on or about June 21, 2019 (the "**Subscription Agreement**") among the Issuer and the Joint Bookrunners, the Issuer has agreed to sell to the Joint Bookrunners, and the Joint Bookrunners have agreed, subject to certain customary closing conditions, to purchase, the Notes on June 25, 2019. The Issuer has furthermore agreed to pay certain fees to the Joint Bookrunners and to reimburse the Joint Bookrunners for certain expenses incurred in connection with the issue of the Notes.

The Subscription Agreement provides that the Joint Bookrunners under certain circumstances will be entitled to terminate the Subscription Agreement. In such event, no Notes will be delivered to investors. Furthermore, the Issuer has agreed to indemnify the Joint Bookrunners against certain liabilities in connection with the offer and sale of the Notes.

The Joint Bookrunners or their affiliates have provided from time to time, and expect to provide in the future, investment services to the Issuer and its affiliates, for which the Joint Bookrunners or their affiliates have received or will receive customary fees and commissions. In addition, the Joint Bookrunners or their affiliates are involved in financing initiatives relating to the Issuer including the provision of an, as yet, undrawn credit facility in connection with the Versum Acquisition. Furthermore, in the ordinary course of their business activities, the Joint Bookrunners and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of the Issuer or its affiliates. Certain of the Joint Bookrunners or their affiliates that have a lending relationship with the Issuer routinely hedge their credit exposure to the Issuer consistent with their customary risk management policies. Typically, such Joint Bookrunners and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in the Issuer's securities, including potentially the Notes offered hereby. Any such short positions could adversely affect future trading prices of the Notes offered hereby. The Joint Bookrunners and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

There are no interests of natural and legal persons other than the Issuer involved in the issue, including conflicting ones that are material to the issue.

Selling Restrictions

General

Each Joint Bookrunner has acknowledged that other than explicitly mentioned in this Prospectus no action is taken or will be taken by the Issuer in any jurisdiction that would permit a public offering of the Notes, or possession or distribution of any offering material relating to them, in any jurisdiction where action for that purpose is required.

Each Joint Bookrunner has represented and agreed that it will, to their best knowledge and belief, comply with all applicable laws and regulations in each jurisdiction in which it purchases, offers, sells or delivers Notes or has in its possession or distributes any offering material relating to them.

European Economic Area

Each Joint Bookrunner has represented, warranted and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Notes to any retail investor in the European Economic Area. For the purposes of this provision the expression retail investor means a person who is one (or more) of the following:

- (i) a retail client as defined in point (11) of Article 4(1) of MiFID II (as amended); or
- (ii) a customer within the meaning of Directive 2002/92/EC, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II.

United States of America and its territories

The Notes have not been and will not be registered under the Securities Act, and may not be offered or sold into or within the United States or to, or for the account or benefit of, U.S. persons except in certain transactions exempt from the registration requirements of the Securities Act. Terms used in this paragraph have the meanings given to them by Regulation S under the Securities Act ("**Regulation S**").

The Notes are subject to U.S. tax law requirements and may not be offered, sold or delivered within the United States or its possessions or to a United States person, except in certain transactions permitted by U.S. tax regulations. Terms used in this paragraph have the meanings given to them by the U.S. Internal Revenue Code of 1986 and regulations thereunder.

The Joint Bookrunners have agreed that they will not offer, sell or deliver the Notes (i) as part of their distribution at any time or (ii) otherwise until 40 days after the later of the commencement of the offering and the Closing Date, within the United States or to, or for the account or benefit of, U.S. persons, and they will send to each distributor, dealer or person receiving a selling concession, fee or other remuneration that purchases Notes from them during the distribution compliance period a confirmation or other notice setting forth the restrictions on offers and sales of the Notes within the United States or to, or for the account or benefit of, U.S. persons. Terms used in this paragraph have the meanings given to them by Regulation S.

In addition:

- (i) except to the extent permitted under U.S. Treas. Reg. §1.163-5(c)(2)(i)(D) (the "**D Rules**"), the Joint Bookrunners (i) have represented that they have not offered or sold, and agree that during a 40 day restricted period they will not offer or sell, Notes to a person who is within the United States or its possessions or to a United States person, and (ii) represented that they have not delivered and agree that they will not deliver within the United States or its possessions definitive Notes that are sold during the restricted period;
- (ii) the Joint Bookrunners have represented that they have and agreed that throughout the restricted period they will have in effect procedures reasonably designed to ensure that their employees or agents who are directly engaged in selling Notes are aware that such Notes may not be offered or sold during the restricted period to a person who is within the United States or its possessions or to a United States person, except as permitted by the D Rules;
- (iii) if it is a United States person, the Joint Bookrunners represented that it is acquiring the Notes for purposes of resale in connection with their original issue and if it retains Notes for its own account, it will only do so in accordance with the requirements of U.S. Treas. Reg. §1.163-5(c)(2)(i)(D)(6) and;

- (iv) with respect to each affiliate that acquires from them Notes for the purpose of offering or selling such Notes during the restricted period, the Joint Bookrunners either (a) repeated and confirmed the representations and agreements contained in paragraphs (i), (ii) and (iii) on their behalf or (b) agreed that they will obtain from such affiliate for the benefit of the Issuer the representations and agreements contained in paragraphs (i), (ii) and (iii).

Terms used in this paragraph have the meanings given to them by the U.S. Internal Revenue Code of 1986 and regulations thereunder, including the D Rules.

United Kingdom

Each Joint Bookrunner has represented, warranted and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the "FSMA")) received by it in connection with the issue or sale of any Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer, and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

GENERAL INFORMATION

Interest of Natural and Legal Persons involved in the Issue/Offer

Certain of the Joint Bookrunners and their affiliates may be customers of, borrowers from or creditors of Merck KGaA and/or its affiliates. In addition, certain Joint Bookrunners and their affiliates have engaged, and may in the future engage, in investment banking and/or commercial banking transactions with, and may perform services for Merck KGaA and/or its affiliates in the ordinary course of business. In particular, the Joint Bookrunners or their affiliates are involved in financing initiatives relating to the Issuer, including the provision of an, as yet, undrawn credit facility in connection with the Versum Acquisition.

Authorization

The issue of the Notes was authorized by the Executive Board of Merck KGaA on May 21, 2019 and the Board of Partners of E. Merck KG, dated May 28, 2019.

Use of Proceeds/Expenses of the Issue

The net proceeds from the issuance of the Notes, estimated by the Issuer to be approximately EUR 1,489,650,000, will be used to partly finance the Versum Acquisition. In the event that the aforementioned transaction is not consummated, the proceeds of the issuance of the Notes may be used for the Issuer's general corporate purposes, which may include the financing of other merger and acquisition activities. The total expenses related to the admission to trading of the Notes are expected to amount EUR 15,000.

Listing and admission to trading of the Notes

Application has been made to the Luxembourg Stock Exchange for each Series of Notes to be admitted to trading on the Regulated Market of the Luxembourg Stock Exchange (which is a regulated market for the purposes of Directive 2014/65/EU) and to be listed on the Official List of the Luxembourg Stock Exchange on or around the Issue Date.

Clearing Systems and Security Codes

The Notes have been accepted for clearance through:

Clearstream Banking, société anonyme
42 Avenue JF Kennedy
1855 Luxembourg
The Grand Duchy of Luxembourg

and

Euroclear Bank S.A./N.V.
1 Boulevard du Roi Albert II
1210 Brussels
Kingdom of Belgium

The Notes have the following securities codes:

NC5.5 Notes:

International Securities Identification Number (ISIN)	XS2011260531
Common Code	201126053
German Securities Identification Number (<i>Wertpapierkennnummer</i> , WKN)	A2LQRZ

NC10 Notes:

International Securities Identification Number (ISIN)	XS2011260705
Common Code	201126070
German Securities Identification Number (<i>Wertpapierkennnummer</i> , WKN)	A2LQR0

Ratings of the Notes⁸

The Notes are expected to be rated "BBB+"⁹ by Standard & Poor's, "Baa3"¹⁰ by Moody's and "BBB"¹¹ by Scope.

Each of these rating agencies has a registered domicile in the European Union and has been declared to be registered in accordance with Regulation (EC) No. 1060/2009 of the European Parliament and of the Council of September 16, 2009 on rating agencies by the ESMA (source: ESMA, Press release of October 31, 2011, ESMA, List of registered and Certified Credit Rating Agencies, <http://www.esma.europa.eu/page/List-registered-and-certified-CRAs>).

A credit rating is not a recommendation to buy, sell or hold securities and may be revised or withdrawn by the rating agency at any time.

Indication of Yield

The yield in respect of the NC5.5 Notes from the Issue Date to the NC5.5 First Reset Date is 1.750 % *per annum*, calculated on the basis of the NC5.5 Issue Price. Such yield is calculated in accordance with the ICMA (*International Capital Markets Association*) Method.

The yield in respect of the NC10 Notes from the Issue Date to the NC10 First Reset Date is 2.875 % *per annum*, calculated on the basis of the NC10 Issue Price. Such yield is calculated in accordance with the ICMA (*International Capital Markets Association*) Method.

Third Party Information

With respect to any information included herein and specified to be sourced from a third party (i) the Issuer confirms that any such information has been accurately reproduced and as far as the Issuer is aware and is able to ascertain from information available to it from such third party, no facts have been omitted the omission of which would render the reproduced information inaccurate or misleading and (ii) neither the Issuer nor any Joint Bookrunner has independently verified any such information and neither the Issuer nor any Joint Bookrunner accepts any responsibility for the accuracy thereof.

⁸ Rating information is merely an aid for investors for the purposes of decision-making and cannot replace an individual judgment to be made by the investor and may not be taken as a recommendation to purchase or sell certain Notes. Ratings are merely intended as a support when making an investment decision and are only one of the factors relevant to an evaluation, which factor must be seen and weighted in the context of other factors. As ratings often are amended only after the creditworthiness of an issuer or guarantor has changed, investors have to make their own judgments although a rating may exist.

⁹ Standard & Poor's defines "BBB+" as follows: An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to weaken the obligor's capacity to meet its financial commitments on the obligation. Ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

¹⁰ Moody's defines "Baa3" as follows: Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.

¹¹ Scope defines "BBB" as follows: Ratings at the BBB level reflect an opinion of good credit quality.

Documents available

So long as the Notes are outstanding, copies of the following documents will be available from the registered office of the Issuer and from the specified office of the Principal Paying Agent:

- (b) the articles of association (with an English translation where applicable) of the Issuer;
- (c) a copy of this Prospectus;
- (d) the documents incorporated herein by reference; and
- (e) any future information memoranda and supplements to this Prospectus and any other documents incorporated herein or therein by reference.

This Prospectus, any supplements thereto as well as the documents incorporated by reference in this Prospectus are available on the website of the Luxembourg Stock Exchange (www.bourse.lu).

DOCUMENTS INCORPORATED BY REFERENCE

The pages set out in the "Table of documents incorporated by reference" below which are extracted from the following documents shall be deemed to be incorporated in, and to form part of, this Prospectus: (a) the consolidated annual report 2017 and the annual report 2018 of Merck, including the audited consolidated financial statements of Merck for the fiscal years ending December 31, 2017 and December 31, 2018, in each case including the respective auditor's report opinion (German and English language version) and (b) the Merck KGaA 1st Quarter 2019 - Quarterly Statement , including the unaudited supplemental financial information as of March 31, 2019 (German and English language version).

Any information not incorporated by reference into this Prospectus but contained in one of the documents mentioned as source documents in the cross reference list below is either not relevant for the investor or covered in another part of this Prospectus.

The Issuer will provide, without charge, upon written or oral request, a copy of any or all of the documents incorporated herein by reference. Requests for such documents should be directed to the Issuer at its registered office set out at the end of this Prospectus.

Table of documents incorporated by reference:

- (1) Audited consolidated financial statements for the fiscal year ending December 31, 2017 (IFRS) (Extracted from the English language Merck KGaA 2017 Annual Report (German language version is controlling and binding))

Consolidated Income Statement	page 206
Consolidated Statement of Comprehensive Income	page 207
Consolidated Balance Sheet	page 208
Consolidated Cash Flow Statement	page 209
Consolidated Statement of Changes in Net Equity	pages 210 - 211
Notes to the Group accounts.....	pages 212 - 298
Unaudited Responsibility Statement.....	page 299
Auditor's Report.....	pages 300 - 305

- (2) Audited consolidated financial statements for the fiscal year ending December 31, 2018 (IFRS) (Extracted from the English language Merck KGaA 2018 Annual Report (German language version is controlling and binding))

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Consolidated Statement of Comprehensive Income	page 201
Consolidated Balance Sheet	page 202
Consolidated Cash Flow Statement	page 203
Consolidated Statement of Changes in Net Equity	pages 204 - 205
Notes to the Group accounts.....	pages 206 - 321
Unaudited Responsibility Statement.....	page 322
Auditor's Report.....	pages 323 - 329

(3) Unaudited supplemental financial information as of March 31, 2019 (IFRS) (Extracted from the English language Merck KGaA 1st Quarter 2019 - Quarterly Statement (German language version is controlling and binding))

Consolidated Income Statement	page 30
Consolidated Statement of Comprehensive Income	page 31
Consolidated Balance Sheet	page 32
Consolidated Cash Flow Statement	page 33
Consolidated Statement of Changes in Equity	pages 34-35
Information by Business Sector.....	page 36
Significant events during the reporting period	page 37
Effects of new accounting standards and other disclosure changes.....	pages 39 -46

(4) Audited consolidated financial statements for the fiscal year ending December 31, 2017 (IFRS) (Extracted from the German language Merck KGaA 2017 Annual Report)

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Konzerngesamtergebnisrechnung	page 207
Konzernbilanz.....	page 208
Konzernkapitalflussrechnung	page 209
Konzerneigenkapitalveränderungsrechnung	pages 210 - 211
Konzernanhang	pages 212 - 298
Ungeprüfte Versicherung der gesetzlichen Vertreter.....	page 299
Bestätigungsvermerk des Abschlussprüfers	pages 300 - 305

(5) Audited consolidated financial statements for the fiscal year ending December 31, 2018 (IFRS) (Extracted from the German language Merck KGaA 2018 Annual Report)

Konzern-Gewinn und Verlustrechnung	page 200
Konzerngesamtergebnisrechnung	page 201
Konzernbilanz.....	page 202
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Ungeprüfte Versicherung der gesetzlichen Vertreter.....	page 322
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(6) Unaudited supplemental financial information as of March 31, 2019 (IFRS) (Extracted from the German language Merck KGaA 1st Quarter 2019 - Quarterly Statement)

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Konzerngesamtergebnisrechnung	page 31
Konzernbilanz	page 32
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Informationen nach Unternehmensbereichen	page 36
Wesentliche Ereignisse des Berichtszeitraums	page 37
Auswirkungen neuer Rechnungslegungsstandards und sonstiger Ausweisänderungen	pages 39 -46

NAMES AND ADDRESSES

ISSUER

Merck KGaA

Frankfurter Str. 250

64293 Darmstadt

Federal Republic of Germany

PRINCIPAL PAYING AGENT

Deutsche Bank Aktiengesellschaft

Taunusanlage 12

60325 Frankfurt am Main

Federal Republic of Germany

LISTING AGENT

Deutsche Bank Luxembourg S.A.

2 Boulevard Konrad Adenauer

1115 Luxembourg

The Grand Duchy of Luxembourg

JOINT BOOKRUNNERS

Banco Bilbao Vizcaya Argentaria, S.A.

Ciudad BBVA

C/ Saucedo, 28

Edificio Asia - 2nd Floor

28050 Madrid

Spain

Bank of China Limited, London Branch

1 Lothbury

London EC2R 7DB

United Kingdom

Barclays Bank PLC

The North Colonnade

Canary Wharf

London E14 4BB

United Kingdom

Bayerische Landesbank

Brienner Str. 18

80333 Munich

Federal Republic of Germany

BNP PARIBAS

10 Harewood Avenue

London NW1 6AA

United Kingdom

Commerzbank Aktiengesellschaft

Kaiserstraße 16 (Kaiserplatz)

60311 Frankfurt am Main

Federal Republic of Germany

Deutsche Bank Aktiengesellschaft

Mainzer Landstraße 11-17

60329 Frankfurt am Main

Federal Republic of Germany

**DZ BANK AG Deutsche Zentral-
Genossenschaftsbank, Frankfurt am Main**

Platz der Republik

60325 Frankfurt am Main

Federal Republic of Germany

Goldman Sachs International

Peterborough Court

133 Fleet Street

EC4A 2BB London

United Kingdom

Landesbank Hessen-Thüringen Girozentrale

Neue Mainzer Strasse 52 - 58

60311 Frankfurt am Main

Federal Republic of Germany

J.P. Morgan Securities plc

25 Bank Street
Canary Wharf
London E14 5JP
United Kingdom

Landesbank Baden-Württemberg

Am Hauptbahnhof 2
70173 Stuttgart
Federal Republic of Germany

Merrill Lynch International

2 King Edward Street
London EC1A 1HQ
United Kingdom

Mizuho Securities Europe GmbH

Taunustor 1
60310 Frankfurt am Main
Federal Republic of Germany

NatWest Markets Plc.

250 Bishopsgate
London, EC2M 4AA
United Kingdom

Skandinaviska Enskilda Banken AB (publ)

Kungsträdgårdsgatan 8
SE-106 40 Stockholm
Sweden

Société Générale

29, boulevard Haussmann
75009 Paris
France

Standard Chartered Bank

1 Basinghall Avenue
London EC2V 5DD
United Kingdom

UniCredit Bank AG

Arabellastr. 12
81925 Munich
Federal Republic of Germany

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60322 Frankfurt am Main

Federal Republic of Germany