GOOD START TO THE YEAR DESPITE FIRST COVID-19 IMPACT

Merck KGaA, Darmstadt, Germany  Q1 2020 results

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disclaimer

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Agenda

01 Executive summary
02 Financial overview
03 Guidance
EXECUTIVE SUMMARY
Beyond focusing on the health & safety of our employees and on business continuity, we have contributed to help face global COVID-19 pandemic.

**Our Business:**
- Supplying **critical** raw materials, components, and manufacturing products for vaccine production & diagnostics
- **Life Science** continues to keep global supply chain operational by implementing additional safety precautions to provide **indispensable** products and services to aid COVID-19 response

**Collaborations:**
- Part of pharma and Life Science **consortium together with the Bill & Melinda Gates Foundation**
- Life Science actively collaborating with leading institutions, to speed up development, production & delivery of diagnostics, vaccines and treatment of COVID-19.

**Research Grants:**
- **2019:** €1 m Future Insight Prize for outstanding research in field of pandemic preparedness
- **2020:** up to €500,000 p.a. for 3 years and extension option for technological solutions for pandemic outbreak preparedness and fighting viral infections

**Donations:**
- **290,000 units of interferon (Rebif®) to WHO** for global SOLIDARITY trial, investigating therapies for treating COVID-19
- **Liquid Handling Center of Life Science**, increasing capacity to produce and donate **250,000 liters of disinfectant**
- **Donated 2,000,000 FFP2-Masks** to local communities in U.S. and Europe
**Highlights**

**Operations**

**Healthcare:** double-digit growth fueled by Mavenclad® ramp-up and General Medicine

**Life Science:** Process Solutions with double digit growth while Academia and Applied end markets reflect temporary demand slow down in Asia due to COVID-19

**Performance Materials:** Strong uptake of Semiconductor Solutions offset by Display and Surface Solutions decline; Versum integration on track

**Financials**

Q1 organic sales growth of +7.6%;
Q1 organic EBITDA pre growth of +14.5%

**Guidance:**
Net sales: €16.8 – 17.8 bn
EBITDA pre: €4,350 – 4,850 m
EPS pre: €5.50 – 6.35

Net financial debt to EBITDA pre at 2.6 on March 31, 2020 – continued focus on deleveraging
Healthcare and Life Science fuel strong organic top- and bottom-line performance; significant portfolio effect from Versum

- Healthcare with double-digit growth from strong General Medicine (in parts supported by COVID-19 driven pull-in effect), continued Mavenclad® ramp-up, and strong demand for Oncology
- Performance Materials shows expected strong uptake of Semiconductor Solutions offset by declining market demand in Display and in Surface Solutions impacted by COVID-19

- EBITDA pre growing twice as fast as net sales organically fueled by strong top-line growth, and cost management further benefitting from reduced travel & events during COVID-19 pandemic
- Positive FX tailwinds on EBITDA pre mainly from U.S. dollar and major Asian currencies

<table>
<thead>
<tr>
<th>Q1 YoY Net Sales</th>
<th>Organic</th>
<th>Currency</th>
<th>Portfolio</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>15.3%</td>
<td>-0.4%</td>
<td>0.0%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Life Science</td>
<td>5.6%</td>
<td>0.9%</td>
<td>0.0%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Performance Materials</td>
<td>-5.4%</td>
<td>2.4%</td>
<td>52.1%</td>
<td>49.0%</td>
</tr>
<tr>
<td>Group</td>
<td>7.6%</td>
<td>0.6%</td>
<td>8.4%</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q1 YoY EBITDA pre</th>
<th>Q1 2019</th>
<th>Organic</th>
<th>Currency</th>
<th>Portfolio</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>929</td>
<td>14.5%</td>
<td>2.0%</td>
<td>10.7%</td>
<td>1,181</td>
</tr>
</tbody>
</table>

Totals may not add up due to rounding
Organic growth driven by North America, Europe and Latin America

Regional breakdown of net sales [€ m]

- North America: +12.0% org.
- Europe: +9.7% org.
- Latin America: +21.6% org.
- Asia-Pacific: +1.2% org.
- Middle East & Africa: -4.0% org.

Q1 2020
Net sales: €4,370 m

Regional organic development

- About stable APAC due to double-digit growth of General Medicine, more than offsetting COVID-19 related flat Life Science and decline in Display Solutions
- Strong Europe driven by double-digit growth in General Medicine and Process Solutions and support from Mavenclad®
- North America reflects robust demand in Life Science and strong uptake of Mavenclad®
- Double-digit growth in LATAM from strong Healthcare & Life Science demand
- Middle East and Africa with moderate decline due to phasing in Healthcare
02 Financial Overview
## Q1 2020: Overview

### Key figures

<table>
<thead>
<tr>
<th>[€m]</th>
<th>Q1 2019</th>
<th>Q1 2020</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>3,746</td>
<td><strong>4,370</strong></td>
<td>16.7%</td>
</tr>
<tr>
<td>EBITDA pre</td>
<td>929</td>
<td><strong>1,181</strong></td>
<td>27.2%</td>
</tr>
<tr>
<td>Margin (in % of net sales)</td>
<td>24.8%</td>
<td>27.0%</td>
<td></td>
</tr>
<tr>
<td>EPS pre</td>
<td>1.13</td>
<td><strong>1.50</strong></td>
<td>32.7%</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>493</td>
<td><strong>516</strong></td>
<td>4.9%</td>
</tr>
</tbody>
</table>

### Comments

- Net sales driven by organic growth of Healthcare and Life Science, further fueled by portfolio effect from Versum
- EBITDA pre & margin increase due to strong operating leverage in Healthcare and Life Science
- EPS pre growing faster than EBITDA pre supported by better financial result
- Higher operating cash flow reflects strong business performance partially compensated by trade account receivables build-up due to COVID-19
- Working capital follows business activity

<table>
<thead>
<tr>
<th>[€m]</th>
<th>Dec. 31, 2019</th>
<th>March 31, 2020</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net financial debt</td>
<td>12,363</td>
<td><strong>12,285</strong></td>
<td>-0.6%</td>
</tr>
<tr>
<td>Working capital</td>
<td>3,944</td>
<td><strong>4,392</strong></td>
<td>11.3%</td>
</tr>
<tr>
<td>Employees</td>
<td>57,071</td>
<td><strong>57,451</strong></td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Totals may not add up due to rounding.
Reported figures

Reported results

<table>
<thead>
<tr>
<th></th>
<th>Q1 2019</th>
<th>Q1 2020</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>379</td>
<td>716</td>
<td>89.0%</td>
</tr>
<tr>
<td>Financial result</td>
<td>-113</td>
<td>-98</td>
<td>-12.5%</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>266</td>
<td>617</td>
<td>131.9%</td>
</tr>
<tr>
<td>Income tax</td>
<td>-67</td>
<td>-159</td>
<td>137.4%</td>
</tr>
<tr>
<td>Effective tax rate (%)</td>
<td>25.2%</td>
<td>25.8%</td>
<td></td>
</tr>
<tr>
<td>Net income</td>
<td>189</td>
<td>456</td>
<td>141.9%</td>
</tr>
<tr>
<td>EPS (€)</td>
<td>0.43</td>
<td>1.05</td>
<td>144.2%</td>
</tr>
</tbody>
</table>

Comments

• Higher EBIT driven by strong top line growth in Healthcare and Life Science as well as consolidation of Versum and divestment gain from Allergopharma*

• Financial result benefits from comparison with last years’ revaluation of F-Star purchase option (-€45 m) partially offset by the current year higher interest expense related to Versum financing

• Effective tax rate within guidance range of ~24-26%

• Higher net income and EPS reflects higher EBIT and better financial result

* closed March 31st, 2020

Totals may not add up due to rounding
Healthcare: Strong General Medicine supported by COVID-19 pull-in effect and ongoing Mavenclad® uptake; improved margins from top line leverage

Healthcare P&L

<table>
<thead>
<tr>
<th>[€m]</th>
<th>Q1 2019</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>1,481</td>
<td>1,701</td>
</tr>
<tr>
<td>Marketing and selling</td>
<td>-550</td>
<td>-423</td>
</tr>
<tr>
<td>Administration</td>
<td>-88</td>
<td>-79</td>
</tr>
<tr>
<td>Research and development</td>
<td>-380</td>
<td>-417</td>
</tr>
<tr>
<td>EBIT</td>
<td>128</td>
<td>422</td>
</tr>
<tr>
<td>EBITDA</td>
<td>329</td>
<td>501</td>
</tr>
<tr>
<td>EBITDA pre</td>
<td>332</td>
<td>472</td>
</tr>
</tbody>
</table>

Margin (in % of net sales) 22.4% 27.8%

Net sales bridge

- €1,481 m 15.3% -0.4% 0.0% €1,701 m

EBITDA pre bridge

- €332 m 40.9% 1.3% 0.0% €472 m

Comments

- Strong demand in General Medicine supported by COVID-19 pull-in and phasing
- Mavenclad® growth vs. Q1 2019, especially in U.S.; however about flat vs. Q4 2019 due to COVID-19, while Rebif® posts less pronounced decline explained by U.S. inventory effects, and Russia tender phasing
- Strong growth of Erbitux® particularly in Europe offsetting weaker China amidst COVID-19; Bavencio® developing as expected
- Moderate Fertility decline from COVID-19 impact most pronounced in China; strong first quarter in U.S.
- M&S decrease due to stringent cost management, resource prioritization across franchises and expired amortization of Rebif®
- R&D cost control offset by Avelumab H&N study termination accrual (-€15 m)
- Higher EBITDA pre driven by strong top-line performance and rigorous cost management

Totals may not add up due to rounding
Mavenclad® - Global launch continues to make progress, with Q1 showing initial impact of COVID; regaining of momentum expected in H2 2020

- Approved in 78 countries
- Launches progressing well, with momentum into early Q1 across the U.S. and EU4
- Number of prescribers increasing +70% in the US, with average depth increasing +50%¹
- COVID-19 has restricted HCP access and forced pivot to digital engagement only
- Significant decline of patient consults with neurologists, leading to fewer treatment initiations and fewer treatment switches

Global: First signs of COVID-19 related slow-down visible as of March, impacting Q1 2020

1: MSLL SRF data; Internal data on file/March 2020; Acronyms: HCP = Healthcare Professional; EU4 = Germany, UK, Spain, Italy
Mavenclad® - Aiming to capitalize on “waitlisted” patient opportunity amid COVID-19 pandemic

**HE MS market:**
Significant opportunity for rebound in H2

- Diverse guidelines published – KOL debate ongoing
- **Infection risk number 1 choice driver**
- 15% of HE patient starts put on hold and a further 5% “bridged” to platform therapies¹

**US dynamic market²:**

<table>
<thead>
<tr>
<th></th>
<th>Pre COVID</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Efficacy</strong></td>
<td>15.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Platform</strong></td>
<td></td>
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</tbody>
</table>

**Mavenclad®:**
Profile suited to evolved choice drivers

- Lack of continuous immunosuppression³
- **Transient preferential targeting** of B and T lymphocytes⁴
- Specifically important for viral defense ...
  - Moderate T cell reduction with lower impact on CD8+⁴
  - Minimal impact on innate immunity⁵-⁷

Mavenclad® is easy to use, with short-course at-home oral dosing and a low monitoring burden³

- **High efficacy that is sustained** beyond total lymphocyte recovery³

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Acronyms: HE = High Efficacy, INJ = Injectables, KOL = Key Opinion Leader
Bavencio® - Enhancing its foundation in GU cancers with transformative OS data from JAVELIN Bladder 100 trial featured at ASCO 2020 plenary session

- **First immunotherapy to significantly prolong OS vs standard of care** in 1L locally advanced or metastatic urothelial carcinoma, and first to demonstrate OS benefit regardless of PD-L1 status
- **Breakthrough Therapy Designation**, completion of sBLA submission, and review under the FDA’s Real-Time Oncology Review (RTOR) program announced on April 9, 2020
- New treatment paradigm offered by the unique JAVELIN Bladder 100 Regimen, potential to be practice changing, offering benefit beyond chemotherapy, the standard of care for the last 20+ years
- Launch to leverage existing RCC resources and experiences

**Urothelial Cancer 1L (UC)**

- (~90% of bladder cancers, 10th most prevalent cancer globally)

**Renal Cell Carcinoma 1L (RCC)**

- Approved by U.S. FDA in May 2019, by the European Commission in October 2019, and by the Japanese PMDA in December 2019
- Participating in the establishment of IO–TKI as the leading class in 1L mRCC
- Expected to benefit from strong 1L UC data:
  - Enhanced overall brand value (first demonstrated OS benefit for Bavencio®)
  - Greater efficiency (75-80% overlap with UC and RCC prescribers in key markets)

**NSCLC 1L**

- Ph III data read-out expected in 2021
- Core tumor for IO, 1L NSCLC remains a large indication
- Highly competitive landscape - Complex study design (e.g. multiple arms) might provide differentiated data in patient subgroups

**Acronyms:** EMA = European Medicines Agency, FDA = Food and Drug Administration, GU = genitourinary, IO = Immuno-Oncology, mRCC = Metastatic Renal Cell Carcinoma, OS = Overall Survival, PMDA = Pharmaceuticals and Medical Devices Agency, sBLA = supplemental Biologics License Application, TKI = Tyrosine Kinase Inhibitor
Core business - Q1 growth rates reflect initial effects of COVID-19 and indicate future developments

Q1 2020 net sales contribution\(^1\) & org. growth (\(\%\)) in Q1 2020 (FY 2019)

- **Fertility**: 19%
- **General Medicine & Endocrinology**: 47%
- **Rebif\(^{®}\)**: 20%
- **Erbitux\(^{®}\)**: 14%

**Expected Impact of COVID-19**

- **General Medicine & Endocrinology**
  - Q1 supported by COVID-19 related moderate stocking effects across the globe, suggesting phasing impact in upcoming quarters
  - Rx duration for Glucophage\(^{®}\) and Concor\(^{®}\) extended in most Chinese provinces to reduce frequency of hospital visits
  - Chinese VBP roll out expected to continue despite COVID-19

- **Fertility**
  - Medical societies issued guidance for suspension of new, non-urgent treatments\(^2\) in late Q1, leading to temporary closure of clinics globally
  - Situation now improving, >90% of Chinese centers reopened at reduced capacity, several APAC and EMEA clinics reopening in line with newly published guidance on recommencing of ART\(^3\)
  - Catch-up effects expected post-recovery

- **Rebif\(^{®}\)**
  - Potential benefit from changed treatment patterns:
    - Decreased switches from Rebif\(^{®}\) to High-Efficacy drugs due to guidelines and less frequent patient visits
    - Increased new patient numbers due to greater preference for platform therapies

- **Erbitux\(^{®}\)**
  - Decreased diagnosis rates due to lower physician/hospital access given prioritization of COVID-19 treatment

Pipeline - 2020 characterized by developmental progress of innovative Oncology, Immuno-Oncology and Neurology assets

<table>
<thead>
<tr>
<th>Q1 2020</th>
<th>Q2 2020</th>
<th>H2 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASCO 2020</strong>&lt;br&gt;May 29 – Jun 2 (Virtual)</td>
<td><strong>Bavencio®</strong>: Late-breaking JAVELIN Bladder 100 data (1L urothelial carcinoma) presented at the Plenary Session on May 31&lt;br&gt;<strong>Tepotinib</strong>: Primary efficacy &amp; biomarker analyses from VISION study for first-in-class tepotinib¹ in NSCLC with METex14 skipping alterations</td>
<td></td>
</tr>
<tr>
<td><strong>Tepotinib (c-Met-inhibitor)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• METex14: Approved in Japan on March 25, 2020 ✓&lt;br&gt;• METex14: Expected filing in the USA in H1 2020 (BTD granted in 2019)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bavencio® (Avelumab/Anti-PD-L1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• JAVELIN Bladder 100 (1L urothelial carcinoma): Expected FDA decision &amp; potential launch</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bintrafusp alfa (Anti-PD-L1/TGF-ß-Trap)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Initiation of further studies (incl. TNBC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evobrutinib (BTK-inhibitor)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RMS: Recruitment in the modified studies to start shortly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹: not yet approved in any markets outside of Japan; Acronyms: BTD = Breakthrough Therapy Designation, EMA = European Medicines Agency, FDA = U.S. Food and Drug Administration, NSCLC = Non-Small-Cell Lung Carcinoma, RMS = Relapsing Multiple Sclerosis, RTOR = Real-Time Oncology Review, sBLA = Supplemental Biologics License Application, TNBC = Triple-Negative Breast Cancer, UC = Urothelial Cancer
Life Science: Showing strong resilience, Process Solutions with double-digit growth, Research and Applied flat

<table>
<thead>
<tr>
<th>[Cm]</th>
<th>Q1 2019</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>1,661</td>
<td>1,769</td>
</tr>
<tr>
<td>Marketing and selling</td>
<td>-470</td>
<td>-498</td>
</tr>
<tr>
<td>Administration</td>
<td>-88</td>
<td>-89</td>
</tr>
<tr>
<td>Research and development</td>
<td>-62</td>
<td>-75</td>
</tr>
<tr>
<td>EBIT</td>
<td>313</td>
<td>345</td>
</tr>
<tr>
<td>EBITDA</td>
<td>507</td>
<td>541</td>
</tr>
<tr>
<td>EBITDA pre</td>
<td>516</td>
<td>553</td>
</tr>
</tbody>
</table>

Margin (in % of net sales): 31.0% - 31.2%

Comments:
- Double-digit growth of Process Solutions mainly driven by downstream and single use, with COVID-19 demand contributing
- About stable Applied Solutions reflects high comps and decline in lab water due to inaccessibility of labs
- Research Solutions flat: increased demand of bulk chemicals offset by temporary slowdown in academia due to COVID-19

Net sales bridge

<table>
<thead>
<tr>
<th>Q1 2019</th>
<th>Organic</th>
<th>Currency</th>
<th>Portfolio</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>€1,661 m</td>
<td>5.6%</td>
<td>0.9%</td>
<td>0.0%</td>
<td>€1,769 m</td>
</tr>
</tbody>
</table>

EBITDA pre bridge

<table>
<thead>
<tr>
<th>Q1 2019</th>
<th>Organic</th>
<th>Currency</th>
<th>Portfolio</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>€516 m</td>
<td>8.2%</td>
<td>-0.5%</td>
<td>-0.5%</td>
<td>€553 m</td>
</tr>
</tbody>
</table>

• Higher M&S reflecting increased logistics cost
• Increased R&D driven by investments in strategic projects
• EBITDA pre reflects operational leverage from strong top-line growth
Performance Materials: Strong Semi more than offset by LC’s accelerated underlying negative trajectory and declining Surface amid COVID-19

Performance Materials P&L

<table>
<thead>
<tr>
<th></th>
<th>Q1 2019</th>
<th>Q1 2020</th>
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<tbody>
<tr>
<td>Net sales</td>
<td>€604 m</td>
<td>€900 m</td>
</tr>
<tr>
<td>Marketing and selling</td>
<td>-€66 m</td>
<td>-€136 m</td>
</tr>
<tr>
<td>Administration</td>
<td>-€23 m</td>
<td>-€38 m</td>
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<tr>
<td>Research and development</td>
<td>-€72 m</td>
<td>-€71 m</td>
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<td>EBIT</td>
<td>€95 m</td>
<td>€116 m</td>
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<tr>
<td>EBITDA</td>
<td>€157 m</td>
<td>€251 m</td>
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<tr>
<td>EBITDA pre</td>
<td>€193 m</td>
<td>€286 m</td>
</tr>
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Margin (in % of net sales) 31.9% 31.7%

Net sales bridge

<table>
<thead>
<tr>
<th></th>
<th>Q1 2019</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currency</td>
<td>52.1%</td>
<td>€900 m</td>
</tr>
<tr>
<td>Organic</td>
<td>-5.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Portfolio</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EBITDA pre bridge

<table>
<thead>
<tr>
<th></th>
<th>Q1 2019</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currency</td>
<td>52.1%</td>
<td>€286 m</td>
</tr>
<tr>
<td>Organic</td>
<td>-8.8%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Portfolio</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments

• Sales growth of nearly 50% reflects portfolio effect from Versum and positive FX, overcompensating organic decline
• Display Solutions: LC’s negative underlying trajectory with high comps, not yet significantly impacted by COVID-19; OLED impacted
• Semiconductor Solutions showing strong growth, both organically as well as for Versum portfolio; recovery started already in Q1
• Surface Solutions decline driven by impact of COVID-19 on the Automotive and Cosmetics industries
• M&S reflects consolidation of Versum acquisition and diligent underlying cost management in framework of Bright Future transformation
• R&D staying flat due to Bright Future related provisions in Q1 2019, while Q1 2020 includes Versum consolidation
• Increase in EBITDA pre largely reflects consolidation effect from Versum

Totals may not add up due to rounding
• Balance sheet reflects consolidation of Versum since Dec. 31 2019
• Higher cash (+€750 m) is driven by securing liquidity given the COVID-19 pandemic

- Increase in equity mainly driven by profit after tax and FX translations (equity ratio of 41.6%)
- Financial debt increase reflects new bonds (€1.5 bn) and utilization of available credit lines partially offset by due bonds repayment (€2.0 bn)
Cash flow statement

Q1 2020 – cash flow statement

<table>
<thead>
<tr>
<th></th>
<th>Q1 2019</th>
<th>Q1 2020</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit after tax</td>
<td>190</td>
<td>458</td>
<td>268</td>
</tr>
<tr>
<td>D&amp;A</td>
<td>474</td>
<td>431</td>
<td>-42</td>
</tr>
<tr>
<td>Changes in provisions</td>
<td>100</td>
<td>16</td>
<td>-84</td>
</tr>
<tr>
<td>Changes in other assets/liabilities</td>
<td>-89</td>
<td>-23</td>
<td>66</td>
</tr>
<tr>
<td>Other operating activities</td>
<td>-4</td>
<td>-10</td>
<td>-6</td>
</tr>
<tr>
<td>Changes in working capital</td>
<td>-178</td>
<td>-356</td>
<td>-178</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>493</td>
<td>516</td>
<td>24</td>
</tr>
<tr>
<td>Investing cash flow</td>
<td>-329</td>
<td>-288</td>
<td>41</td>
</tr>
<tr>
<td>thereof Capex on PPE</td>
<td>-209</td>
<td>-341</td>
<td>-132</td>
</tr>
<tr>
<td>Financing cash flow</td>
<td>-3</td>
<td>542</td>
<td>545</td>
</tr>
</tbody>
</table>

Cash flow drivers

- Profit after tax driven by higher EBIT and Allergopharma disposal* gain, neutralized in other operating activities
- D&A lower mainly from expired Rebif® amortization, compensated by Versum
- Changes in provisions reflect last year’s build up for transformation programs
- Increased working capital driven by trade accounts receivables in Life Science partially impacted by COVID-19
- Higher financing cash flow reflecting new bond issuance (£1.5 bn) and utilization of available credit lines, partially offset by repayment of due bonds (£2.0 bn)

* closed March 31st

Totals may not add up due to rounding
D3 GUIDANCE
Our assumptions regarding the development of COVID-19 have changed significantly post pandemic classification by WHO and subsequent events.

**Previous Assumptions** (disclosed in March)

- Impact mainly in **China**
- Outbreak **peaks in Q1**
- Situation **eases in Q2**
- Situation **normal in H2**

**Current Assumptions** (disclosed in May)

- Impact **across all regions**
- Cases expected to **peak in Q2**
- Situation **eases in H2**
- Pandemic crisis **lasts for FY**
- **Stressed** health systems
- Some countries have a **less effective** response than China
- However, **no major resurgences**
Group
COVID-19 Update: new assumptions on financial impact of COVID-19

- **Mid single-digit percentage Sales impact**
  - Global impact across many businesses
  - Strong Q2 impact, also from Q1 pull-in
  - Lasting until at least Q3

- **Highest** anticipated impact in absolute terms
  - Biggest impact anticipated in Fertility due to discretionary nature of treatment

- **Lowest** anticipated impact in absolute terms
  - Process Solutions largely unaffected, main impact in Applied and Research Solutions

- Semiconductor expected to show strong growth despite COVID-19
- COVID-19 additionally weighs on Display decline
- High impact on Surface’s end markets

We assume a top-line impact of around mid single digit and thereof 50% to 60% hitting EBITDA pre
Group
Key earnings drivers to remember for 2020

**EBITDA**

**Supporting factors**
- Increasing sales contribution from Mavenclad® and Bavencio®
- Stringent M&S and R&D cost management in HC (decrease YoY absolute and as % of sales)
- Ongoing strength in Life Science with above-market sales growth
- Recovery of Semiconductor Solutions and cost savings from Bright Future program related initiatives
- High level of cost consciousness and prioritization
- Four quarters of Versum

**Reducing factors**
- No more support from Pfizer deferred income (€191 m in 2019)
- Lower income from pipeline management
- Continued decline of Liquid Crystals and Rebif®
- COVID-19 related sales and earnings effect

1EBITDA pre
**Group**

**Full-year 2020 guidance**

- **Net sales:**
  Slight to moderate organic sales growth, Versum growth contribution in the mid-single digits %
  FX between +1% to -2% YoY
  ~€16.8 – 17.8 bn

- **EBITDA pre:**
  Organically about stable, mid-single digit % growth from Versum
  FX headwinds of 0% to -3% YoY
  ~€4,350 – 4,850 m

- **EPS pre:**
  ~€5.50 – 6.35

---

1 CO guidance 2020: Slightly higher than last year
Group

2020 business sector guidance

Healthcare
- Organically about stable
- COVID-19 significantly impacting fertility performance
- Sustained performance of new products

Life Science
- Strong organic growth
- Process Solutions growth offsets weakness in academic and applied end markets

Performance Materials
- Moderate to strong organic decline
- COVID-19 weighing on Display and Surface, while Semiconductor Solutions growing strongly
- Display declining, driven by LC
- Low to mid-thirties % contribution from Versum

Net sales
- Slight organic decline due to COVID-19
- Slight to moderate adverse FX impact

EBITDA pre
- Neutral to moderate adverse FX impact

Net sales
- Low- to mid-teens % organic decline
- Moderate support from FX
- Low to mid-thirties % contribution from Versum

¹Divisional guidances are only support to the group guidance and do not have to add up
## Additional financial guidance 2020

Further financial details

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate &amp; Other EBITDA pre</td>
<td>slightly higher than last year</td>
</tr>
<tr>
<td>Interest result</td>
<td>~ -245 to -275 m</td>
</tr>
<tr>
<td>Effective tax rate</td>
<td>~24 % to 26%</td>
</tr>
<tr>
<td>Capex on PPE</td>
<td>~1.1 bn to 1.2 bn</td>
</tr>
<tr>
<td>Hedging/USD assumption</td>
<td>FY 2020 hedge ratio ~50%</td>
</tr>
<tr>
<td></td>
<td>at EUR/USD ~1.18</td>
</tr>
<tr>
<td>2020 Ø EUR/USD assumption</td>
<td>~1.08 to 1.12</td>
</tr>
</tbody>
</table>
Maturity profile reflects Sigma-Aldrich and Versum financing transactions

Balanced maturity profile in upcoming years avoids refinancing risks; Merck KGaA, Darmstadt, Germany will become a more frequent issuer.

Maturity profile as of March 31, 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>EUR bonds</th>
<th>USD bonds</th>
<th>Hybrids (first call dates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>1,000</td>
<td>0.005%</td>
<td>2.625%</td>
</tr>
<tr>
<td>2021</td>
<td>1,000</td>
<td>0.375%</td>
<td>1.0000%</td>
</tr>
<tr>
<td>2022</td>
<td>550</td>
<td>0.875%</td>
<td>2.950% 1.375%</td>
</tr>
<tr>
<td>2023</td>
<td>600</td>
<td>1.625%</td>
<td>3.375% 1.375%</td>
</tr>
<tr>
<td>2024</td>
<td>500</td>
<td>0.125%</td>
<td>3.250% 0.125%</td>
</tr>
<tr>
<td>2025</td>
<td>1,600</td>
<td></td>
<td>3.250% 0.125%</td>
</tr>
<tr>
<td>2026</td>
<td>600</td>
<td></td>
<td>0.375% 0.500%</td>
</tr>
<tr>
<td>2027</td>
<td>750</td>
<td></td>
<td>2.950% 1.375%</td>
</tr>
<tr>
<td>2028</td>
<td>1,000</td>
<td></td>
<td>2.875%</td>
</tr>
<tr>
<td>2029</td>
<td>800</td>
<td></td>
<td>0.875%</td>
</tr>
<tr>
<td>2030</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2031</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[C € m/US $]

Totals may not add up due to rounding.
Healthcare organic growth by franchise/product

Q1 2020 organic sales growth [%] by key franchise/products [€ m]

<table>
<thead>
<tr>
<th>Franchise/Product</th>
<th>Q1 2020 [€ m]</th>
<th>Q1 2019 [€ m]</th>
<th>Organic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebif</td>
<td>295</td>
<td>299</td>
<td>-3%</td>
</tr>
<tr>
<td>Glucophage</td>
<td>234</td>
<td>180</td>
<td>+32%</td>
</tr>
<tr>
<td>ERBITUX</td>
<td>211</td>
<td>199</td>
<td>+7%</td>
</tr>
<tr>
<td>GONAL-f</td>
<td>167</td>
<td>168</td>
<td>-1%</td>
</tr>
<tr>
<td>Concor</td>
<td>150</td>
<td>117</td>
<td>+29%</td>
</tr>
<tr>
<td>MAVENCLAD</td>
<td>123</td>
<td>43</td>
<td>+184%</td>
</tr>
<tr>
<td>Euthyrox</td>
<td>114</td>
<td>91</td>
<td>+28%</td>
</tr>
<tr>
<td>BAVENCIO</td>
<td>33</td>
<td>22</td>
<td>+50%</td>
</tr>
</tbody>
</table>
Neurology & Immunology: Paused Mavenclad® ramp up amid Covid-19 uncertainties offset by slower than anticipated organic Rebif® decline

- Rebif® sales of €295 m in Q1 ’20 reflect lower organic decline of -3.4%, further mitigated by FX effect of +2%
- Slower than anticipated U.S. decline from inventory effect while ex-U.S. remains stable
- Q-o-Q decline more pronounced against exceptionally strong Q4 ‘19 from rebate provision releases

Mavenclad® nearly tripling vs. Q1 ’19 but flattish vs. Q4 ’19 amid COVID-19 uncertainties in Europe and U.S.
Oncology: High double-digit growth in Bavencio®, while Erbitux is impacted by interruption of treatment protocols with infusions due to COVID-19

Sales development Oncology, [€m]

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Erbitux</th>
<th>Bavencio</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2019</td>
<td>22</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Q2 2019</td>
<td>23</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Q3 2019</td>
<td>29</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Q4 2019</td>
<td>22</td>
<td>29</td>
<td>33</td>
</tr>
</tbody>
</table>

Erbitux® net sales, [€m]

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2019</td>
<td>199</td>
</tr>
<tr>
<td>Q2 2019</td>
<td>212</td>
</tr>
<tr>
<td>Q3 2019</td>
<td>222</td>
</tr>
<tr>
<td>Q4 2019</td>
<td>237</td>
</tr>
<tr>
<td>Q1 2020</td>
<td>211</td>
</tr>
</tbody>
</table>

Bavencio® net sales, [€m]

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2019</td>
<td>22</td>
</tr>
<tr>
<td>Q2 2019</td>
<td>23</td>
</tr>
<tr>
<td>Q3 2019</td>
<td>29</td>
</tr>
<tr>
<td>Q4 2019</td>
<td>29</td>
</tr>
<tr>
<td>Q1 2020</td>
<td>33</td>
</tr>
</tbody>
</table>

- Absolute sales of €211m reflect 6.1% growth in Q1 (org. 7.1%; FX -1.0%)
- Erbitux: COVID-19 related slowdown in APAC (org. +0.6%) offset by double-digit growth in Europe due to tender phasing

Recent Bavencio® approvals for RCC in U.S., Europe and Japan fuel 50.3% growth in Q1 (org. 49.8%; FX -0.5%)

Merck KGaA, Darmstadt, Germany Q1 2020 Results Presentation | May 14th, 2020
Fertility: As anticipated, strongest COVID-19 impact among all franchises particularly pronounced in China, Central and Western Europe

- Entire Fertility portfolio shows a moderate organic decline of -3.5% primarily due to COVID-19
- COVID-19 triggering nearly 50% sales decline in China, offset partially by strong growth in North America
- Milder decline in Gonal-f® (org. -1.2%; FX 0.4%) explained by different quarterly phasing in North America
General Medicine and Endocrinology: Strong growth further accelerated by stocking effects more than offsetting negative COVID-19 impact in China

Sales evolution

Endocrinology

<table>
<thead>
<tr>
<th>Quarter</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>83</td>
<td>95</td>
</tr>
<tr>
<td>Q2</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

Organic: +16.0% org.

Endocrinology reflects strong demand for Saizen® particularly in APAC and Latin America partially explained through competitor stockout.

General Medicine*

<table>
<thead>
<tr>
<th>Quarter</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>489</td>
<td>593</td>
</tr>
<tr>
<td>Q2</td>
<td>583</td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>601</td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>588</td>
<td></td>
</tr>
</tbody>
</table>

Organic: +21.7% org.

Continuously strong demand for Glucophage® further accelerated in APAC (org. +39%), Latin America (org. +33%), and Europe (org. +18%) due to COVID-19 related trends.

Q1 2020 organic drivers

• Endocrinology reflects strong demand for Saizen® particularly in APAC and Latin America partially explained through competitor stockout.

• Continuously strong demand for Glucophage® further accelerated in APAC (org. +39%), Latin America (org. +33%), and Europe (org. +18%) due to COVID-19 related trends.
Phase I

berzosertib (M6620)
ATR inhibitor
Solid tumors

peposertib (M3814)
DNA-PK inhibitor
Solid tumors

M1774
ATR inhibitor
Solid tumors

M3258
LMP7 inhibitor
Multiple myeloma

M4344
ATR inhibitor
Solid tumors

M8891
MetAP2 inhibitor
Solid tumors

M5049
TLR7/8 antagonist
Immunology

M6495
anti-ADAMTS-5 nanobody
Osteoarthritis

M5717
PeEF2 inhibitor
Malaria

Phase II

bintrafusp alfa
TGFbeta trap/anti-PD-L1
Rectal cancer

tepotinib
MET kinase inhibitor
Non-small cell lung cancer

peposertib (M3814)
DNA-PK inhibitor
Solid tumors

M9241 (NHS-IL12)
Cancer immunotherapy
Solid tumors

Phase III

bintrafusp alfa
TGFbeta trap/anti-PD-L1
Non-small cell lung cancer 1L

tepotinib
MET kinase inhibitor
Non-small cell lung cancer 1L/2L

April 30, 2020

avelumab
anti-PD-L1 mAb
Non-small cell lung cancer 1L

evobrutinib
BTK inhibitor
Multiple sclerosis

Registration

tepotinib
MET kinase inhibitor
Non-small cell lung cancer, METex14 skipping

avelumab
anti-PD-L1 mAb
Urothelial cancer 1L-M

atalicept
anti-BlyS/APRIL fusion protein
Systemic lupus erythematosus
IgA nephropathy

sprifermin
fibroblast growth factor 18
Osteoarthritis

M1095 (ALX-0761)
anti-IL-17 A/F nanobody
Psoriasis

1L, first-line treatment; 1L-M, first-line maintenance treatment; 2L, second-line treatment.

1 Includes studies in combination with avelumab.
2 Avelumab combination studies with talazoparib, axitinib, ALK inhibitors, cetuximab, or chemotherapy.

3 As announced on March 30 2017, in an agreement with Avillion, anti-IL-17 A/F nanobody will be developed by Avillion for plaque psoriasis and commercialized by Merck KGaA, Darmstadt, Germany.

4 As announced on April 09 2020, a supplemental Biologics License Application (sBLA) has been submitted to the U.S. Food and Drug Administration (FDA) for avelumab for first-line maintenance treatment of patients with locally advanced or metastatic urothelial carcinoma.

Pipeline products are under clinical investigation and have not been proven to be safe and effective. There is no guarantee any product will be approved in the sought-after indication.
Adjustments in Q1 2020

Adjustments in EBIT

<table>
<thead>
<tr>
<th>[€m]</th>
<th>Q1 2019</th>
<th>Q1 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjustments</td>
<td>thereof D&amp;A</td>
</tr>
<tr>
<td>Healthcare</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Life Science</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Performance Materials</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Corporate &amp; Other</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>0</td>
</tr>
</tbody>
</table>

Totals may not add up due to rounding
## Financial calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 14, 2020</td>
<td>Q1 2020 Earnings release</td>
</tr>
<tr>
<td>May 28, 2020</td>
<td><strong>Virtual</strong> Annual General Meeting</td>
</tr>
<tr>
<td>August 6, 2020</td>
<td>Q2 2020 Earnings release</td>
</tr>
<tr>
<td>November 12, 2020</td>
<td>Q3 2020 Earnings release</td>
</tr>
</tbody>
</table>
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FAX: +49 6151 72-913321