

Report on Expected Developments

The following report provides a forecast for fiscal 2021 of the development of the Merck Group and its three business sectors: Healthcare, Life Science and Performance Materials (to be renamed Electronics).

The divestment of Allergopharma to Dermapharm Beteiligungs GmbH ("Dermapharm") closed on March 31, 2020. The allergy business of Merck in Europe was transferred to Dermapharm on March 31, 2020. The transfer of the Allergopharma business in China closed on August 31, 2020. Accordingly, in 2021 we report a portfolio effect from this transaction. As expected, however, this will not be material.

Moreover, on December 22, 2020, Merck fully acquired AmpTec GmbH, Hamburg, a leading contract development and manufacturing organization for mRNA, which is used in vaccines, treatments and diagnostics in connection with Covid-19 and numerous other diseases. We do not expect this acquisition to have a material portfolio effect either.

In the United States, Merck was involved in patent litigation with Biogen Inc., USA. Biogen sued Merck for having allegedly infringed a patent in connection with Rebif®. On September 28, 2020, the U.S. Court of Appeals for the Federal Circuit set aside the first-instance decision and declared Biogen's patent invalid. Therefore, a provision amounting to € 365 million for this patent litigation was released. The income from the release of the provision led to a corresponding increase in EBITDA pre in fiscal 2020. This forecast and in particular, organic growth rates, relate to a year-earlier figure adjusted for the income from the release of the provision.

As regards the Covid-19 pandemic and the negative effects thereof, we assume that the business recovery that started in the second half of 2020 will continue in fiscal 2021. At present, we do not assume that further disease waves will have a negative effect comparable to that seen in the first half, especially on the Healthcare and Performance Materials business sectors. For Life Science, we expect significantly positive contributions owing to the Covid-19 pandemic, particularly in the Process Solutions business unit. The increasing availability of Covid-19 vaccines and the associated immunization of the population will contribute to a further stabilization of the societal and economic situation. Nevertheless, this forecast is subject to a higher degree of estimation uncertainty than was the case in previous years.

Forecast for the Merck Group

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€ million	Actual results 2020	Forecast for 2021	Key assumptions
Net sales	17,534	<ul style="list-style-type: none"> • Strong organic growth • Negative foreign exchange effect of -2% to -5% 	<ul style="list-style-type: none"> • Organic growth driven by all three business sectors • Negative foreign exchange effects from the U.S. dollar in particular and individual growth markets
EBITDA pre ¹	5,201	<ul style="list-style-type: none"> • Organic growth in the high single-digit to low teens percentage range • Negative foreign exchange effect of -2% to -5% 	<ul style="list-style-type: none"> • Life Science with growth in the low teens range • Strong growth in Healthcare
Operating Cash Flow	3,477	<ul style="list-style-type: none"> • Slight increase over the previous year 	<ul style="list-style-type: none"> • Solid to strong growth in Performance Materials • Realization of synergies totaling approximately € 83 million as planned from the integration of Versum Materials into Performance Materials • Negative foreign exchange effects from the U.S. dollar in particular and individual growth markets • Rise in EBITDA pre • Increase in net working capital and adverse impact from negative foreign exchange effects • Payments in connection with the transformation and growth program THRIVE commenced by Healthcare in 2020 • Higher fluctuation corridors than for net sales and EBITDA pre are to be expected

¹ EBITDA pre of fiscal 2020 included income from the release of a provision for patent litigation amounting to € 365 million. Including this amount in the previous year, we expect slight to moderate organic growth.

Net sales

For the Merck Group in fiscal 2021, we expect strong organic net sales growth, driven mainly by our Healthcare and Life Science business sectors. For Performance Materials we forecast a solid organic increase. The divestment of Allergopharma will be reported in the first three quarters of 2021 as a portfolio effect, which will not be material for the Group. With regard to foreign exchange developments, we continue to expect a volatile environment due to political and macroeconomic developments. We expect a negative foreign exchange effect between -2% and -5%, These effects will result in particular from the development of the U.S. dollar as well as individual growth market currencies. This forecast for 2021 is based on a euro-U.S. dollar exchange rate in a corridor of 1.17 to 1.22.

EBITDA pre

EBITDA pre is our key financial indicator to steer operating business. For fiscal 2021, we expect organic growth of EBITDA pre in a high single digit to low teens percentage range. All three business sectors will contribute to this development with organic growth. Excluding the release of the provision for the patent litigation with Biogen amounting to € 365 million, we expect that in fiscal 2021, the EBITDA pre margin will be higher than in fiscal 2021. Including the income from the release of the provision in the previous year, we are forecasting moderate organic growth and a margin below that of the previous year.

The expected foreign exchange development is forecast to adversely affect Group EBITDA pre by between -2% and -5% compared with fiscal 2020; it is likely to be seen mainly in the Healthcare and Performance Materials businesses. In this context, we assume that in particular, the euro-U.S. dollar exchange rate will impact foreign exchange developments. These foreign exchange effects will be partly mitigated by currency hedging, although we do not hedge all growth market currencies.

Operating cash flow

Apart from EBITDA pre, operating cash flow as of fiscal 2021 will represent one of our key performance indicators at Group level and replace business free cash flow (BFCF) as a steering parameter. Operating cash flow takes the cash-relevant variables before investments and financing into account and serves to manage internal financing power and liquidity. In general, the forecast for operating cash flow is subject to a higher fluctuation corridor than the forecast for net sales, EBITDA pre and the previous steering parameter BFCF.

The expected strong development of operating business in fiscal 2021 will be a main driver of operating cash flow. However, in fiscal 2020 operating cash flow reflected the increasing receipt of payments from customers in the fourth quarter of 2020. Since we do not expect a comparable effect in fiscal 2021, this will have a negative impact on the steering parameter. We continue to expect payouts in the context of ongoing restructuring programs on a larger scale in 2021. Among other things, this relates to the transformation and growth program THRIVE that was launched in Healthcare in 2020. Negative foreign exchange effects will also weigh on operating cash flow. Against this backdrop, overall we expect a slight increase in 2021.

Forecast for the Healthcare business sector

Forecast for the Healthcare Business Sector

€ million	Actual results 2020	Forecast for 2021	Key assumptions
Net Sales	6,639	<ul style="list-style-type: none"> • Strong organic growth • Slight to moderately negative foreign exchange effect 	<ul style="list-style-type: none"> • Roughly stable organic development of the core business • Substantial contribution to growth by Mavenclad® and Bavencio® • Negative foreign exchange effects, in particular the U.S. dollar and individual growth market currencies
EBITDA pre ¹	2,267	<ul style="list-style-type: none"> • Strong organic growth • Strongly negative foreign exchange effect 	<ul style="list-style-type: none"> • Expected substantial earnings contribution especially from Mavenclad® can more than offset the effect from the expected decline in sales of Rebif® • Marketing and selling expenses as well as research and development costs with decrease in percentage of sales due to systematic cost management and strict pipeline prioritization • Negative foreign exchange effects, in particular the U.S. dollar and individual growth market currencies

¹ EBITDA pre of fiscal 2020 included income from the release of a provision for patent litigation amounting to € 365 million. Including this amount in the previous year, we expect a strong organic decline.

Net sales

Following the significantly negative effects from the Covid-19 pandemic that impacted the Healthcare business sector in fiscal 2020, we now expect to see strong organic growth of net sales in 2021. This will be driven mainly by Mavenclad® and Bavencio®. We thus believe that both products will generate a further significant increase in sales. For the core business, we forecast a roughly stable development. This reflects the continued competitive pressure and the associated decline in sales of Rebif®. Although the negative impacts of the volume-based procurement regulations that took effect in China in 2020 will now be seen in full in 2021, we forecast a roughly stable organic development for our products in the General Medicine & Endocrinology franchise. We assume that General Medicine & Endocrinology will resume its growth course as of 2022. The performance of the Fertility franchise will have a mitigating effect. At present we do not assume that the Covid-19 pandemic will have considerable negative effects on Healthcare sales. We forecast a slight to moderately negative foreign exchange effect.

EBITDA pre

For 2021, we expect EBITDA pre of the Healthcare business sector to see strong organic growth. The negative earnings effects resulting from the expected decline in Rebif® sales should be more than offset by substantial earnings contributions from Mavenclad®. In addition, we will continue our rigorous cost management and strict pipeline prioritization. We therefore expect marketing and selling expenses as well as research and development costs to decline as a percentage of sales. Research and development costs will remain heavily

dependent on the development of clinical data and further expected study results. We forecast the upfront cash payment in the context of the global strategic alliance with GlaxoSmithKline for the joint development and marketing of bintrafusp alfa to have a positive earnings effect in the higher double-digit euro millions, which will be recognized in other operating income. The amount generally depends on the cost evolution. Development milestones will no longer occur subsequent to the recently communicated discontinuation of the INTR@PID Lung 037 trial. For fiscal 2021, we expect income from active portfolio management in a low to mid double-digit million range as well as income from the realization of milestone payments within the scope of our strategic alliance with Pfizer to develop and commercialize Bavencio®. By contrast, we expect foreign exchange effects to weigh heavily on EBITDA pre.

Forecast for the Life Science business sector

Forecast for the Life Science Business Sector

€ million	Actual results 2020	Forecast for 2021	Key assumptions
Net Sales	7,515	<ul style="list-style-type: none"> Organic growth in the low teens percentage range Slight to moderately negative foreign exchange effect 	<ul style="list-style-type: none"> All businesses contribute to growth Process Solutions remains the main driver of growth, followed by Applied Solutions Negative foreign exchange effects from the U.S. dollar in particular
EBITDA pre	2,405	<ul style="list-style-type: none"> Organic earnings growth in the low teens percentage range Slightly negative foreign exchange effects 	<ul style="list-style-type: none"> Organic earnings growth owing to the expected sales growth and positive Covid-19 effects amid a slight margin improvement Negative foreign exchange effects primarily owing to the development of individual growth market currencies

Net sales

For the Life Science business sector in fiscal 2021, we forecast growth in the low teens percentage range. The Process Solutions business unit will clearly remain the strongest driver of growth and will be further propelled by significantly positive Covid-19 effects. Solid organic growth in Applied and Research Solutions will also contribute positively to the overall performance of Life Science. We expect no material portfolio effects from the acquisitions of AmpTec and Resolution Spectra Systems S.A.S., France. We forecast a slight to moderately negative foreign exchange effect.

EBITDA pre

In 2021, the Life Science business sector is expected to show organic growth of EBITDA pre in the low teens percentage range compared with the previous year. The persistently dynamic demand trend and clearly positive Covid-19 effects will contribute to organic earnings growth. Based on our estimates, the foreign exchange impact on earnings in fiscal 2021 should be only slightly negative.

Forecast for the Performance Materials business sector

Forecast for the Performance Materials Business Sector

€ million	Actual results 2020	Forecast for 2021	Key assumptions
Net sales	3,380	<ul style="list-style-type: none"> • Solid organic growth • Slight to moderately negative foreign exchange effect 	<ul style="list-style-type: none"> • Strong growth momentum in Semiconductor Solutions • Positive organic growth in Surface Solutions • High organic growth in OLED materials • Negative foreign exchange effects from key Asian currencies and the U.S. dollar
EBITDA pre	1,024	<ul style="list-style-type: none"> • Solid to strong organic growth • Significant to strongly negative foreign exchange effect 	<ul style="list-style-type: none"> • Growth in Semiconductor Solutions can more than offset price decline in Liquid Crystals supported by active cost management • Planned realization of synergies totaling around € 83 million from the integration of Versum Materials • Negative foreign exchange effects from key Asian currencies and the U.S. dollar

Net sales

Following the successful realignment of our portfolio, we expect solid organic growth of net sales in our Performance Materials business sector in fiscal 2021. Particularly for the Semiconductor Solutions business unit we forecast strong growth dynamics, which will exceed market growth in the medium term. In addition to sales by Semiconductor Materials, the project business of Delivery Systems & Services is expected to contribute significantly to organic growth. We expect our Surface Solutions business to see a positive organic development in 2021. Our Liquid Crystals business will still face continued price erosion owing price pressure common in this industry. We forecast a slight to moderately negative foreign exchange effect.

EBITDA pre

For our Performance Materials business sector, we expect a solid to strong organic increase in EBITDA pre in 2021. The price decline in liquid crystals will be more than offset by anticipated growth in Semiconductor Solutions and by active cost management. This forecast includes the planned realization of synergies amounting to totaling around € 83 million from the integration of Versum Materials. We assume that the expected foreign exchange development will have a significant to strongly adverse impact on EBITDA pre.

Corporate and Other

We expect that in fiscal 2021, Corporate and Other will be below the previous year's level. This is mainly due to the positive effects expected from foreign currency hedging, which will partly offset negative foreign exchange effects in the business sectors.