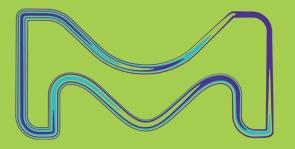
## merck kgan, parmstadt, germany – baader investment conference

**Marcus Kuhnert, CFO** 

September 2020





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## Agenda

- **Business overview**
- **O2** Transforming the company
- **Healthcare Funding for success**
- Life Science Focusing on profitable growth
- Performance Materials Maintaining leadership and innovation
- **Executive summary and guidance**

## Business overview

Ol

## Three high-tech businesses competing in attractive markets



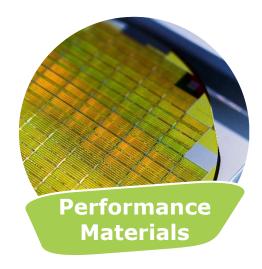
Leading in specialty pharma markets

- Biologics and small-molecule prescription medicines against cancer, multiple sclerosis, infertility
- Research focus: Oncology, Immunology & Immuno-Oncology
- Successful portfolio management: e.g. divestment of Consumer Health and Allergopharma



Leading life science company

- Tools and services for biotech research & production
- Tools and laboratory supply for academic research and industrial testing



Leading company in high-tech solutions

- High-tech solutions and materials for electronics
- Broad portfolio of decorative and functional solutions

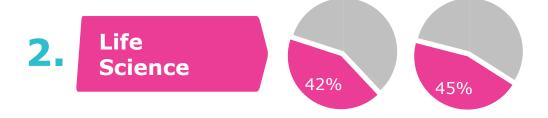
## Merck KGaA, Darmstadt, Germany, today - three strong pillars as basis for profitable growth





#### Global specialty innovator poised for above-industry growth

- Resilient core business backed by excellent life cycle management
- Strong growth from new products, late-stage pipeline assets with blockbuster potential
- Rigorous cost discipline and value-maximizing pipeline prioritization



#### **Diversified industry leader** poised for above-market growth

- Portfolio advantage and outperformance drive above-market growth
- Strengthen core: products (PS), chemistry (RS), lab water (AS)
- Establish new pillars: PS services, gene editing and novel modalities

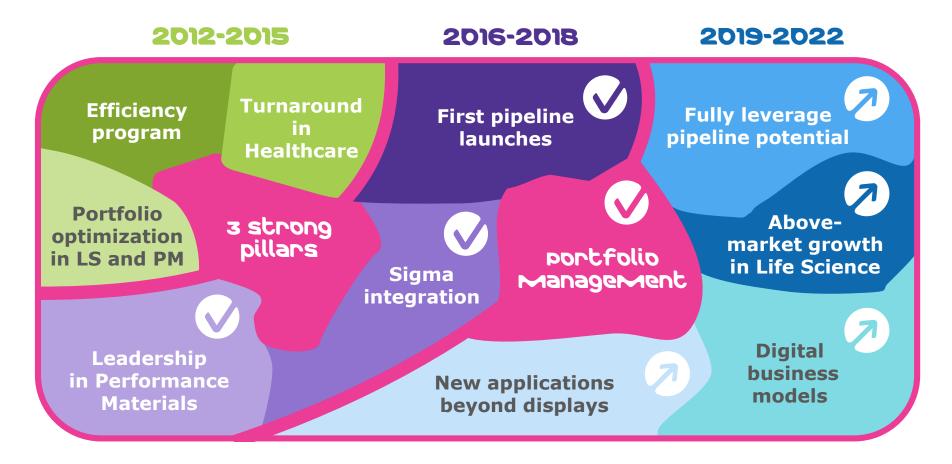


Acronyms: PS = Process Solutions, RS = Research Solutions, AS = Applied Solutions

#### **Leading electronics player** poised for accelerating growth

- Growing semiconductor share as key driver for acceleration
- More resilient growth through rising diversification
- Strict cost discipline in maturing parts of the portfolio

## The 2016 vision – a strategic agenda until 2022

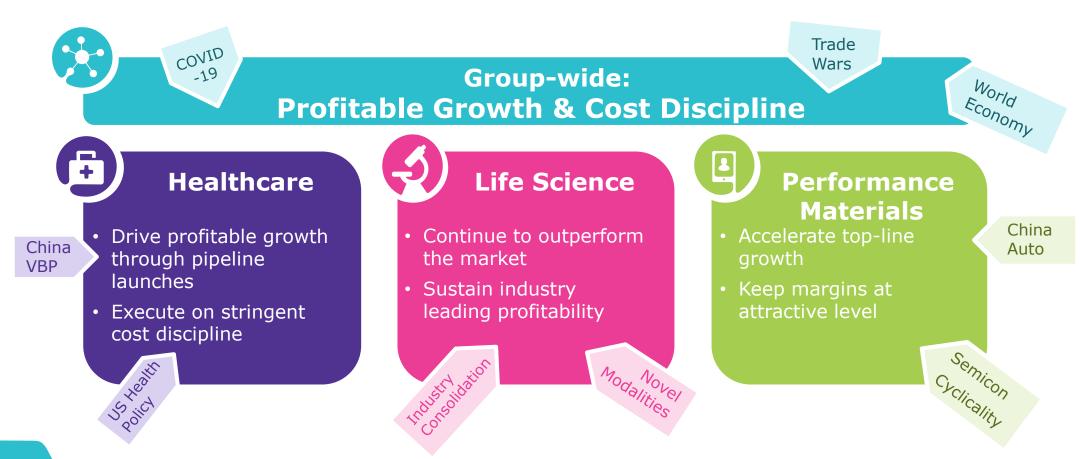




Executing on the growth and expansion phase of the 2016-22 strategic agenda



## 2021 and beyond - poised for growth in a challenging environment



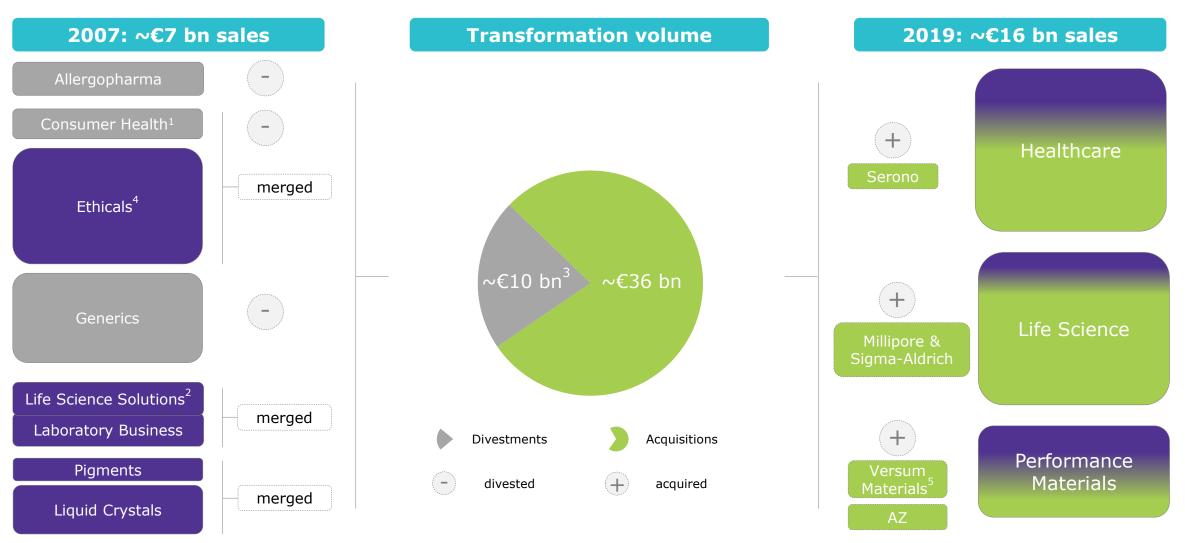
Staying on course in a potentially volatile environment

Acronym: VBP = volume based procurement

# the company

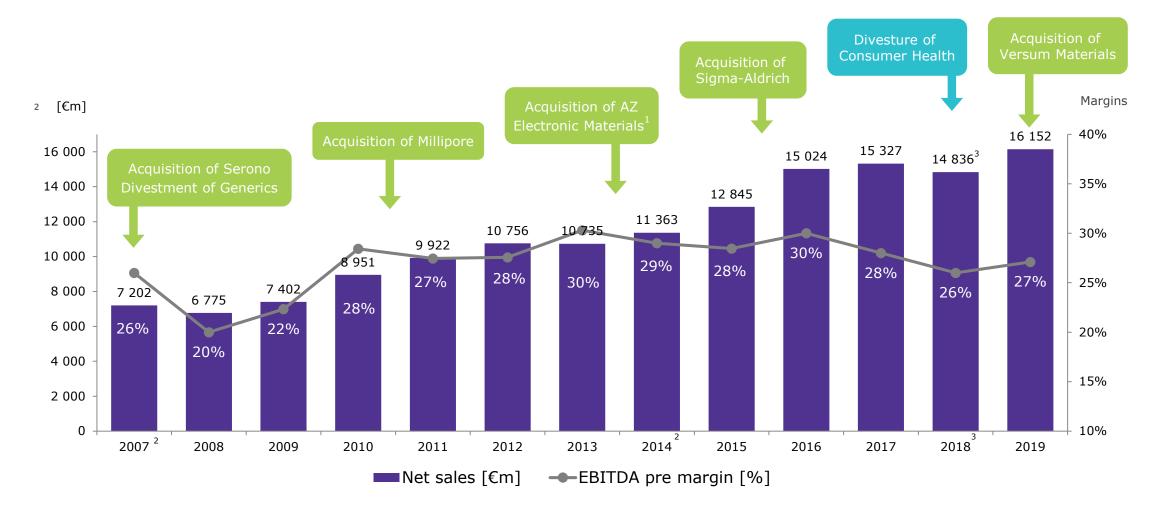
02

## We have added scale and strengthened the attractiveness of our portfolio



<sup>&</sup>lt;sup>1</sup>Closing of sale of Consumer Health at a cash purchase price of €3.4 bn completed as of December 1, 2018; <sup>2</sup>Excluding "Crop Bioscience", which was divested; <sup>3</sup>Profroma divestment volume includes cash proceeds for Consumer Health; <sup>4</sup>Excluding "Theramex", which was divested; <sup>5</sup>Closing of acquisition of Versum Materials at a purchase price of €5.8 bn completed as of October 7, 2019

### Continue to transform to a science and technology focused company





## All three business sectors delivering on their strategic priorities

#### **Healthcare**

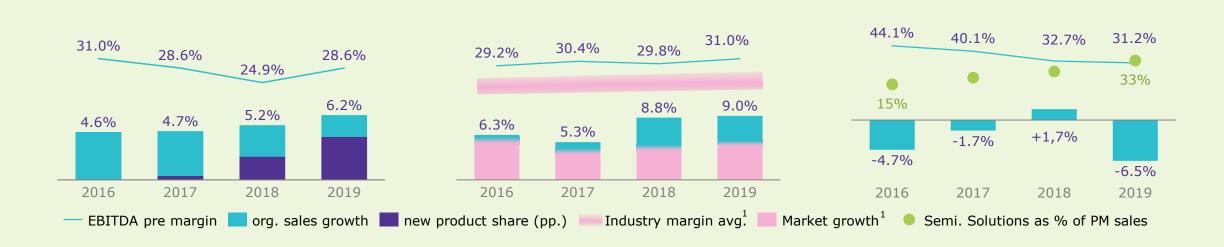
- Accelerating organic growth with rising contribution from launches (Mavenclad<sup>®</sup>, Bavencio<sup>®</sup>)
- Margin trough behind, pipeline progressing well

#### Life Science

- Above-market organic growth paired with industry-leading margin
- Significant growth investments (organic, inorganic & partnerships)

#### **Performance Materials**

- Significant portfolio change towards higher growth business (Semi, OLED)
- Margin stabilizing at ~30% amid sound execution of Bright Future



<sup>&</sup>lt;sup>1</sup> Company estimate based on industry data and reporting by peers

## **Clear set of priority goals**



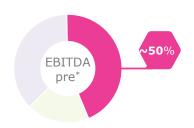
#### **Healthcare**



- Deliver on ambition to keep core business at least stable until 2022
- Transition from investment to earnings phase by 2019
- Foster successful Bavencio<sup>®</sup>
   and Mavenclad<sup>®</sup> ramp up
- Stringent pipeline execution



#### Life science



- Strengthen position as differentiated player in a highly attractive market
- Maintain consistent abovemarket growth trajectory and superior profitability





- Deliver ambition of 3-4% CAGR\*
- Implement 5-year transformation program and focus on seamless integration of Versum and Intermolecular; to deliver financial ambition of around 30% margin
- Maintain strong cash generation and cash conversion

\*based on H1 2020

## Three-pillar structure – positioned to win in high-growth markets

#### Global economy<sup>1</sup>



Global GDP

~3% to 4%

#### End markets<sup>1</sup>



Global pharma industry ~4% to 5%



Global life science industry ~5% to 6%



Global electronics industry ~4%



~4% to 5%

#### Focus market areas<sup>1</sup>



Oncology: ~10%

Immunology: ~5% to 9%



**Biologics: ~10% to 12%** 

Services: ~7% to 8%



Semi materials: ~4% to 6%



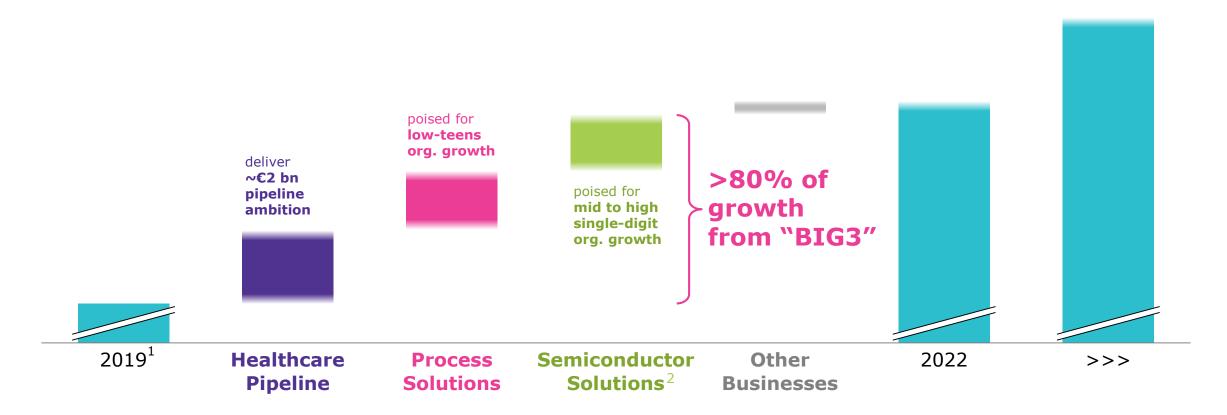
∑ 6%-plus



Purposefully positioned in attractive markets with secular growth above global GDP ...further focusing investments on attractive sub-segments

<sup>&</sup>lt;sup>1</sup> Company estimates of mid-term growth outlook based on industry forecasts and reports from public research institutes (e.g. IMF, IQVIA, EvaluatePharma, Prismark, etc.)

## Three main drivers of growth to 2022 and beyond

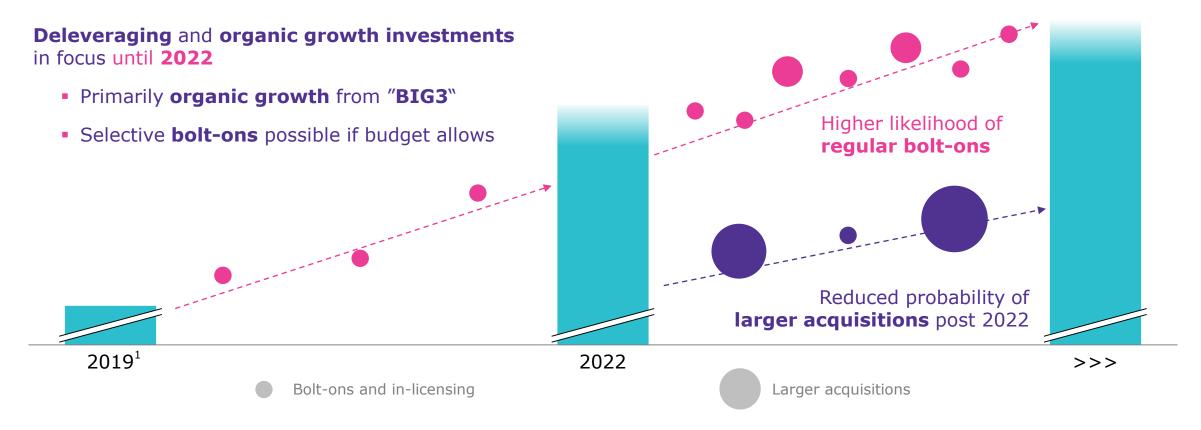




Beyond 2022: further significant growth potential from "BIG3" and increasing contributions from other businesses

<sup>1</sup> 2019 Group sales of €16.2 bn; <sup>2</sup> Including Versum portfolio effect

## Portfolio strategy - from transformation to evolution





Strong portfolio: significant organic growth potential to 2022 and beyond ...and higher likelihood of regular bolt-ons post 2022

<sup>1</sup> 2019 Group sales of €16.2 bn

Funding for success

03

## Creating optionality through focused pipeline approach

#### Pipeline and launch progress supported by strong core

## Pipeline quality

- Early stage pipeline fueled by in-house innovation
- Potentially transformative late-stage pipeline assets (Evobrutinib, Bintrafusp alfa)
- Optimized risk profile through strategic partnerships (Pfizer and GSK) and focused externalization

## Launch activity

- Mavenclad<sup>®</sup> approved in 80 countries including the U.S.
- Bavencio<sup>®</sup> launched in MCC<sup>1</sup>, RCC<sup>2</sup>, and UC 1L/2L<sup>3</sup>
- **Tepotinib** first-in-class approval of an oral MET inhibitor •

Strong core business due to excellent life cycle management

## Mid-term outlook Healthcare

More details at **R&D update** call on Sep 25

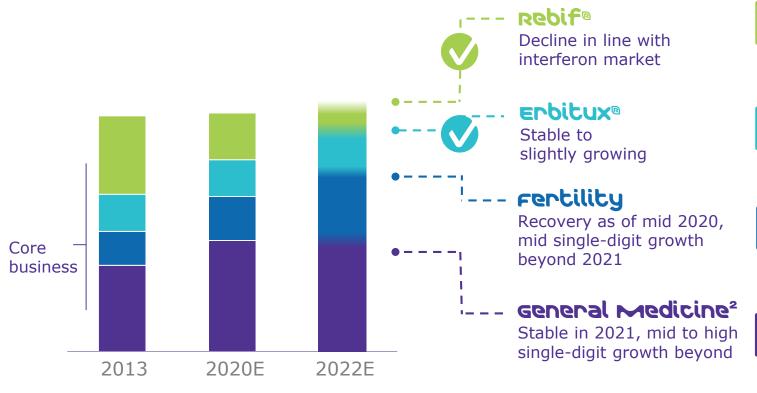


Confirming financial ambition of a stable core business and ~€2 bn pipeline sales until 2022 with further significant growth potential beyond

<sup>1</sup> MCC = Merkel Cell Carcinoma, launched in all major jurisdictions; <sup>2</sup> RCC = Renal Cell Carcinoma, launched in all major jurisdictions; <sup>3</sup> UC = Urothelial Carcinoma, 1L = first line, 2L = second line, launched in the U.S., filed for approval in Europe and Japan; <sup>4</sup> approved in Japan for advanced NSCLC (non-small cell lung cancer), filed for approval in the U.S. under RTOR (Real-Time Oncology Review)

## Confirming ambition to keep core business at least stable to 2022

#### Healthcare core business net sales until 2022



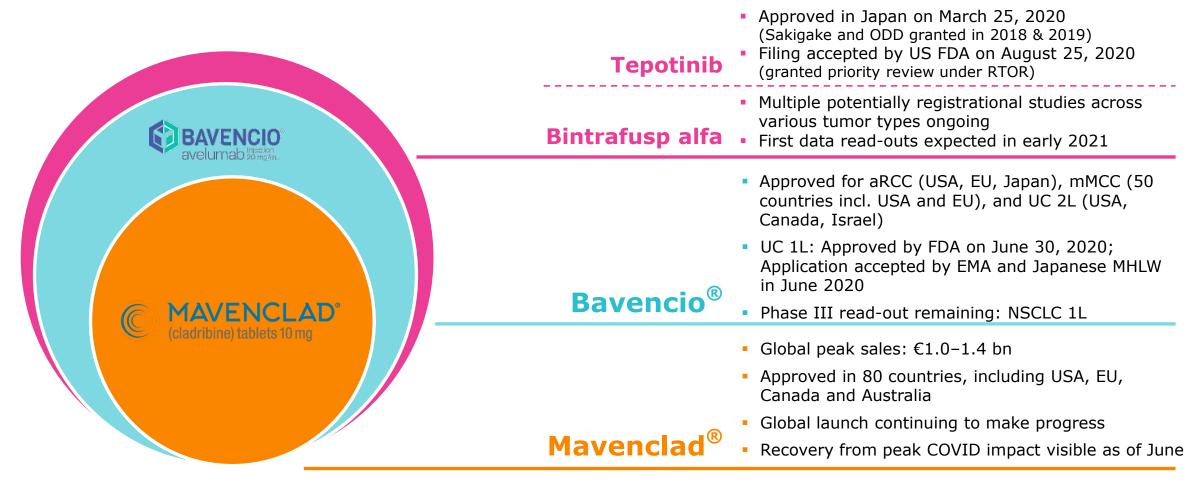
- Maintain solid track record of patient retention
- Integrate into joint franchise with Mavenclad<sup>®</sup>
- Explore new treatment options (COVID-19)
- Drive EM¹ growth and mitigate competitive / price pressure in EU by clear branding
- Expect continued inclusion in China's NRDL post update at the end of 2020
- Drug demand driven by emerging markets growth and demographics
- Leverage competitive strengths (e.g. broad and innovative portfolio, security of supply)
  - Drive recovery after COVID-19
- Increasing prevalence of diabetes and cardiovascular diseases
- Mitigate VBP pressure in China through EM growth, effective life cycle management, and portfolio expansion



Growth to pick up after COVID-19 impact in Q2 2020, further growth potential after 2022



## Mavenclad and Bavencio launches on track for ~€2 bn pipeline ambition in 2022

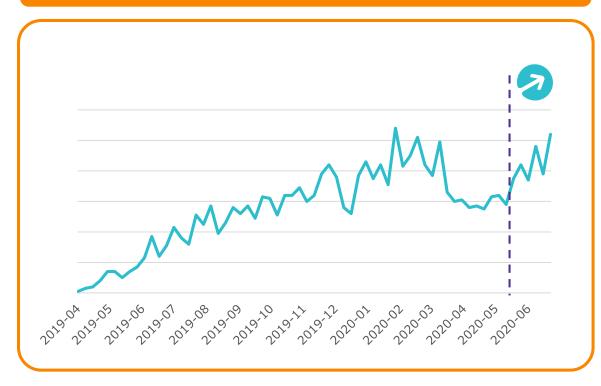


ILLUSTRATIVE - Not to scale;

## Mavenclad® – Global launch continues to make progress, with recovery of ramp-up from peak COVID impact visible starting in June 2020



## **US Mavenclad® TRx,** [IQVIA, NPA, weekly view]



Approved in 80 countries

#### Impact of COVID:

- Restricted HCP access and forced pivot to digital engagement only; treatment guidelines restricting use of products
- Significant decline of patient consults with neurologists, leading to fewer treatment initiations and fewer treatment switches (dynamic market temporarily depressed)

#### Recovery:

- US: Continuing to gain market share in dynamic High Efficacy (6.7%) and dynamic Oral classes (9.7%)<sup>1</sup>
- Ex-US: Recovery as of June, dynamic HE market share defended despite COVID 19, pre-COVID prescribers have reinitiated patients on Mayenclad®

## Catalysts – 2020 characterized by significant developmental progress across all therapeutic areas

Q2 2020

H2 2020

H1 2021

(R&D Update Call: September 25)

Tepotinib (c-Met-inhibitor)

METex14: Filing accepted by US FDA in August (granted priority review under RTOR)

1L UC: U.S. FDA approval on June 30, EMA validation of filing on June 22, & acceptance of supplemental new drug application by the Japanese MHLW

- 1L UC: Subgroup analyses to be presented at ESMO (September 19)
- 1L RCC: NICE recommendation published on July 31 V

- 1L UC: Expected regulatory feedback from EMA and Japanese MHLW
  - 1L NSCLC: Expected in-house availability of Ph III data

Initiation of additional studies beyond NSCLC: 2L UC (Ph Ib, monotherapy), solid tumors (Ph I, bintrafusp alfa + M6223 (TIGIT inhibitor)), 2L TNBC (Ph II, monotherapy) recently posted on ct.gov

#### Evobrutinib (BTK-inhibitor)

RMS: Recruitment initiation (Ph III)



2L BTC: Expected data read-out

#### M5049 (TLR7/8 antagonist)

Initiation of trial for severe symptoms of Covid-19 infection (Ph II)



Results from Ph II expected end of 2020

Oncology

Neurology

Immuno-Oncology

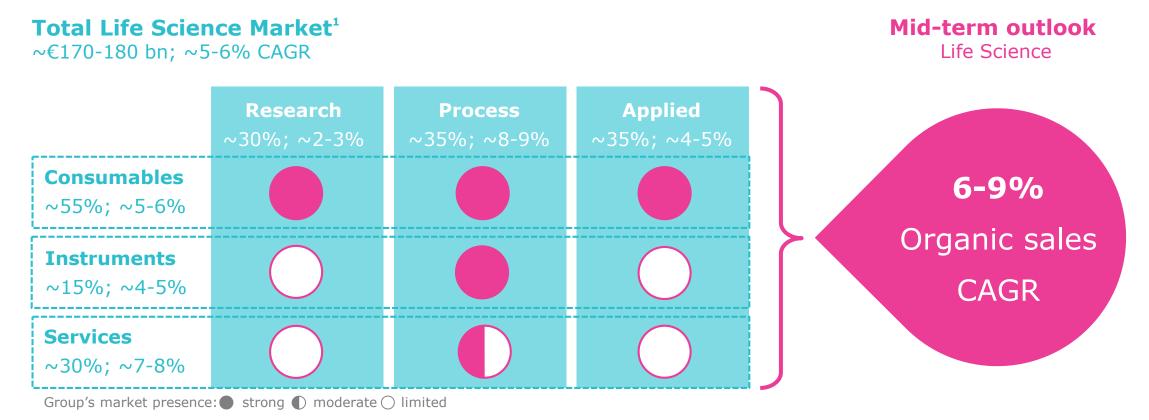
Immunology

Acronyms: BTC = Biliary Tract Cancer, BTD = Breakthrough Therapy Designation, EMA = European Medicines Agency, FDA = U.S. Food and Drug Administration, MHLW = Ministry of Health, Labour and Welfare, NEJM = New England Journal of Medicine, NICE = UK National Institute for Health and Care Excellence, NSCLC = Non-Small Cell Lung Cancer, RMS = Relapsing Multiple Sclerosis, RTOR = Real-Time Oncology Review, TGIT = T cell immunoreceptor with Iq and ITIM domains, UC = Urothelial Cancer

Focusing on profitable growth



## **Building growth momentum with focus on attractive market segments**





**Upgrading** mid-term financial ambition to 6-9% organic sales CAGR

<sup>&</sup>lt;sup>1</sup> Company estimate based on industry forecast over 5-year horizon

### Improved mid-term outlook driven by market and portfolio focus



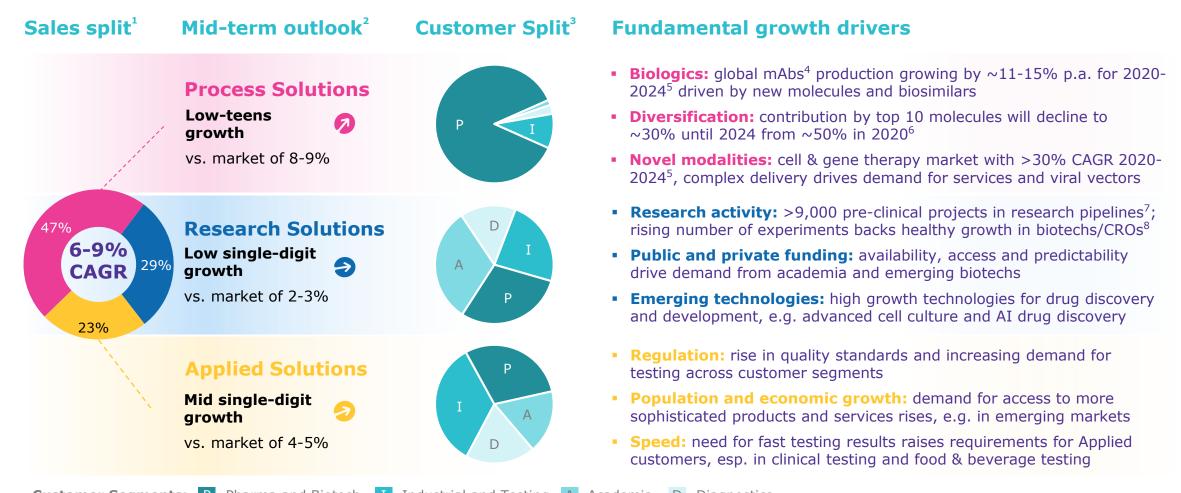


Market outlook improving further, mainly due to Process segment



<sup>&</sup>lt;sup>1</sup> Company estimate based on industry forecast over 5-year horizon

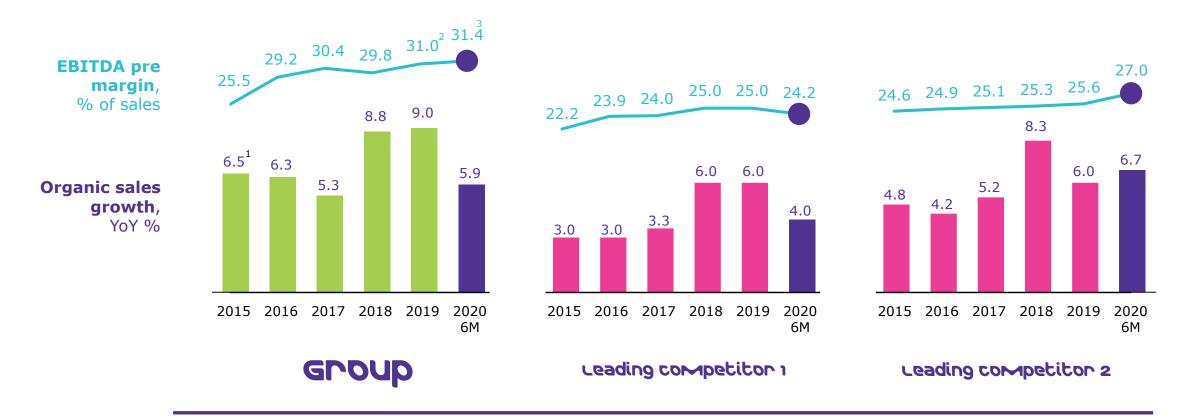
### All business units contributing to above-market growth



Customer Segments: P Pharma and Biotech I Industrial and Testing A Academia D Diagnostics

<sup>&</sup>lt;sup>1</sup> Based on H1 2020, CAGR is organic mid-term ambition; <sup>2</sup> growth rates are organic CAGRs; <sup>3</sup> indicative only; <sup>4</sup> mAbs = monoclonal antibodies; <sup>5</sup> Source: company estimate based on industry forecasts; <sup>6</sup> Source: EvaluatePharma; <sup>7</sup> Source: statista; <sup>8</sup> CRO = Contract Research Organization

## Continuing to set the benchmark for industry performance





- Grow above market
- Sustain leading market position

### Critical offering in the fight against COVID-19



## products feed into...

www.sigmaaldrich.com/covid-19

## VIRUS **DETECTION**

- Leading critical component provider for Molecular and Serological diagnostic kits
- PCR reagents, kits and tools for all stages of assay development

## VIRUS CHARACTERIZATION

- Offering is among largest biologic reagents and hardware portfolios
- Effective vaccines and therapies start with reliable virus characterization
- Highest quality reagents needed for understanding of viral attachment, genomics, or proteomics

## VACCINE & THERAPY **PRODUCTION**

- Supporting global COVID-19 vaccine and therapy response effort:
  - Upstream and downstream research and scaling
  - End-to-End solutions
  - Biosafety Testing Services



## performance materials

Maintaining leadership and innovation

05

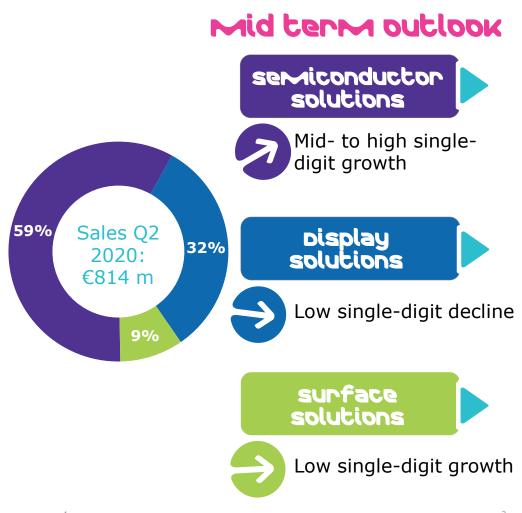
### Electronics focus leads to greater resilience and accelerated growth





**Updating** mid-term financial ambition to 3-4% organic sales CAGR

## Performance Materials refocus on electronics drives mid-term guidance upgrade: 3 to 4% CAGR overall



- Continued market growth due to technological advances (Artificial intelligence, 5G, Big Data and cloud, Internet of Things) serving customers in Logic, Memory, Packaging and others
- 4 to 6% market growth<sup>1</sup>
- 200 to 300bps above-market growth from share gains & better portfolio (incl. 100 to 150bps additional growth from integration top-line synergies)
- Driven by trend to bigger TV size, higher resolutions, more mobile devices
- 3 to 4% growth of total LCD m<sup>2</sup> area<sup>2</sup>, while price pressure continues
- 18 to 22% growth of total OLED m<sup>2</sup> area<sup>2</sup> with slight to moderate market share gains
- OLED material market to exceed LC material market by 2022<sup>3</sup>
- Well balanced exposure to automotive and cosmetics end market
- Drivers: rising living standards, higher disposable income in growing markets and increasing demand for high value products at reasonable prices
- Light vehicle production and relevant cosmetics end markets returning to growth in 2021 and reaching 2019 levels by 2022 and beyond<sup>4</sup>

## 5-year transformation program Bright Future is well on track



Cultural change addressed in three dedicated initiatives focused on customer centricity, market-driven innovation and corporate culture

### Strategic roadmap materializing

#### —Measures for a bright future ——



#### **Darmstadt**

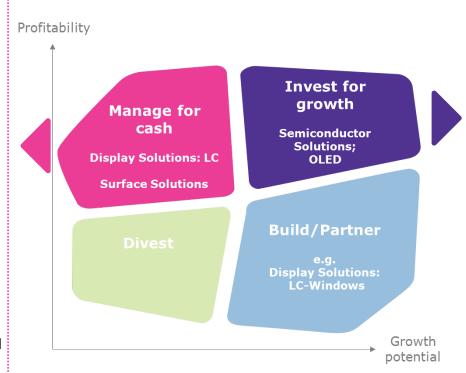
- In Darmstadt focus on R&D and production
- Immediate bottom line contribution from 2019 onwards
- Reduce the number of FTEs by ~15%
   = ~400 FTEs



 Chilworth site during September 2019 successfully closed



- Shut down of Performance Materials activities at Atsugi site started (to be completed during 2021)
- R&D and production activities in Atsugi transferred and consolidated in other PM locations in Asia
- Consolidation of site structure in Japan





- Leading supplier of high-purity process chemicals, gases and equipment serving semiconductor manufacturers
- Track record of accelerated growth and industry leading profitability
- Creating a leading electronic materials player with attractive long-term prospect

#### INTERMOLECULAR®

- Leading in advanced materials innovation
- Acquisition to strengthen semiconductor technology offering
- Application specific materials expertise with that perfectly complement Group's business and technology portfolio





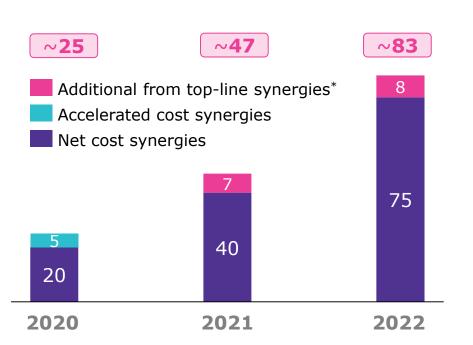
**Both transactions successfully closed** 

Merck KGaA

Darmstadt, Germany

### Synergy upgrade driven by fast 2020 execution and top-line synergies

#### **EBITDA** pre impact of synergy ramp-up [€ m]



## Synergy upgrade of ~10% confirms strong integration capabilities

**Sources of synergies** 



- Transform country setup
- Streamline duplicate structures



- Optimize production and supply chain network
- Achieve savings through joint procurement



- Integrate corporate & administrative functions
- Cost savings due to U.S. company delistings

<sup>\*</sup>Top-line synergies from cross-selling, new products introductions and overarching initiatives

Executive sumary and guidance

06

# Our assumptions on the development of the COVID-19 pandemic have remained largely the same since May

## **Previous assumptions**

(communicated in May)



(communicated in August)



Impact across all regions



Impact across all regions



Cases expected to **peak in Q2**Situation **eases in H2**Pandemic crisis **lasts for FY** 



**Recovery progressing** during H2



**Stressed** health systems

Some countries have **less effective** response than China



Some countries **struggle to contain** virus resulting in stressed health systems

Effective **vaccines** not broadly available



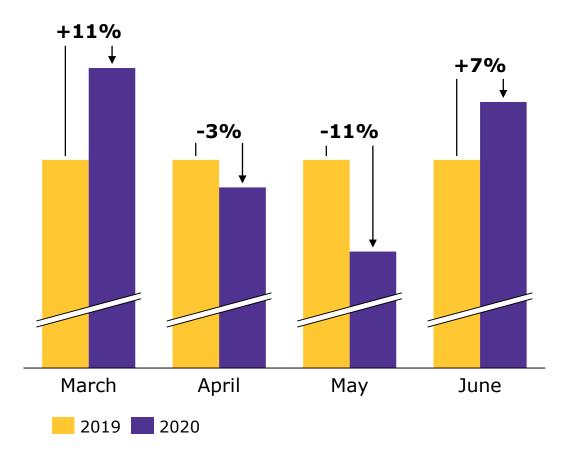
However, no major resurgences



Additional flares, but **not triggering new widespread lockdowns** 

# Active crisis management and resilient product portfolio allowed quick 8-week recovery time

## **Organic sales growth - Group**



## **Increased visibility of COVID-19 impact**

- Strongest correlation with mandatory workplace closures
  - **Fertility**: closure of clinics
  - **N&I**: closure of practices, limited visits
  - **Research Solution**: closure of research labs
  - **Display Solutions**: closure of electronic retail
- Merck KGaA, Darmstadt, Germany, well positioned in essential industries:
  - Governments moved from mandatory workplace closures to mandatory workplace measures
  - Immediate restoration of business
- Other changes of a longer-lasting nature (Display or Automotive end markets)

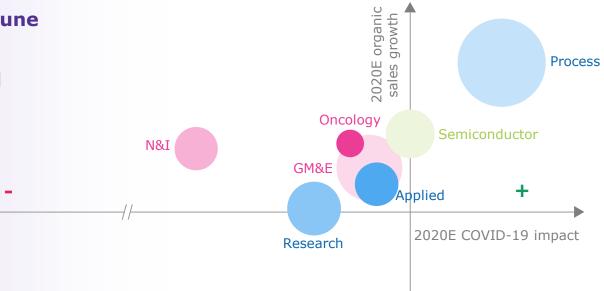
## Group

## 2020 – strong resilience in times of global crisis

- 2020 guidance confirmed; recovery started in June
- Most businesses growing despite COVID-19
- Largest business growing and positively affected
- Smallest businesses with biggest impact

## **Delivery on priorities during crisis**

- √ Health & safety of employees
- Business continuity
- ✓ Contributions to public health and society
- ✓ Sustainability aspects further enforced



Display

**Growth and COVID-19 impact by business**<sup>1</sup>



Merck KGaA, Darmstadt, Germany - steady earnings growth with high margins and a low risk profile

Surface



<sup>&</sup>lt;sup>1</sup> Indicative only and based on guidance from August 6: slight to moderate organic sales and EBITDA pre growth, COVID-19 with up to a mid single-digit impact on sales of which 50-60% hitting EBITDA pre

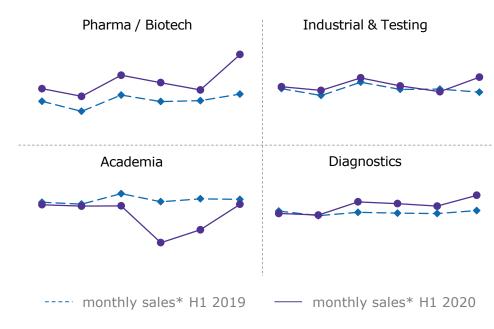
Fertility

# Life Science highly resilient and well positioned to participate in potential mid-term upside from COVID-19

### 2020 heatmap of COVID-19 impact by customer segment

#### Pharma/ Industrial & **Diagnostics** Academia Biotech Testing **Process** COVID-19 COVID-19 COVID-19 **Solutions** insensitive insensitive insensitive Research COVID-19 **Solutions** insensitive **Applied Solutions** downsides from COVID-19

### H1 2020 monthly sales\* by customer segment



<sup>\*</sup> Ilustrative; to scale only within each customer segment



- Mid-term: downsides to fade, some upsides to stay, recovery started in June
- Order book for Process Solutions up by >40%, capacity expansion underway

# COVID-19 guidance given in May overall accurate, improved visibility warrants slight upgrade

### **Group:**

- Up to mid single-digit percentage sales impact full year
- Countermeasures in place: confirm 50 to 60% of net sales impact to hit EBITDA pre
- Recovery visible in June, expected to continue in Q3 and Q4



### **Healthcare assumptions:**

- Biggest impact in Fertility behind, as clinics are opening up again
- Mavenclad® recovery visible in June
- Other businesses normalizing

### **Life Science assumptions:**

- **Net upside** from COVID-19-related demand in Process Solutions
- **Recovery as of June** in Applied Solutions
- **Research** showed **largest impact**, recovering in June as well

#### **Performance Materials assumptions:**

- Strong growth in Semiconductor expected to continue despite COVID-19
- Some ease of impact from COVID-19 in Display versus Q2
- Slight ease on Surface's end markets expected versus Q2

## Group

## **Full-year 2020 guidance**

### **Net sales:**

Slight to moderate organic growth, Versum growth contribution in mid single-digit percentage range; FX between 0% to -2% YoY;

~€16.9 – 17.7 bn

### **EBITDA** pre:

Slight to moderate organic growth, mid single-digit percentage range growth from Versum; FX headwinds of -2% to -4% YoY;

~€4,450 - 4,850 m

**EPS pre:** ~€5.60 - 6.25

# Executive SUMMary

steady earnings growth



Group

Successfully driving transformation into a leading science and technology company



setup

Three-pillar structure strengthened further as a resilient basis; COVID-19 crisis as another proof point



with high margins and a low risk profile

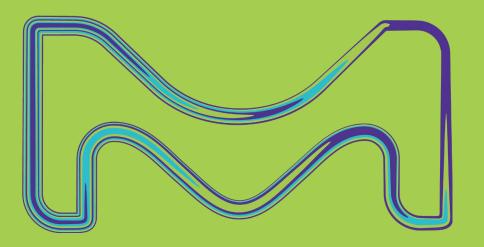
Growth Engines

Healthcare pipeline, Process
Solutions and Semiconductor
Solutions will be key drivers
of growth to 2022
and beyond



Execution

Delivery on strategic priorities ensures profitable growth; regaining financial flexibility with higher likelihood of regular bolt-ons post 2022



## Group

## 2020 business sector guidance<sup>1</sup>

## **Healthcare**



### **Net sales**

- Slight organic growth
- COVID-19 significantly impacting Fertility performance
- Sustained performance of new products

## **EBITDA** pre

- Organically about stable
- Significant adverse FX impact

## **Life Science**



**Net sales** 

- Strong organic growth
- Process Solutions trend offsetting slowdown in Research and Applied Solutions

### **EBITDA** pre

- Strong organic growth
- Moderate adverse FX impact

Performance Materials

**Net sales** 

- Moderate to strong organic decline
- Semiconductor Solutions growing strongly, while COVID-19 weighing on Display and Surface
- Mid-thirties percentage contribution from Versum

**EBITDA** pre

- Organic decline in the low-teens %
- Slight support from FX
- Mid-thirties percentage contribution from Versum

<sup>1</sup>Business Sector guidances are only support to the Group guidance and do not have to add up



# **Additional financial guidance 2020**

## Further financial details

Corporate & Other EBITDA pre	slightly lower than last year
Interest result	~-280 to -310 m
Effective tax rate	~24% to 26%
Capex on PPE	~1.1 bn to 1.2 bn
Hedging/USD assumption	FY 2020 hedge ratio ~65% at EUR/USD ~1.16
2020 Ø EUR/USD assumption	~1.09 to 1.13

## Group

## **Key earnings drivers to remember for 2021**



## EBITDA pre - supporting factors

- Increasing Mavenclad<sup>®</sup> & Bavencio<sup>®</sup> contribution
- Ongoing strength in Life Science with above-market organic sales growth
- Continued strong outlook in Semiconductor Solutions with above-market organic sales growth
- High level of cost consciousness (e.g. M&S and R&D in Healthcare to further decrease as % of sales)
- Potential milestone payments (e.g. Bavencio<sup>®</sup>)



## EBITDA pre - reducing factors

- Glucophage impacted by VBP in China
- Continued decline of liquid crystals and Rebif<sup>®</sup>



Discipline and prioritization will be key ingredients to deliver

## Group

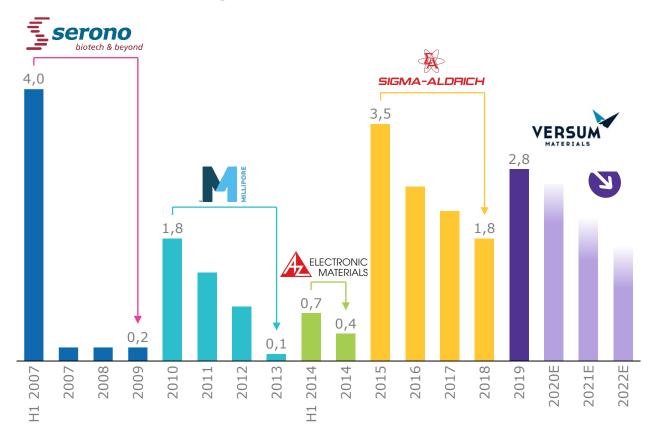
## Focus on organic growth and deleveraging to 2022

UPDATE

# **Proven swift deleveraging** after major acquisitions

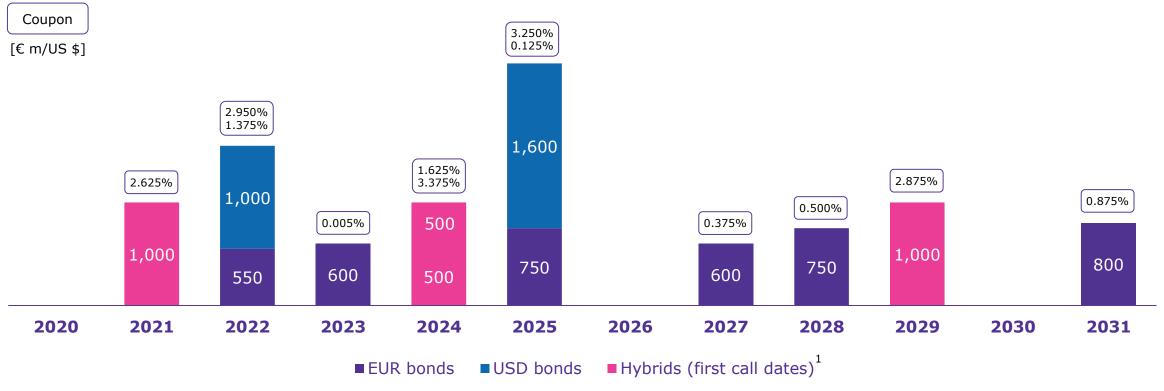
- **Deleverage to <2x** net debt/EBITDA pre in 2022
- M&A on hold until 2022; only smaller deals to be realized if budget available
- New mid-term capex ceiling of ~€1.3 bn reflects increased focus on organic investment and Versum consolidation
- Dividend policy mirrors
   sustainable earnings trend

## **Net debt / EBITDA pre track record & outlook**



## Maturity profile reflects Sigma-Aldrich and Versum financing transactions

## Maturity profile as of June 30, 2020





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

# A strong Q1 and double-digit Q2 growth in Process Solutions and Semiconductor Solutions allow for overall organic growth in H1

H1 YoY Net Sales	Organic	Currency	Portfolio	Total
Healthcare	3.2%	-1.4%	-0.5%	1.3%
Life Science	5.9%	0.2%	0.0%	6.2%
Performance Materials	-9.5%	2.1%	51.1%	43.7%
Group	2.4%	-0.2%	7.7%	10.0%

- Healthcare growing organically in H1 on the basis of a strong Q1 supported by resilient Oncology and General Medicine portfolio in Q2, overall June visibly stronger than May and April
- Accelerating Process Solutions growth is overcompensating flat Applied Solutions and declining Research Solutions where demand was impacted by COVID-19 related lockdowns
- Semiconductor Solutions organic growth accelerated from Q1 to Q2 – however, COVID-19 impact on Display and Surface Solutions results in overall organic decline



 EBITDA pre growing slower than sales organically, largely due to non-recurring Healthcare income (~ €185 m higher in H1 2019)

Currency

Margin accretive Versum portfolio effect

Organic

H1 2019

 FX tailwinds from U.S. and Taiwan dollar did not fully offset currency headwinds from some emerging markets

H1 2020

Portfolio

## H1 2020: Overview

## Key figures

[€m]	H1 2019	H1 2020	Δ
Net sales	7,717	8,489	10.0%
EBITDA pre	2,068	2,256	9.1%
Margin (in % of net sales)	26.8%	26.6%	-0.2pp
EPS pre	2.67	2.80	4.9%
Operating cash flow	1,235	1,019	-17.5%
[€m]	Dec. 31, 2019	June 30, 2020	Δ
Net financial debt	12,363	12,560	1.6%
Working capital	3,944	4,474	13.4%
Employees	57,071	57,523	0.8%

### Comments

- A strong Q1, Versum portfolio effect and accelerating growth in Process and Semiconductor Solutions drive sales above last year, despite materializing COVID-19 impact in Q2
- EBITDA pre growing despite lower nonrecurring income components and fixed cost under-absorption due to lower sales amid COVID-19 impact
- EPS pre growing slower than EBITDA pre driven by a lower financial result
- Lower operating cash flow driven foremost by GSK upfront payment in 2019 and higher working capital in 2020

## **Reported figures**

## Reported results

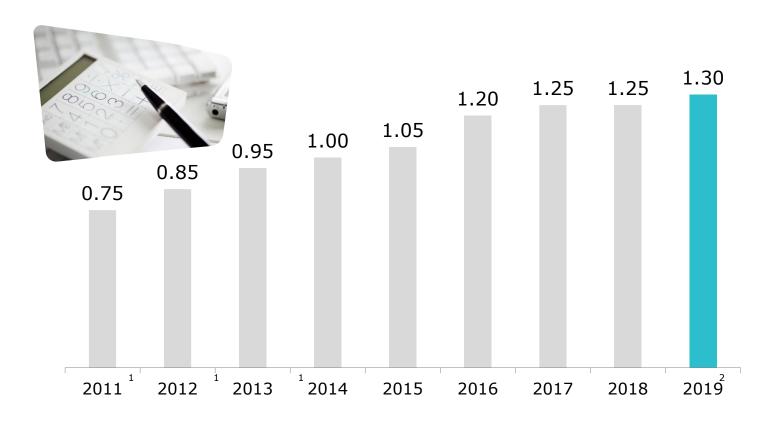
[€m]	H1 2019	H1 2020	Δ
EBIT	997	1,207	21.0%
Financial result	-174	-201	15.6%
Profit before tax	824	1,006	22.2%
Income tax	-203	-259	27.5%
Effective tax rate (%)	24.7%	25.8%	1.1pp
Net income	659	746	13.1%
EPS (€)	1.52	1.72	13.2%

### Comments

- EBIT increase driven by Versum portfolio effect and Life Science growth, partially offset by lower nonrecurring income, higher depreciation & amortization from Versum PPA and impairments in Performance Materials
- Financial result impacted by LTIP and higher interest expenses related to Versum financing
- Effective tax rate within guidance range of ~24-26%
- Higher net income and EPS reflect higher EBIT

## **Sustainable dividend growth**

## Dividend¹ development 2011-2019



### 2019 dividend

- Dividend of €1.30 (+4% YoY) per share proposed<sup>2</sup> for 2019
- Payout ratio of 23.4% of EPS pre in 2019; we aim at 20–25% of EPS pre
- Dividend yield of 1.2%

#### Phase I

berzosertib (M6620) ATR inhibitor Solid tumors

peposertib (M3814) DNA-PK inhibitor

Solid tumors1

M1774 ATR inhibitor Solid tumors

M3258 LMP7 inhibitor Multiple myeloma

M4344 ATR inhibitor Solid tumors

M8891 MetAP2 inhibitor Solid tumors bintrafusp alfa
TGFbeta trap/anti-PD-L1
Solid tumors

M9241 (NHS-IL12) Cancer immunotherapy Solid tumors<sup>1</sup>

M5049
TLR7/8 antagonist
Immunology
M6495
anti-ADAMTS-5 nanobody
Osteoarthritis

M5717 PeEF2 inhibitor Malaria

#### Phase II

peposertib (M3814) DNA-PK inhibitor Rectal cancer

tepotinib

MET kinase inhibitor

Non-small cell lung cancer

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

bintrafusp alfa TGFbeta trap/anti-PD-L1

Non-small cell lung cancer 1L/2L

bintrafusp alfa
TGFbeta trap/anti-PD-L1
Locally advanced non-small cell

Locally advanced non-small cell lung cancer

bintrafusp alfa TGFbeta trap/anti-PD-L1 Biliary tract cancer 1L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Biliary tract cancer 2L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Cervical cancer 2L avelumab anti-PD-L1 mAb Solid tumors<sup>2</sup>

avelumab anti-PD-L1 mAb

Non-small cell lung cancer<sup>2</sup>

avelumab anti-PD-L1 mAb Urothelial cancer<sup>2</sup>

M5049 TLR7/8 antagonist Covid-19 pneumonia

atacicept
anti-BlyS/APRIL fusion protein
Systemic lupus erythematosus

atacicept
anti-BlyS/APRIL fusion protein
IgA nephropathy

sprifermin fibroblast growth factor 18 Osteoarthritis

M1095 (ALX-0761)<sup>3</sup> anti-IL-17 A/F nanobody Psoriasis

#### Phase III

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, *MET*ex14 skipping<sup>4</sup>

**avelumab anti-PD-L1 mAb** Urothelial cancer 1L-M<sup>5</sup>

- Oncology
- Immuno-Oncology
- Immunology
- Neurology
- Global Health

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 March 25 2020, tepotinib was approved in Japan for the treatment of patients with non-small cell lung cancer harboring METex14 skipping. ⁵ As announced on June 30, 2020, Avelumab was approved in US for maintenance treatment of patients with locally advanced or metastatic urothelial carcinoma (UC) that has not progressed with first-line platinum-containing chemotherapy.

# Tepotinib is a highly selective oral, once daily, MET TKI that blocks MET-mediated signaling pathways



- Preclinical and clinical evidence support MET activation as a primary oncogenic driver in lung cancer subsets and as a secondary driver of acquired resistance to targeted therapy in other lung cancer subsets<sup>1</sup>
- Higher prevalence of MET alterations amongst elderly patients in Lung (median age of patients with METex14: 72.5 years)
- Evidence exists to support the role of MET in cancers and resistance settings other than lung cancer

Other genetic alterations

Adressable Patient Population Total global NSCLC patients (2 million new

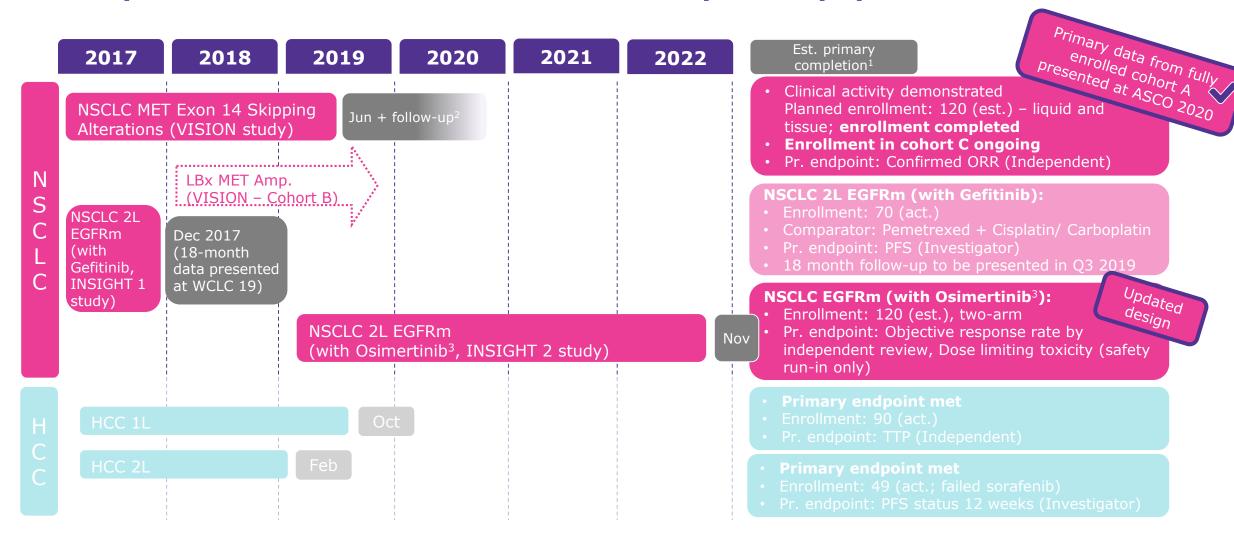
cases/year)<sup>2</sup>

METex14: ~3%  $\sim$ 3-5% of total **VISION Trial NSCLC** (NCT02864992) METamp: ~2% population 15 - 20%2-5% of total EGFRm+: **INSIGHT 2 Trial** with US/EU: ~12% **NSCLC** (NCT03940703) **METamp** population Asia: ~35%

Key Achievements

- SAKIGAKE designation awarded in Japan, Breakthrough designation awarded by US FDA
- METex14: Tepmetko approved in Japan in March, USA filing on track under RTOR
- **EGFRm+/METamp:** INSIGHT 2 program started in 2019, study design adapted in 2020 to align with current treatment landscape

## **Development focused on biomarker enriched patient populations**



## Tepotinib: Updated data presented at ASCO 2020

## 9-months follow-up from the VISION study highlights durable clinical activity of Tepotinib<sup>1</sup>

#### **Patients**

- As of 01 January 2020, 152 patients received tepotinib (safety population) and 99 patients comprised the primary efficacy population with ≥9 months' follow-up data
- 60/152 and 22/99 patients were still receiving tepotinib at data cut-off

### Clinical response in the primary efficacy population

Objective response rate by independent review (primary endpoint) was 46.5-50.0% and by investigator assessment was **55.6-61.7%** 

		psy group† 66)	Tissue-biopsy group‡ (n=60)		oup <sup>‡</sup> Combined* (n=99)	
	IRC	INV	IRC	INV	IRC	INV
Objective response rate, % (95% CI)	48.5 (36.0, 61.1)	56.1 (43.3, 68.3)	50.0 (36.8, 63.2)	61.7 (48.2, 73.9)	46.5 (36.4, 56.8)	55.6 (45.2, 65.5)
Duration of response, median months (95% CI)	9.9 (7.2, ne)	14.0 (7.3, ne)	15.7 (9.7, ne)	16.4 (9.7, ne)	11.1 (7.2, ne)	14.0 (9.7, 18.3)
Disease control rate, % (95% CI)	65.2 (52.4, 76.5)	69.7 (57.1, 80.4)	68.3 (55.0, 79.7)	78.3 (65.8, 87.9)	65.7 (55.4, 74.9)	72.7 (62.9, 81.2)

'Two patients were liquid-biopsy positive only. '25 patients were tissue-biopsy positive only; objective response rate by independent review was 40.0% (95% CI: 21.1, 61.3) and 48.0 (95% CI: 27.8, 68.7) by investigator assessment. "Combined = liquid-biopsy positive and/or tissue-biopsy positive. INV, investigator assessment; IRC, independent review committee; ne, not estimable; CI, confidence interval

### Manageable tolerability profile (n=152)

- Grade ≥3 treatment-related adverse events reported in 27.6% of patients
- Few adverse events leading to discontinuation (permanent discontinuations in 11.2% of patients)
- No grade 5 TRAEs, few grade 4 (2%)

### **Activity in patients with brain metastases**

**Outcomes in patients with baseline brain** metastases (n=11), all of which were nontarget lesions, were comparable to the overall population

May 29, 2020: Updated data published in The New England Journal of Medicine (NEJM)<sup>2</sup>



H. Senellar, J. Van Meerbeeck, J. Raskin, N. Reinmuth, P. Conte, D. Kowalski, B.C. Ch.

J.D. Patel, L. Horn, F. Griesinger, J.-Y. Han, Y.-C. Kim, G.-C. Chang, C.-L. Tsai,

J.C. H. Yang, Y. M. Chan, F.F. Smit, A.I. van der Welken, T. Kato, D. Iuraeva,

J.C. H. Yang, Y. M. Chan, F.F. Smit, A.I. van der Welken, T. Kato, D. Iuraeva, J.D. Patel, L. Horn, F. Griesinger, J.Y. Han, Y.C. Kim, G.C. Chang, C.-L. Tsai, J. L. Horn, F. Griesinger, J.Y. Han, Y.C. Kim, G.C. Chang, C.-L. Tsai, J. V. Haven, G. T. Kato, D. Juraeva, J.C.-H. Yang, Y.-M. Chen, E.F. Smit, A. J. van der Wekken, T. Kato, D. Juraeva, and Y. Lacken, J. C. Stroh R. Rruns, I. Strauh A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh R. Rruns, I. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. C. Stroh R. Rruns, I. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Rruns, I. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Rruns, I. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Rruns, I. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Strauh, A. Inhno I. Schoola, IV. Hawmarh, and Y. Lacken, G. Stroh, R. Strauh, A. Inhno I. Schoola, IV. Hawmarh, A. Inhno II. Schoola, IV J.C.H. Yang, Y.-M. Chen, E.F. Smit, A.J. van der Wekken, T. Kato, D. Juraeva, and X. Le C. Stroh, R. Bruns, J. Straub, A. Johne, J. Scheele, J.V. Heymach, and X. Le

Merck KGaA Darmstadt, Germany

## Tepotinib: Clinical Efficacy in Met-amp EGFR-mutant Population

## **INSIGHT 2 study follows from encouraging INSIGHT 1 data**

Data from INSIGHT 1 study (18-months follow-up presented at WCLC 2019)<sup>1</sup>

MET-amp population:

Endpoint	Tepotinib + gefitinib	Chemotherapy
Primary - PFS (HR 0.13 [90% CI 0.04, 0.43])	16.6 m	4.2 m
Secondary - ORR (OR 2.67 [90% CI 0.37, 19.56])	66.7%	42.9%
Secondary - OS (HR 0.09 [CI 0.01, 0.54])	37.3 m	13.1 m

- **METamplification** can be considered a **suitable** biomarker for treatment with tepotinib
- **Safety:** generally well-tolerated, most AEs mild to moderate
- Enrollment halted due to low recruitment

INSIGHT 2 study

Recently updated to reflect evolved standard of care

### **Study Design:**

- Two-arm study, open label, N = 120
- Enrollment restricted to participants whose disease has progressed following first-line treatment with osimertinib<sup>2</sup>
- MET Amplification Determined Centrally by Fluorescence in situ Hybridization (FISH); explorative LBx testing

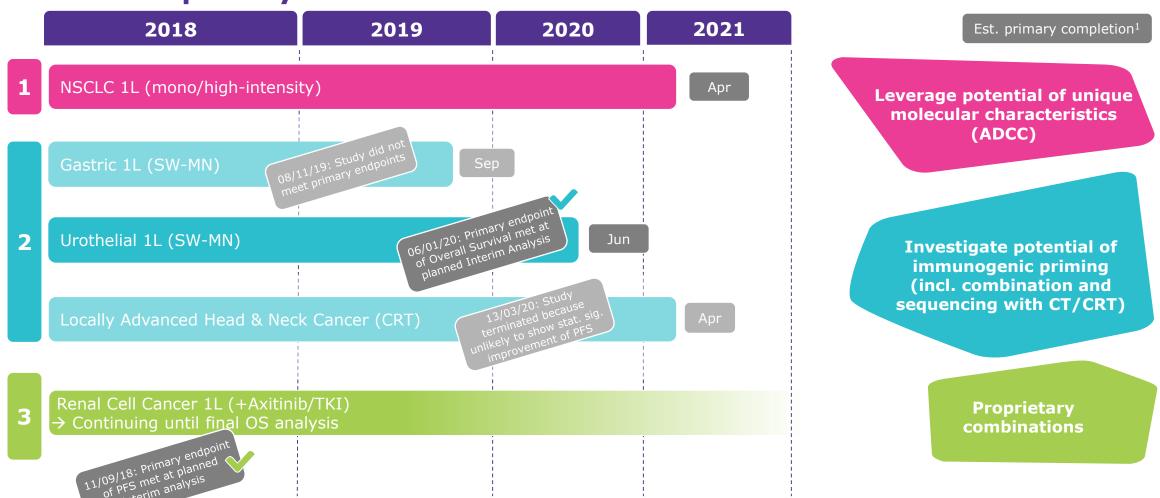
### **Arms & Interventions:**

- 1. Tepotinib 500mg QD + Osimertinib 80mg QD
- 2. Tepotinib 500mg QD

## **Primary endpoints:**

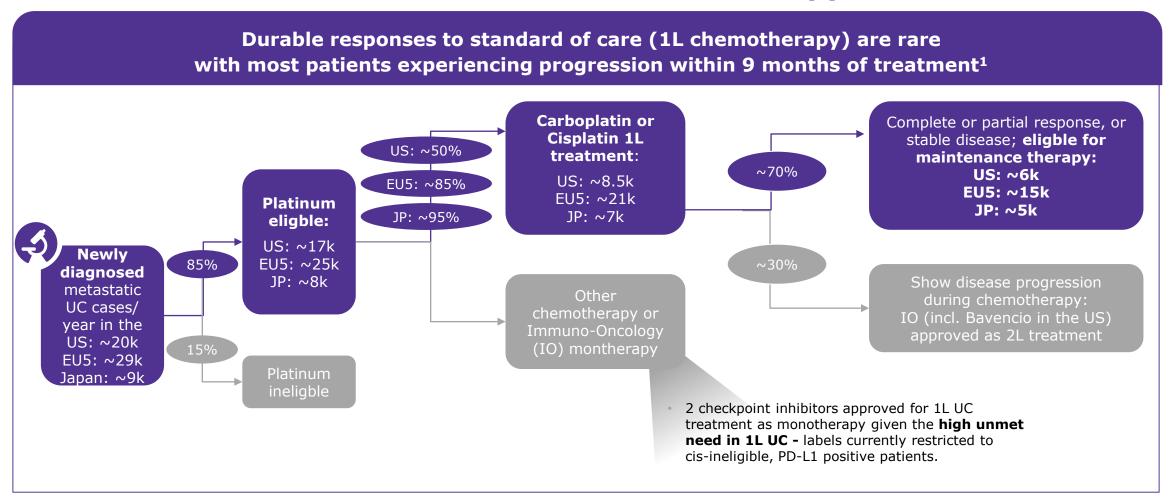
- Objective response rate by independent review
- Number of participants experiencing dose limiting toxicities

# Ongoing studies – JAVELIN Bladder 100 data (UC 1L) presented at ASCO 2020 plenary session



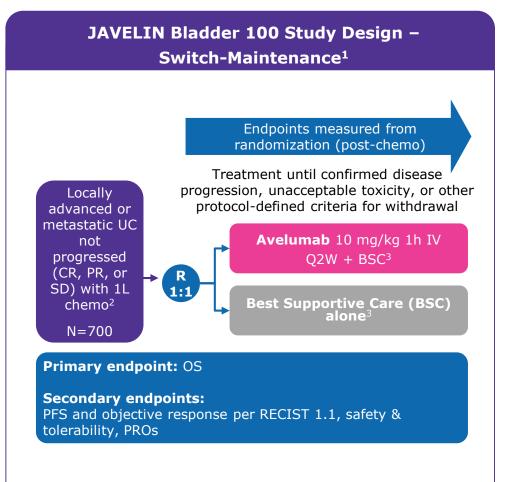
## Avelumab: UC 1L / JAVELIN Bladder 100

# There is an urgent need for a 1L treatment strategy that maintains and reinforces the initial benefit of induction chemotherapy



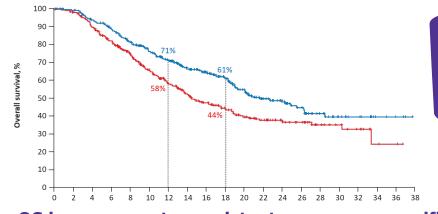
## Avelumab: UC 1L / JAVELIN Bladder 100

## First & only immunotherapy to significantly improve OS as a 1L treatment for locally advanced or metastatic urothelial cancer in a Phase III study



### Transformative OS data of "historic significance" featured at the ASCO 2020 plenary session4

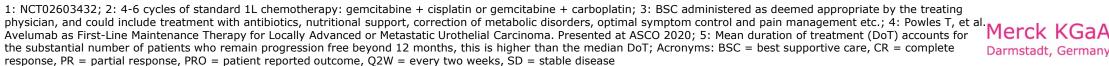
31% reduction in risk of death and an increase of 7 months in the median overall survival (21.4 months for Bavencio® + best supportive care (BSC) versus 14.3 months for BSC alone



### Median duration of treatment<sup>5</sup>:

Avelumab + BSC arm: 24.9 weeks (~5.8 mths) BSC alone arm: 13.1 weeks

- OS improvements consistent across pre-specified subgroups, regardless of the type of platinum-based chemotherapy received and patients' PD-L1 status
- No new safety signals were identified, and the safety profile was consistent with previous studies of Bavencio® monotherapy

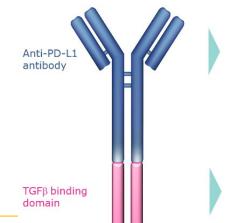


## Bintrafusp alfa<sup>1</sup> (M7824)

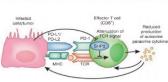
An innovative first-in-class bifunctional fusion protein discovered in-house **leading the TGF-β immuno-oncology field** 



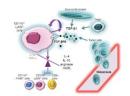
- Innovative first-in-class bifunctional fusion protein designed to simultaneously target two immune suppressive pathways (blocking PD-L1 and reducing TGF-β signaling)
- Demonstrated superior anti-tumor activity in pre-clinical study compared to anti-PD-L1 alone, and anti-PD-L1 and TGF-β given in combination as separate agents
- Great excitement in IO community about M7824 uniquely addressing TGF-ß biology widely accepted as key resistance factor for anti-PDx therapies







TGFB immunosuppressive cytokine





- Tested in **14 Phase Ib expansion cohorts** across >700 patients in more than 10 tumor types
- Shown clinical anti-tumor activity across multiple hard-to-treat cancers including advanced NSCLC, biliary tract cancer, HPV-associated cancers, and gastric cancer
- PhII study M7824 monotherapy versus pembrolizumab 1L, advanced NSCLC high PD-L1-tumor expressers started in October 2018



- Multiple high priority immuno-oncology clinical development studies ongoing or expected to commence shortly, including studies in non-small cell lung and biliary tract cancers with registrational intent and most recently advanced, unresectable cervical cancer
- Further plans to be communicated at a later stage







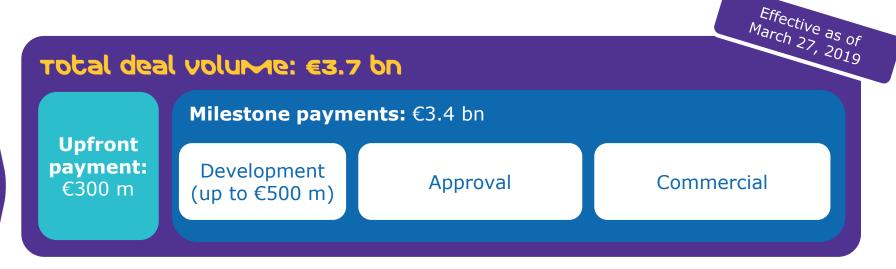


Bintrafusp alfa<sup>1</sup> (M7824): Strategic Alliance with GlaxoSmithKline (GSK)

Attractive payment terms rewarding developmental success



upfront & Milestone payment structure



**Development milestones:** Up to €500 m triggered by data from the M7824 lung cancer program



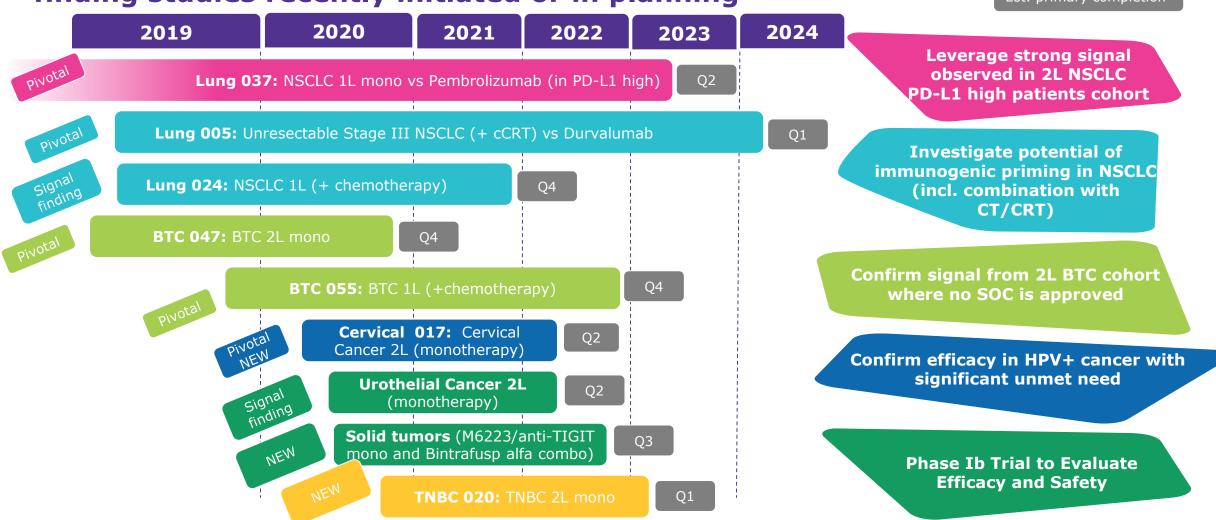
<sup>1</sup>proposed International Nonproprietary Name (INN)

- Profits & Costs: Shared equally on a global basis
- Sales: Merck KGaA, Darmstadt, Germany, to recognize sales in the United States, GSK to recognize sales ex-U.S.

## Bintrafusp alfa: Development Strategy

Program overview: Five pivotal studies on track, several safety and signal finding studies recently initiated or in planning

Est. primary completion<sup>1</sup>



## Bintrafusp alfa: Developmental Progress

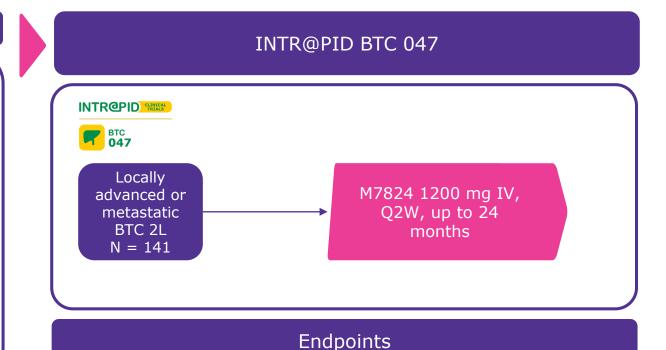
## 2L Biliary Tract Cancer (BTC) monotherapy trial recently initiated

### M7824 BTC data presented at ESMO 2018

- Need: Few available treatment options (no 2L standard of care)1
- Results: Encouraging activity<sup>2</sup> in 30 Asian patients with pretreated biliary tract cancer
- ORR<sup>2</sup>: 20% (IRC assessment). Median DoR was NR (range, 8.3–13.9 months) with confirmed responses ongoing in all patients
- Overall Survival by IRC: mOS: 12.7 months (6.7 NR), comparing favorably with historical data in pretreated patients receiving second- or later line treatment (<7 months mOS in 2L1)
- Responses observed irrespective of PD-L1 expression levels<sup>2</sup>
- Orphan Drug Designation granted by FDA in December 2018

### Leading PDx data presented at ASCO 2019<sup>3</sup>

- ORR: 5.8% (PhII, 2L); 13.0% (PhI)
- **OS:** 7.4 months (PhII, 2L); 6.2 months (PhI)

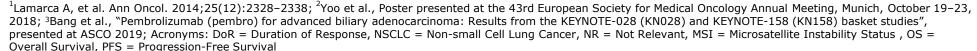


### **Primary endpoint: ORR**

Secondary endpoints: DOR, DRR, PFS, OS, Safety

Biomarker endpoints: PDL1 expression MSI status, comprehensive

genomic profiles



## **NSCLC Stage III cCRT Combo trial recently initiated**

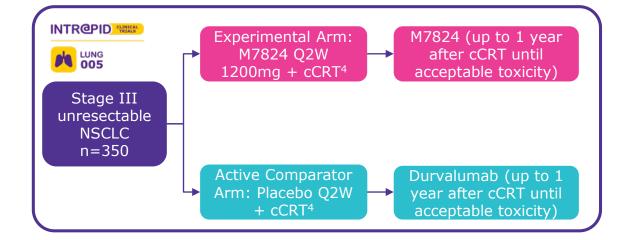
### NSCLC 2L data presented at ESMO 2018

- Need: NSCLC accounts for 80-85% of all cases of lung cancer<sup>1</sup>
- Results: Encouraging efficacy comparing favorably to established PDx-inhibitor monotherapy (IRC)2,3:
  - **ORR (all-comers):** 25.0%
  - ORR (PD-L1-positive): 37.0%
  - ORR (PD-L1-high): 85.7%
- Progression free survival by IRC (PD-L1  $\geq$  1%):
  - M7824: **mPFS = 9.5 months**, competitor:  $4.0 \text{ months}^{2,3}$
- Overall Survival by IRC (PD-L1  $\geq$  1%):
  - M7824: mOS not reached, competitor: 12.7 months<sup>2,3</sup>

### Pre-clinical data on M7824 + RT combo<sup>5</sup>

- M7824 and RT combination therapy enhances antitumor activity relative to mono-therapies in mouse models
- EMT, VEGF, and RT-induced fibrosis gene signatures are decreased with M7824 and combination therapy, and M7824 reduces RT-induced fibrosis
- Results support evaluation of M7824 + RT in the clinic

### INTR@PID LUNG 005



### **Endpoints**

### **Primary endpoint: PFS**

Main secondary endpoints: OS, Safety, Pulmonary function, Association of PD-L1 expression at base line and efficacy

## Bintrafusp alfa: Developmental Progress

## Data shown at AACR 2019 highlights opportunity in HPV-related cancers

Efficacy variable	HPV-associated cancer (n=43)	HPV+* (n=36)
Confirmed BOR, n (%)		
CR	2 (4.7%)	2 (5.6%)
PR	10 (23.3%)	9 (25%)
SD	6 (14.0%)	5 (13.9%)
PD	20 (46.5%)	17 (47.2%)
Not evaluable	5 (11.6%)	3 (8.3%)
Delayed PR <sup>†</sup>	3 (7.0%)	3 (8.3%)
<b>ORR per RECIST v1.1,</b> n (%) [95% CI]	12 <b>(27.9%)</b> [15.3–43.7]	11 <b>(30.6%)</b> [16.3-48.1]
Total clinical response rate <sup>+</sup> , n (%)	15 <b>(34.9%)</b>	14 <b>(38.9%)</b>
DCR, n (%)	18 (41.9%)	44.4%

Prevalence: >630,000 new cases of HPV-related cancer are reported worldwide annually<sup>1</sup>

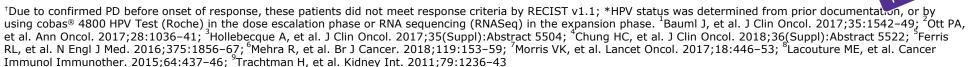
### **Response Rates:**

- Bintrasfusp alfa response rates compared favorably to those with anti-PD-1 inhibitors (ORRs of 13%-24%)<sup>1-7</sup>
- ORR was 27.9% and 30.6% in HPV-associated and HPV+ cancers, respectively
- Including three additional patients with delayed PRs after initial PD: Total response rate was 34.9% and 38.9% in HPVassociated and HPV+ cancers, respectively

#### **Long-term Benefit:**

- Most responses durable with 4 responses having DoR >18 months and 11/15 responses ongoing at the data cutoff
- Responses to bintrafusp alfa occurred irrespective of tumor type or PD-L1 expression
- Safety profile was similar to anti-PD-(L)1 therapy<sup>1,5</sup> except for SCC/KAs and low grade mucosal bleeding which are anticipated AEs with TGF-β inhibition<sup>8,9</sup>







## Leadership in next generation assets beyond PARP



**DNA Damage**Response

A Core Research
Innovation Cluster

- DDR defects are an "achilles heel" of cancer cells
- ATR, ATM and DNA-PK are the trinity of targets that orchestrate cellular response DNA damage and replication stress
- Leading clinical portfolio with 6 assets (in Phases 1 and 2) targeting ATR, ATM and DNA-PK
- Rich pre-clinical and translational science driving biological innovation and patient selection
- Ideally placed to drive novel combinations within DDR portfolio and broader immuno-oncology portfolio
- Multiple early signal finding studies allow for evidence-based decision making & focus in future development



## DNA Damage Response (DDR)

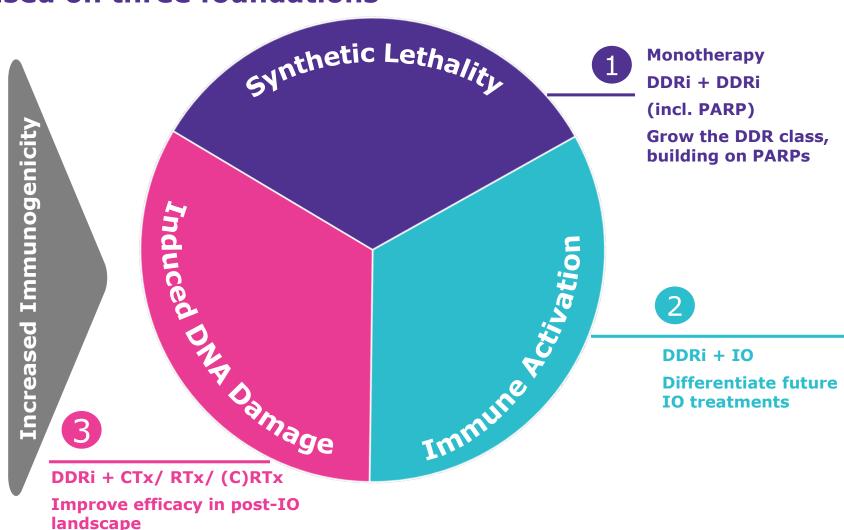
## **Development is focused on three foundations**

Differentiating aspects of cancer DDR that can be targeted therapeutically<sup>1</sup>:

Loss of one or more DDR pathways

**Increased levels of replication stress** 

Increased levels of endogenous DNA damage



## DNA Damage Response (DDR)

Clinical program targets three major DDR pathways, in mono- and

combination (incl. Avelumab)

Estimated primary completion<sup>1</sup>

M6620 CT combinations in various settings; data from Ovarian cancer study recently published in the *Lancet Oncology* 

Phase I dose escalation ongoing for monoand combination therapy (with CT)

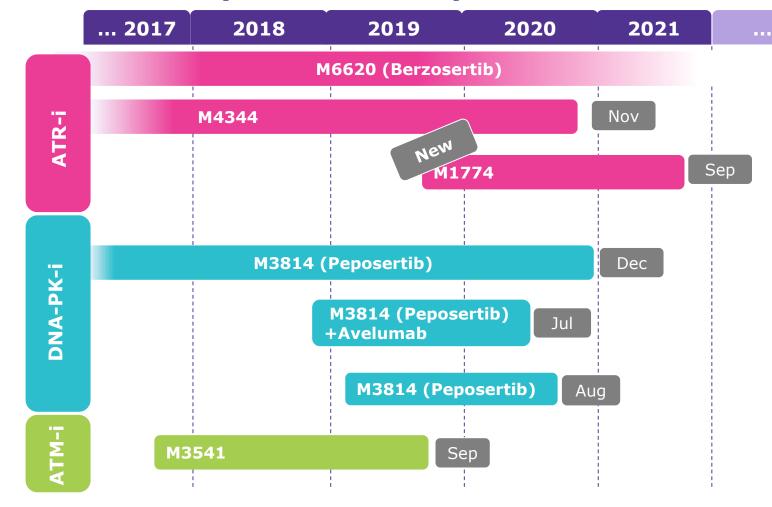
Phase I dose escalation in metastatic or locally advanced unresectable solid tumors

One study completed (mono), one study ongoing (Phase I + Ib expansion, combination with RT/ CRT)

Phase I dose escalation initiated (+Avelumab with/without palliative RT), advanced solid tumors

Phase I/II study initiated for locally advanced rectal cancer (with CRT)

Development stopped, focus shifted to M4076 (clinical candidate ATM-i, chemica structure first disclosed at AACR 2019)



## China's VBP: Recently announced round 3 includes metformin, as anticipated, with implementation expected to follow in Q4 2020



Round 1 Round 2 Round 3 2019 2020 2021 March: 4+7 pilot initiated in **December:** Official 4 municipalities<sup>1</sup> and 7 key July: Official announcement of announcement of Round 2 Round 3 (incl. Metformin IR and cities in other provinces<sup>2</sup> (incl. Concor®) XR), tender parameters: up to 8 winners granted up to 80% of June/July: Provincial As of April: Gradual hospital market<sup>3</sup>, all expansion to Fujian & implementation of Round 2, manufacturers requested to Hebei provinces 2 winners granted exclusive comply with NMPA guidance on access to 60% of total NDMA testina hospital market<sup>3</sup>, non-September: winners (incl. Concor) retain **August:** Bidding scheduled for August 20, remaining 25 gradual implementation anticipated as of Q4 access to remaining 40% of provinces added 2020, in line with company expectations hospital market at a gradient to "4+7" price cut<sup>4</sup> + can freely compete in non-hospital/ retail market to grow >10% p.a. over the next 5 years



## Sustained confidence in at least stable base business until 2022

1: Beijing, Shanghai, Chongqing, Tianjin; 2: together encompasses ~1/3 of Chinese drug market; 3: hospital market for bisoprolol and metformin makes up ~70% of total market, this includes urban hospitals, rural hospitals, and community health centers; 4: Concor® price cut in the high single digit %; Acronyms: NMPA = National Medical Products Administration, VBP = Volume-Based Procurement, NDMA = N-nitrosodimethylamine, also known as nitrosamine

- **Growing market:** Chinese metformin market
- "up to" 80% access and up to 8 winners **only a guidance**, to be finalized post-bidding
- ✓ Non-hospital/retail market **not subjected to** gradient price cut
- Company following a carefully crafted bidding strategy

## Neurology & Immunology

# Broad portfolio positions Merck KGaA, Darmstadt, Germany, as a growing Multiple Sclerosis player





Launch



<u>perelopment</u>





EVODPULINIO (BTK-INHIBITOR)

- Stable market share: within declining interferon class
- Renewed HCP interest:
  driven by updated
  pregnancy & lactation label
- Continued blockbuster status in 2020

- Growth: Continued growth within the high efficacy and oral class dyamic share
- Focused execution: Driving depth and 2<sup>nd</sup> year returns
- Global peak sales: €1 - 1.4 bn

- Advancing on benefitrisk in high efficacy oral category
- **Blockbuster potential**

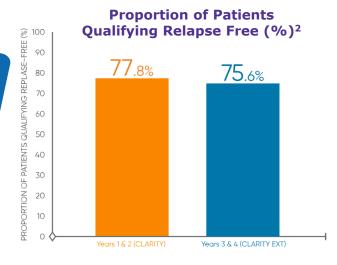


# Mavenclad could change the MS treatment paradigm

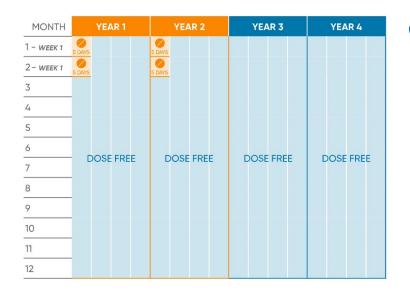
Consistent
efficacy: High
efficacy¹ across all
relevant clinical
and radiological
endpoints

- 58% reduction in annualized relapse rate<sup>2</sup>
- 47% reduction in 6-month confirmed disability progression<sup>3</sup>
- 86% reduction in T1 Gd+ lesions<sup>2</sup>
- 73% reduction in T2 lesions<sup>2</sup>

Durability:
Relapse-free for
4 years with no
treatment in
years 3
and 4<sup>2</sup>



No evidence of disease activity ->





Unique posology: Weight-based, max. 20 days of oral treatment<sup>2,3</sup>

> Lowest monitoring requirements across all currently approved highefficacy DMDs in a 4-year horizon



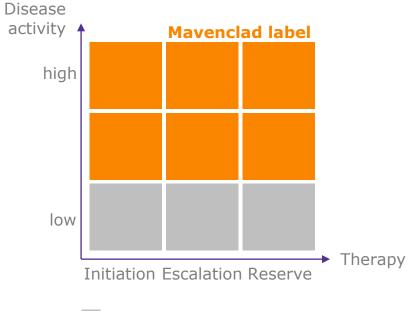
# Mavenclad's attractive label in Europe supports integrated franchise strategy

Mavenclad label covers
60-70% of patients with RRMS<sup>1</sup>
within the MS<sup>1</sup> patient population
in Europe

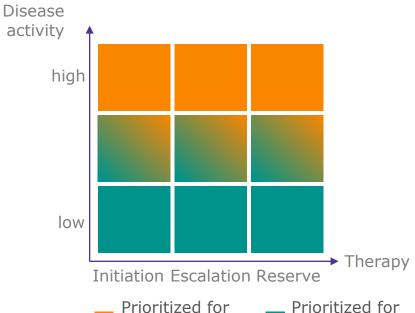
Group's overall NDD franchise will cover a broad MS patient pool

Integrated franchise strategy

#### MS patient population<sup>2</sup>



## RRMS patients, EU-5<sup>3</sup>

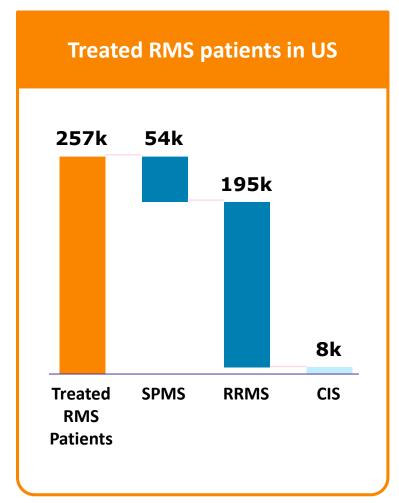


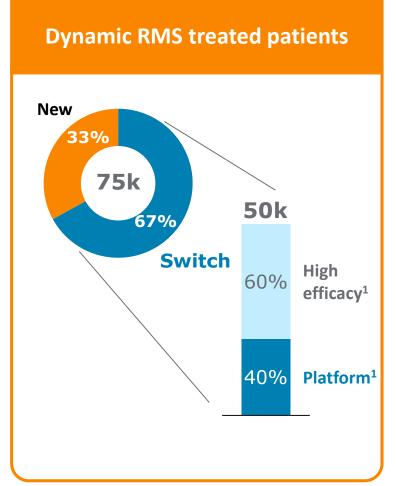
- At patient level: Rebif and Mavenclad are highly complementary
- At physician level: High overlap
- Franchise infrastructure investment benefits both brands

Not covered by label



# On March 29, the FDA approved Mavenclad for the treatment of adults with relapsing-remitting (RRMS) and active secondary progressive disease (SPMS)





# Mavenclad addresses clear medical needs

- Previously treated patients represent the vast majority of the dynamic patient pool
- Lack of efficacy is the predominant driver of switching, hence observed "high-efficacy" share of switches
- Intolerance also drives switching, though to a lesser degree, and results in switches between classes
- Novel mechanism and unique oral short-course regimen of Mavenclad addresses these needs

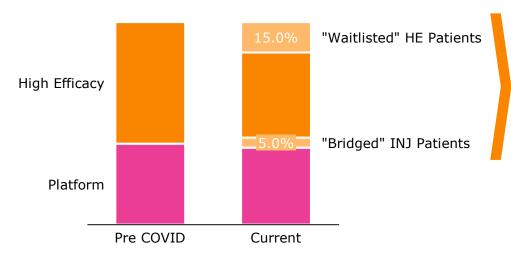


# Aiming to capitalize on "waitlisted" patient opportunity amid COVID-19 pandemic

#### 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 therapies<sup>1</sup>

#### **US dynamic market<sup>2</sup>:**



# Mavenclad®: Profile suited to evolved choice drivers

- **▼** Lack of continuous immunosuppression<sup>3</sup>
- Transient preferential targeting of B and T lymphocytes<sup>4</sup>
- Specifically important for viral defense ...
  - Moderate T cell reduction with lower impact on CD8+4
  - Minimal impact on innate immunity<sup>5-7</sup>
- 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 recovery<sup>3</sup>

<sup>1: &</sup>quot;Monitoring the Impact of COVID-19 on the Pharmaceutical Market", IQVIA; 2: IQVIA weekly data; 3: Mavenclad® EU SmPC, 2020; 4: Comi G, et al. Mult Scler Relat Disord. 2019;29:168–174; 5: Rieckmann P, et al. ECTRIMS 2009 [P816]; 6: Sorensen PS et al. ECTRIMS-ACTRIMS 2017 [P1141]; 7: Giovannoni G et al. N Engl J Med 2010;362:416–26 (and suppl. info).; Acronyms: HE = High Efficacy, INJ = Injectables, KOL = Key Opinion Leader

## **Evobrutinib**



# Comprehensive development plan across immune-mediated diseases

arms (low, mid, high dose)

Phase I/ Robust phase II program to Est. primary Iia safety data-set enable differentiated phase III completion Randomized, double-blind, placebo- 48 wks data presented at AAN 2019 controlled study in patients with RMS ~96 weeks data presented at Evobrutinib 267 patients **Strategy Update** call in February 2020 **5 arms study:** placebo vs. 3 drugs-**Safety** • Start of recruitment in modified studies arms (low, mid, high dose) incl. active 24 patients **Detailed cinical data from 2+ years** control reference arm (Dimethyl · Double-blind, (RMS) to be shared at a future scientific fumarate) Randomized, Placeboconference controlled Study Randomized, double-blind, placebocontrolled dose-ranging study in Study completed **V** subjects with SLE SL Primary efficacy endpoint not met, 451 patients development deprioritized • 4 arms study: placebo vs. 3 drugs-**Signal Finding**  Data to be shared at a future conference arms (low, mid, high dose) 65 patients · Randomized, double-RA Randomized, double-blind, placebo-Study completed **V** blind, placebo-controlled controlled dose-ranging study in Primary efficacy endpoint not met, trial in subjects with RA subjects with RA development deprioritized on stable Methotrexate 360 patients Data to be shared at a future conference therapy • 4 arms study: placebo vs. 3 drugs-

#### **Evobrutinib**

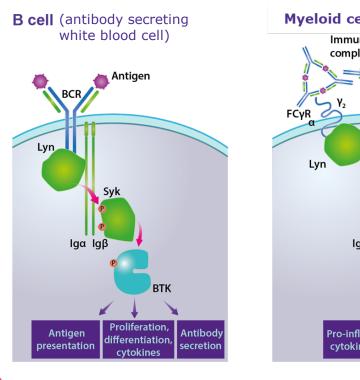


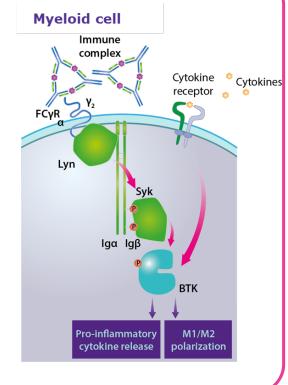
#### BTK inhibitor with a dual mode of action

#### **Dual Mechanism of Action**

- Bruton's tyrosine kinase inhibitors (BTKi's)
  are traditionally used in oncology but are now
  also being evaluated in immunology
- B-cell depletion studies have shown that antibody-independent B-cell functions play an important role in MS pathogenesis (development)<sup>1-3</sup>
- An altered innate immune system contributes to progression in MS<sup>4,5</sup>
- Evobrutinib has a dual mode of action, impacting on B-cells, macrophages and pathways involved in inflammation in MS; this has been confirmed in animal models<sup>6-11</sup>

# **Involvement of BTK in immune cell function**







# Significant unmet medical need remains in RMS

#### Unmet needs in RMS ...



#### need for new mechanisms to control disease

- Approx. 50% of patients with RMS continue to have ongoing disease activity over
   2 years even when treated with the most effective agents<sup>1</sup>
- Therapies addressing adaptive and innate pathobiology peripherally and in the CNS



- 5 approved therapeutic classes considered "higher efficacy"<sup>2</sup>, only 2 of which are oral
- No approved oral therapy with efficacy on progression vs. an active control



- Systemic side effects of therapies limit patient acceptance and compliance
- All approved higher efficacy therapies associated with elevated risk of infection

#### ... addressed by Evobrutinib in RMS

- Well Tolerated, no new safety signals identified up to ~96 weeks
- Long term exposure of Evobrutinib did **not result in** increase of serious infections nor lymphopenia, consistent with Evobrutinib's mechanism of action
- Evobrutinib is **not associated with systemic side effects** (e.g. GI disturbances)
- LFT elevations in a minority of patients restricted to first 6 months enabling patient management through appropriate monitoring
- Comprehensive safety characterization based on exposure to Evobrutinib across RMS, RA and SLE studies

21,200 patient 49 data base



2 years+ in RMS



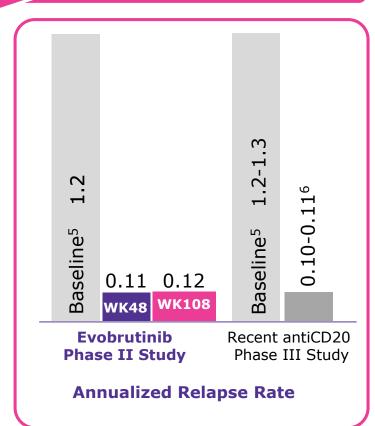
# 108 weeks data from Phase II, presented at EAN 2020, confirms potential for mAb like efficacy with a rapid onset of action

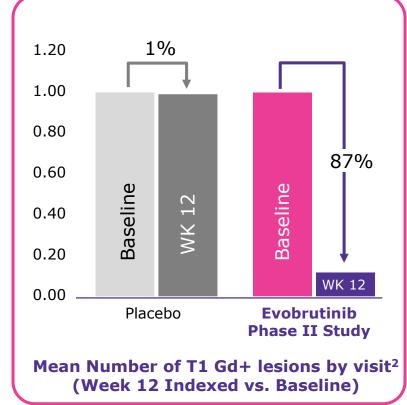
UPDATED DATA

"mAb like" Efficacy4

**Rapid Onset of Action** 

**Direct CNS and Peripheral Effects** 



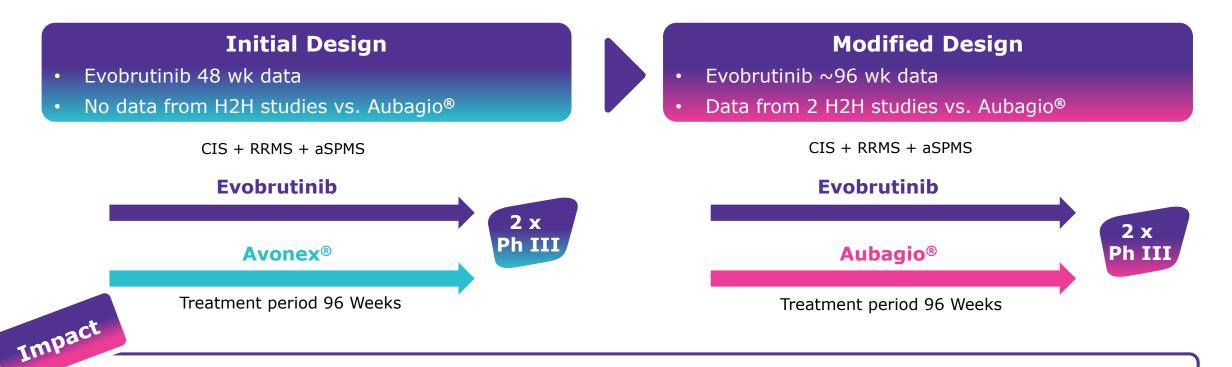


- Impacts B-Cells and Myeloid Cells, which play a key role in the pathophysiology of MS
- Crosses the blood-brain barrier<sup>1</sup>
- Achieves Brain BTKi occupancy<sup>3</sup>
- Potential to impact CNS resident innate immunity as well as peripheral immune components

#### **Evobrutinib**



# mAb like efficacy data drives modification of Phase III study design



- Studies vs Avonex® will be replaced by 2 new studies vs Aubagio®
- Fundamentally unchanged study design, POS, and cost
- Broad network of sites selected for study vs. Avonex® ready to pivot to modified design
- Goal is to have Phase III RMS data in-house in Q4 2023, and filing shortly thereafter

# Strategic direction – innovate and invest today to continue above market growth in the future



**Modality** 



TRADITIONAL



ALL





NOVEL



Revenue driver



Near term



Mid term



Long term



**Offering** 



**Products** 



Services



Products



**Portfolio** 





- Contract development & manufacturing organization
- ✓ Contract testing organization
- ✓ Product characterization



- Templated viral manufacturing consumables and reagents
- ✓ Autologous manufacturing system

## Life Science

# Capitalizing on three key life science trends





3 ASIA

#### Single Use / End to End

Opened Wuxi site in 2018, and expanded Danvers facility

#### Viral Vectors

Expanded Carlsbad viral vector manufacturing site in 2016; further doubling of capacity planned for 2021

## Antibody Drug Conjugates (ADC)

Launched ADC Express<sup>™</sup> for the rapid production of ADCs #1 eCommerce site in Life Science<sup>1</sup>

- > 90% of Millipore products on eCommerce platform
- x2 net sales growth of eCommerce vs. non-eCommerce<sup>2</sup>

Manufacturing/Distribution Nantong, Wuxi Single use

Commercial expansion
Tier 2 cities

eCommerce partnership



# **COVID-19 demands align with our strengths but increase supply chain pressure**

unit operations	M	PALL	Thermo Fisher	SVISCISVS
Cell culture media				
Biopharm materials				
Chromatography				
Hardware				
Single use				
Sterile				
Virus				
Clarification				
Tangential flow filtration				
= A leading player ==	Significant pro	esence = I	No offering	

**COVID-19 Outlook** 

#### **Type**

#### **Implications**



**65** programs

**Bind and block** virus from entering cells

- Universal templates
- A leading position for 8 out of 9 unit ops



#### **Vaccine**

**199** programs
Protective **immune response** 

- Multiple templates
- Leveraging Single Use



### **Nucleic Acid**

**43** programs
Leveraging human factory

- Emerging manufacturing processes
- Lipids are critical

Sources: press releases, company reports, and internal assessments





**Next-generation bioprocessing on the cards** 











Launched 2018

Cassettes





**CHOZN** 

Cell Line



Advanced™

media





bioreactor



Depth Filters



Chrom. resin





Pro Solution



Ultra Plus

Resin





**Filters** 







Launched 2018

Filter

**BioReliance**®

**cGMP SOLUTIONS & SERVICES** 

**EMPROVE®** 

#### MAD process intensification 2017 - 2020+



continuous processing >2025

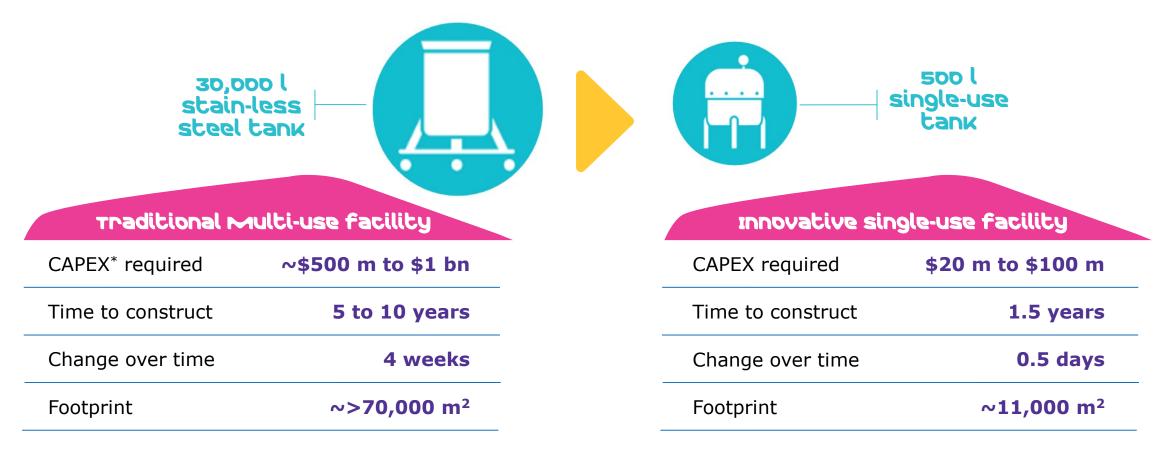


## Continuous bioprocessing will ...

- be an evolution in mAb bioprocessing
- take time to establish
- leverage the present
- lead to hybrid solutions

### **Process Solutions**

## Our single-use technologies drive flexibility in modern bioprocessing



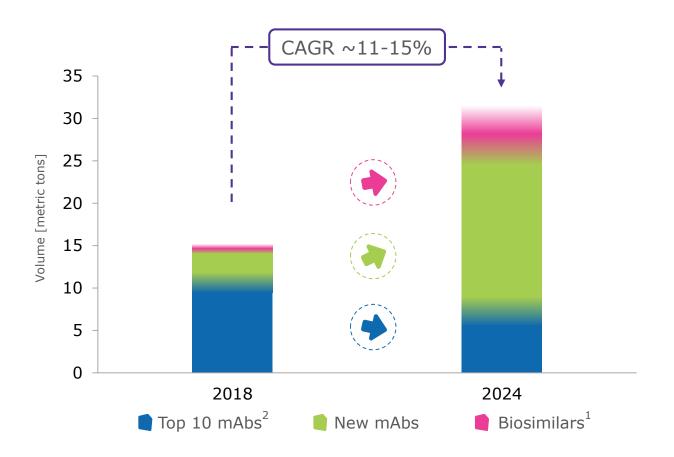


Strong demand for single-use technologies and Process Solutions' broad offering was and will remain a key source of growth for Life Science

## Life Science

# Democratization of mAbs market will drive diversification, change, variability

mAb volume projections 2018 to 2024



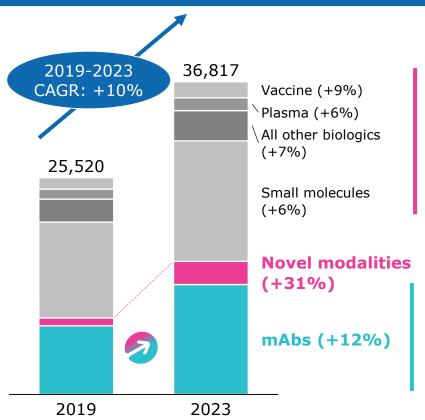
# market development

- Overall mAbs market will grow ~11-15% CAGR
- Top 10 originator mAbs represent
   60% of market volume today and
   will decline to ~20% in 2024
- · Biosimilars will gain share

### Life Science

## **Process Solutions: Growth opportunities beyond mAbs**

# Growth potential by segment Accessible market [€m], 2019-2023 CAGR¹



- Diversifying products and services
   in line with the new modalities coming
   to the market: fusion biologics, viral
   and gene therapies, cellular therapies
- Leading technologies: investments over 15 years, 26 granted CRISPR patents
- Services: investments in CDMO capacity for Viral Vector Manufacturing, and HP-API
- Leading technologies: Single Use and BioContinuum<sup>™</sup> for intensified and continuous bioprocessing
- Services: Contract manufacturing for biotechs at 3 global sites

#### **Growth market - China**



- Half of world-wide early stage mAb market by 2022
- A leading country in clinical trials
  - Increased investments into Nantong and Wuxi manufacturing sites
     China's first RioPeliance®
  - China's first BioReliance®
     End-to-End Biodevelopment
     Center opened in Shanghai in
     2017

# **Applied Solutions**

# Broad offering across the dynamic cell and gene therapy value chain













#### **Group offering**

Develop **cutting-edge tools** for scientists to

- Uncover foundational understanding, e.g. CRISPR patent grants in 7 geographies
- Modify genetic functions, e.g. CRISPR/Cas 9 tools, library and reagents, ZFN

Create cell lines and cell models for testing safety and efficacy

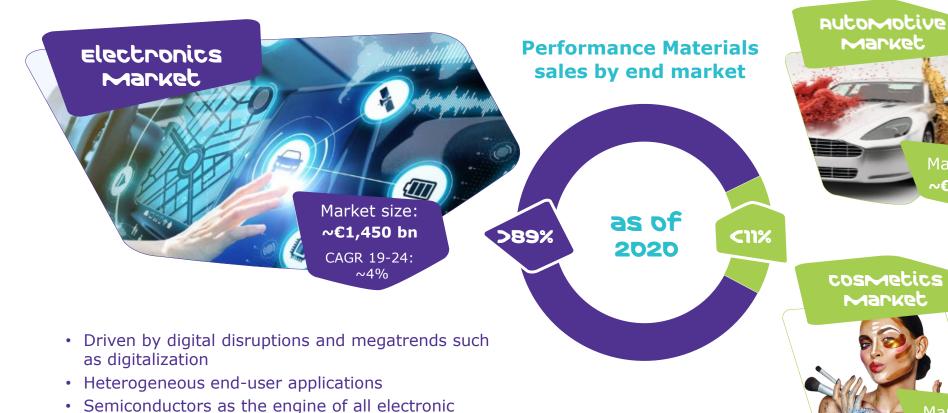
- Pharmacokinetics (ADME)
- Toxicology testing
- Potency model
- Examples: primary human hepatocytes, Intestine, liver and kidney assays

- Offer cGMP clinical and commercial manufacturing, e.g. manufacture viral vectors
- Improve the supply chain of cell therapy, e.g. cell and gene therapy products and services



Merck KGaA, Darmstadt, Germany, is a supplier of novel products and services with a strong IP portfolio to meet the rapidly growing demand for novel therapies

# **Performance Materials targets attractive markets –** especially in the electronics space



Market Driven by world GDP growth

> Increasing demand in emerging markets

Market size: ~€2,000 bn

cosmetics Market

- Driven by world GDP growth
- Rising living standards and higher disposable income

Market size: ~€400 bn



systems

#### **Performance Materials**

## Three high-tech pillars serving a diverse customer base

Business allocation within Performance Materials







% of sales<sup>1</sup>







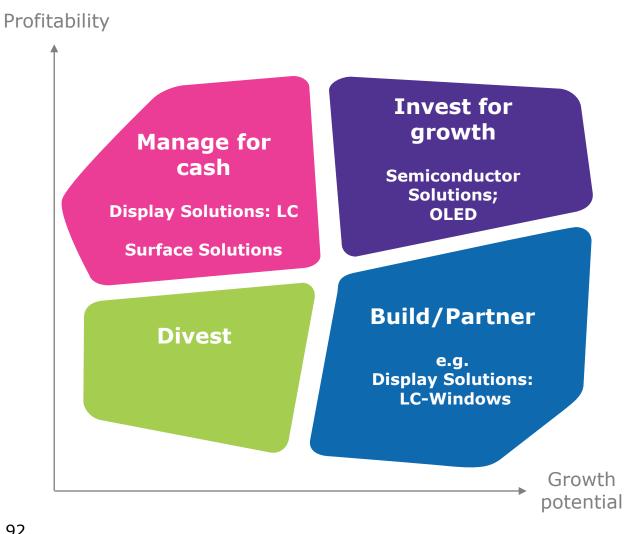
<sup>1</sup>based on H1 2020

#### **Products**

- Dielectrics, colloidal silica, lithography materials, yield enhancers, edge-bead removers
- Polyimide raw materials, printing materials and specialty gases
- Delivery equipment for gas, chemicals and CMP slurries, installation services and parts & support
- Liquid crystals (LC) and photoresists for TVs, smartphones and tablet computers
- Other display and non-display applications (e.g. LC Windows)
- Organic and inorganic light emitting diodes
- Effect pigments and functional materials for coatings, plastics, printing and cosmetics
- Functional materials for cosmetics & special applications
- Functional materials for electronics and energy solutions

#### Performance Materials

## Business portfolio management drives capital allocation and enables future value creation



#### **Invest for growth**

- Strong and sustainable market growth
- Leading positions and attractive growth opportunities

#### Manage for cash

- Mature and lucrative market segments
- Invest in extension, while managing for profit

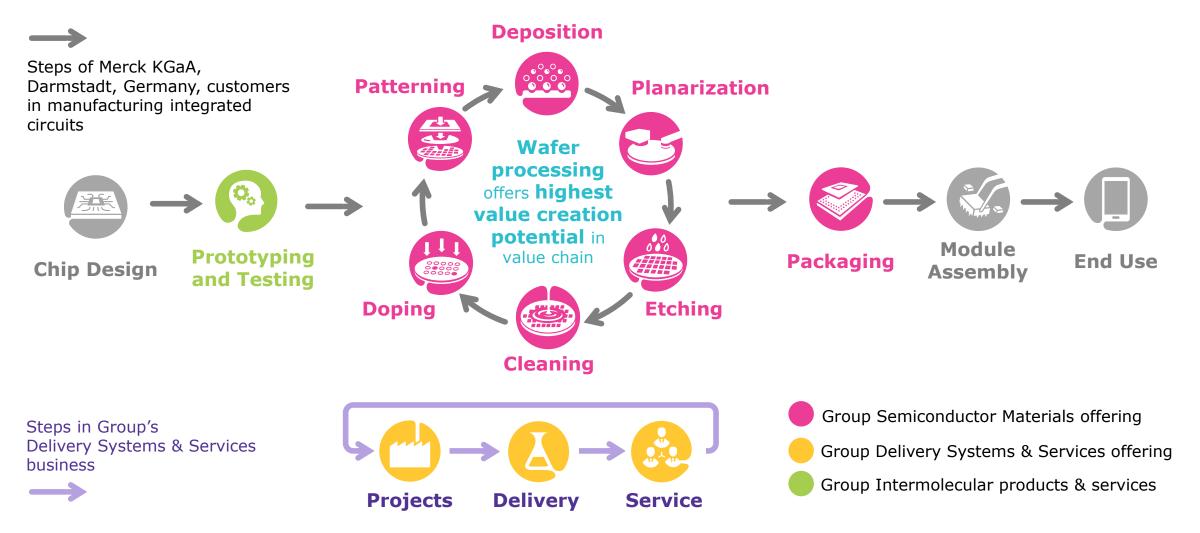
#### **Build or Partner**

- Early industry cycles with strong potential
- Strictly prioritize and diversify risk

#### **Divest**

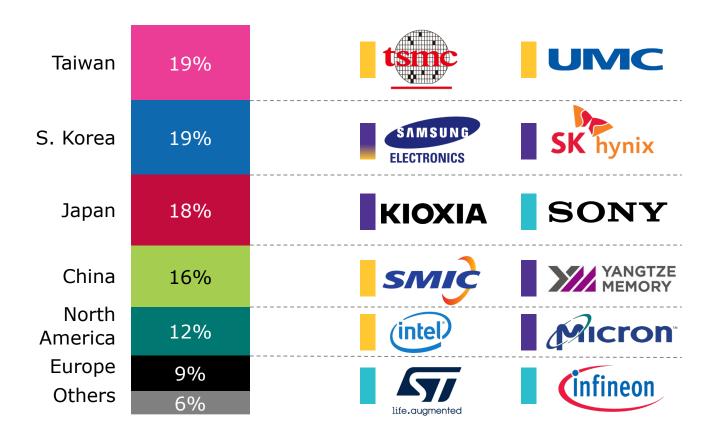
Regular review for better strategic owner

# Unique comprehensive products and services portfolio offers end-to-end solutions, well-placed in high growth segments



# Beyond a comprehensive portfolio Semiconductor Solutions also has an industry spanning customer base, supplying various end markets

2019 wafer capacity by region Selected customers per region 2



Semiconductor Solutions has

# customers

supplying all top 10 chip makers and virtually all of the top  $100^3$ 

Focus on logic chips

Focus on memory chips

Focus on other chips

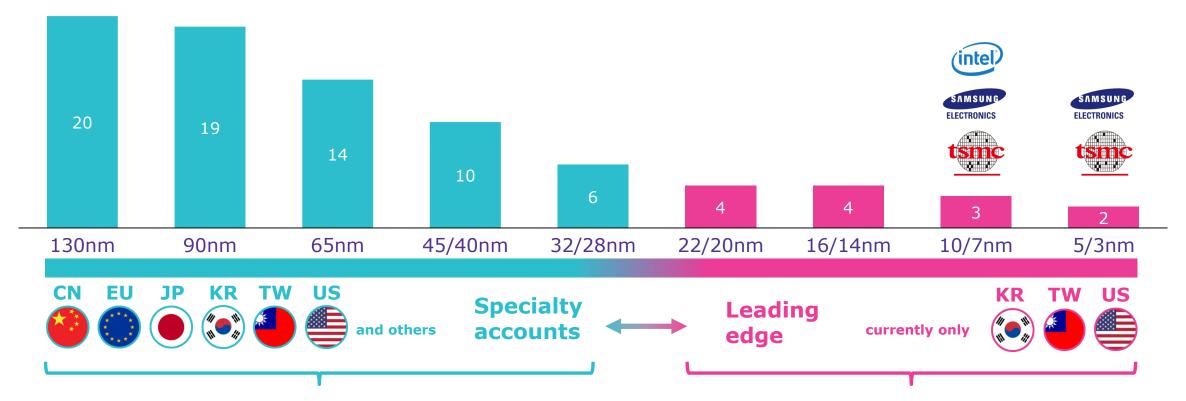
<sup>&</sup>lt;sup>1</sup>SEMI World Fab Forecast Q3 2020 - Dec 2019 capacity,

<sup>&</sup>lt;sup>2</sup>Representative, non-exclusive list, not based on any underlying criteria

<sup>&</sup>lt;sup>3</sup>Based on H1 2020 Sales

# Only three companies are currently running volume production <7nm These companies have the largest market shares across all nodes

Number of companies currently running volume production per logic chip node<sup>1</sup>



**Primary focus on operation efficiency** 

**Primary focus on innovation efficiency** 

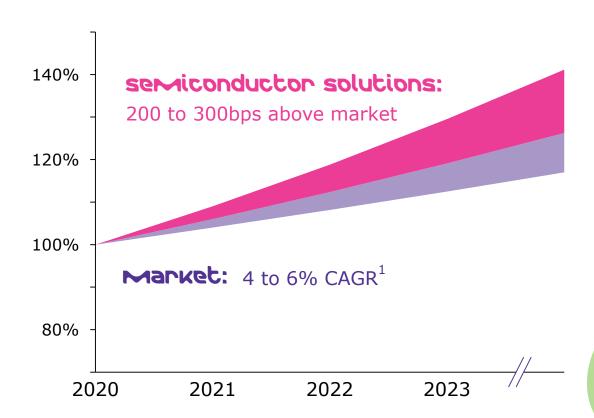
<sup>&</sup>lt;sup>1</sup>Source: Wikichip.org and own data; volume production as of Sep 2020; countries are listed in alphabetical order

## Semiconductor Materials

# Set to outgrow highly attractive semiconductor materials market

#### **Semiconductor Solutions sales guidance vs. market**

[Indexed 2020 = 100%]



<sup>&</sup>lt;sup>1</sup>Source: Jan 2020 IC Insights 2018-2024 CAGR for wafer starts in million units

# Market

- Technological trends inevitably drive exponential data growth
- More data requires more chips and higher complexity of chips
- Rising materials value added per wafer

## semiconductor solutions

- Comprehensive offering focusing on attractive materials categories
- Integration topline synergies
- Critical mass and deep customer centricity
- Better customer understanding: know-how exchange and collaboration across DS&S and Semiconductor Materials
- Cutting-edge innovation and R&D capabilities

# Technology trends inevitably drive exponential data growth... ...more chips needed to generate, transfer, process & store data

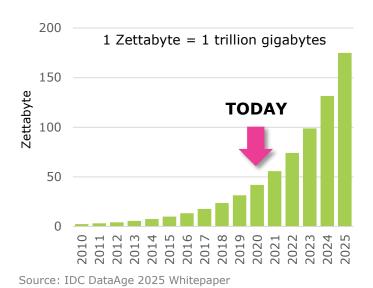
## Data created worldwide

is growing +30% annually

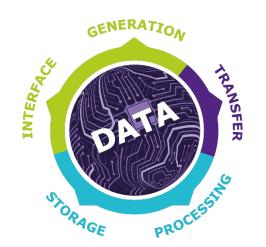
All segments of data application are affected by global data growth

**Technology trends** strongly impact relevance of data application segments

#### Size of global data sphere









Technology market growth - examples

#### 5G Technology<sup>1</sup>

>122% CAGR

#### **Artificial Intelligence<sup>2</sup>**

>33% CAGR

#### IoT Sensors<sup>3</sup>

>24% CAGR

#### **Data Center Services<sup>4</sup>**

>13% CAGR

## Autonomous Driving<sup>5</sup>

>18% CAGR

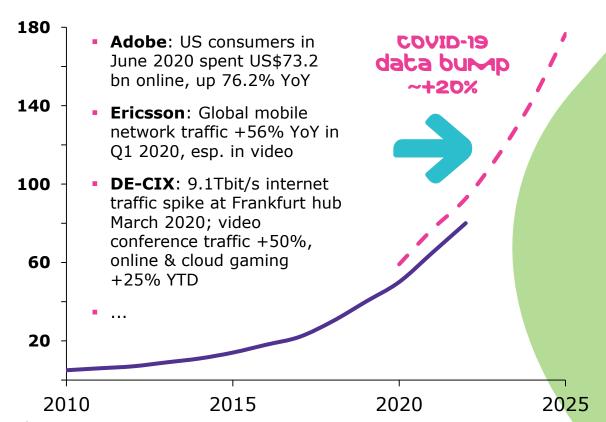
Semiconductor Solutions supports growth trend as part of "the company behind the companies, advancing digital living"

<sup>1) &</sup>lt;u>alliedmarketresearch.com</u>, Prismark 2020, CAGR 2021-2026; 2) <u>fortunebusinessinsights.com</u>, <u>post-gazette.com</u>, CAGR 2018-2026; 3) <u>mordorintelligence.com</u>, <u>computerweekly.com</u>, CAGR 2020-2025; 4) mordorintelligence.com, Prismark 2020; CAGR 2020-2025; 5G = 5<sup>th</sup>-generation cellular wireless; IoT = Internet of Things 5) mordorintelligence.com, autonomous car market value CAGR 2020-2025

#### Semiconductor Solutions

# **COVID-19** has vaulted the "digital transformation" by ~5 years¹

# **Expected COVID-19 impact on global datasphere** [zetabytes]



<sup>&</sup>lt;sup>1</sup>Source: McKinsey May 2020 "The COVID-19 recovery will be digital: A plan for the first 90 days"; <sup>2</sup>Source: Seagate, IDC April 2020, Merck KGaA, Darmstadt, Germany

# covid-19 impact on data growth expected to be positive

- Work-from-home/stay-at-home economy
  - Significant increase in video conferences, online shopping, online gaming, streaming
- Change in consumers' and enterprises' digital behavior expected to be long-lasting
- Need for more, faster & more reliable data processing, storage and bandwidth
  - Acceleration of semiconductor demand

semiconductor solutions stands ready to support increased demand

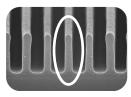
# **Expanding the limits of how small you can go**

#### **Pattern collapse**



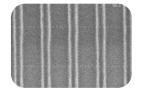


### **AZ®** rinse materials



As lines get narrower and closer together in advanced chip generation, lines tend to "stick" due to surface tension.

#### **Lithography limitation**



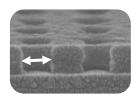


**Directed self-assembly (DSA)** 



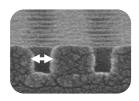
Block copolymer can generate small lines or contact holes by selfassembly. This allows miniaturization without expensive new equipment.

Wide features





#### **AZ®** shrink materials



Shrink materials "shrink" the gap between lines and, hence, allow the manufacture of narrower features otherwise not possible.

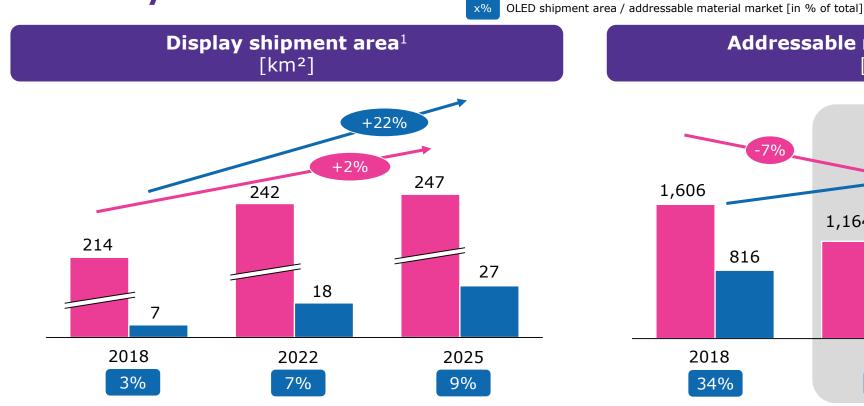


Merck KGaA, Darmstadt, Germany, delivers highly innovative solutions for complex customer problems

#### Performance Materials

**Display Solutions - OLED material market to exceed LC material** 

market by 2022

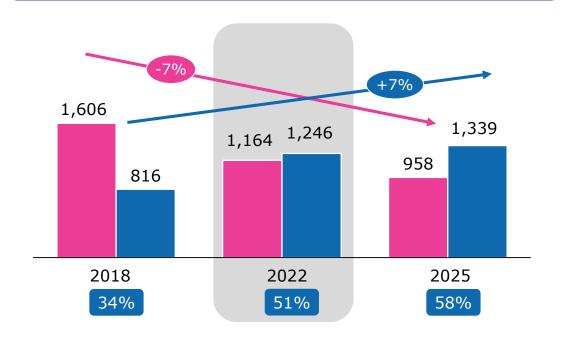




**OLED growing faster than LCD, but LCD to command** 90+% area share for foreseeable future

#### Addressable material market<sup>2</sup> [€m]

Liquid Crystals

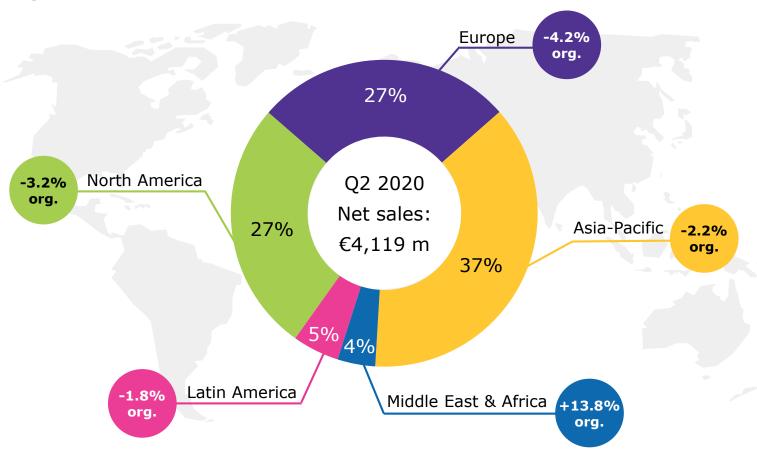


- Material value per OLED display higher than in LCD
- **OLED** material market to exceed LC material market by 2022, but market split between many more players

**OLED** 

# All regions impacted by COVID-19; signs of recovery in APAC dragged down by Display Solutions & Fertility

#### Regional breakdown of net sales [€m]



#### Regional organic development

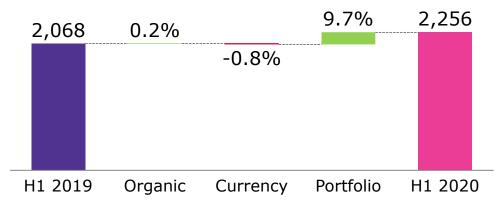
- Moderate decline in APAC as doubledigit growth in Life Science and Semiconductor Solutions offset a large part of COVID-19-driven decline in Display, Fertility and Surface Solutions
- In Europe Neurology & Immunology as well as Research Solutions were also declining due to COVID-19
- North America saw significant declines in Research Solutions and Fertility, also Applied Solutions slightly down
- Strong General Medicine & Endocrinology growth in MEA and LATAM (where it could not fully offset effects of COVID-19 in Fertility)

# A strong Q1 and double-digit Q2 growth in Process Solutions and Semiconductor Solutions allow for overall organic growth in H1

H1 YoY Net Sales	Organic	Currency	Portfolio	Total
Healthcare	3.2%	-1.4%	-0.5%	1.3%
Life Science	5.9%	0.2%	0.0%	6.2%
Performance Materials	-9.5%	2.1%	51.1%	43.7%
Group	2.4%	-0.2%	7.7%	10.0%

- Healthcare growing organically in H1 on the basis of a strong Q1 supported by resilient Oncology and General Medicine portfolio in Q2, overall June visibly stronger than May and April
- Accelerating Process Solutions growth is overcompensating flat Applied Solutions and declining Research Solutions where demand was impacted by COVID-19 related lockdowns
- Semiconductor Solutions organic growth accelerated from Q1 to Q2 – however, COVID-19 impact on Display and Surface Solutions results in overall organic decline



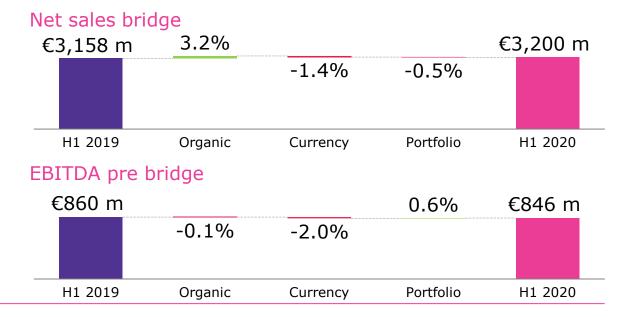


- EBITDA pre growing slower than sales organically, largely due to non-recurring Healthcare income (~ €185 m higher in H1 2019)
- Margin accretive Versum portfolio effect
- FX tailwinds from U.S. and Taiwan dollar did not fully offset currency headwinds from some emerging markets

# Healthcare: Organic Growth in H1 based on a strong Q1 and a portfolio that showed resilience in the COVID-19 pandemic

#### Healthcare P&L

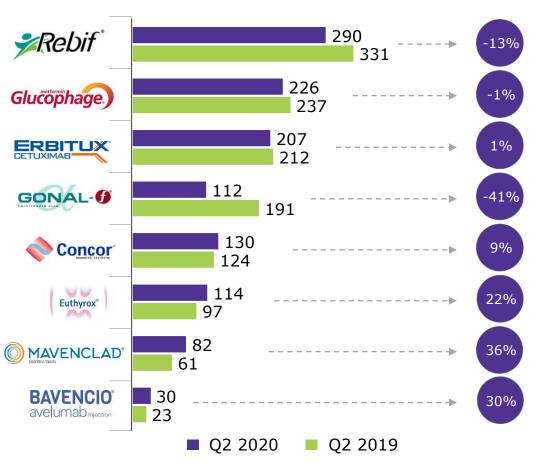
[€m]	H1 2019	H1 2020
Net sales	3,158	3,200
Marketing and selling	-1,150	-832
Administration	-172	-160
Research and development	-775	-783
EBIT	473	692
EBITDA	852	860
EBITDA pre	860	846
Margin (in % of net sales)	27.2%	26.4%



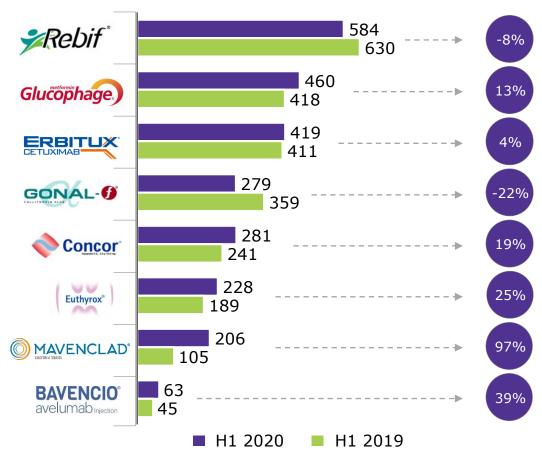
- Mavenclad® growth versus H1 2019, especially in U.S.; however declining sequentially due to COVID-19; recovery of ramp-up starting in June; Rebif® returning to underlying trajectory
- Fertility heavily impacted across all regions due to temporary shutdown
   R&D cost control offset by Bavencio® H&N study termination accrual of a majority of clinics
- Erbitux® growing organically slightly; Bavencio® growing strongly versus EBITDA pre declining faster than sales, driven largely by tough comps last year, but sequentially impacted by COVID-19
- M&S decrease due to rigorous cost management, further supported by suspension of face-to-face activities during COVID-19 pandemic versus elevated H1 2019 by now expired amortization of Rebif®
- (-€15 m)
  - from Peg-Pal and Bavencio® milestones in Q2 2019

# Healthcare organic growth by franchise/product

# Q2 2020 organic sales growth [%] by key product [€m]

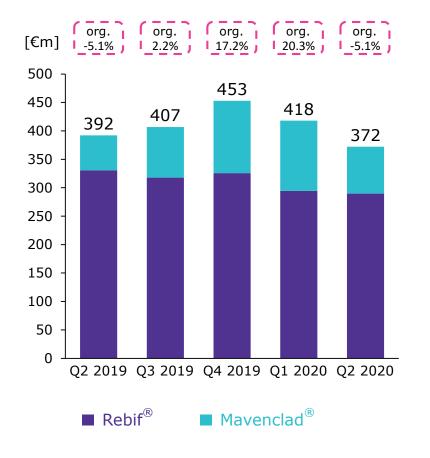


# H1 2020 organic sales growth [%] by key product [€m]

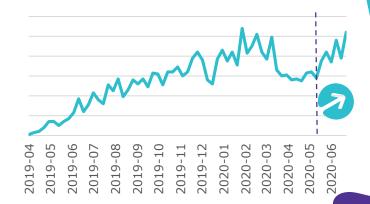


Neurology & Immunology: 7% organic growth in H1; paused Mavenclad<sup>®</sup> ramp-up showing signs of recovery in June

#### Sales development NDI, [€m]

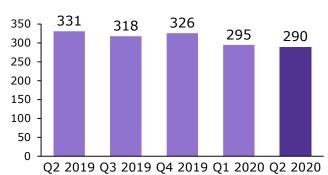


## Mavenclad® TRx, [IQVIA, NPA, weekly view]



- Mavenclad® recovery of ramp-up from peak COVID impact visible starting in June
- Mavenclad® continuing to gain market share in High Efficacy (5.3%) and Oral classes (7.8%)

Rebif<sup>®</sup> net sales, [€m]

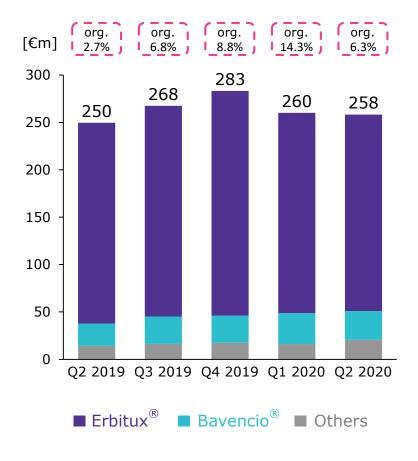


- Rebif<sup>®</sup> sales of €290m in Q2
   `20 are returning to the
   anticipated underlying
   trajectory
- Stronger sequential decline vs. an elevated Q1 2020 due to U.S. inventory effects, and Russia tender phasing

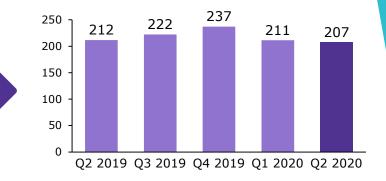
Merck KGaA Darmstadt, Germany

# Oncology: both Bavencio® and Erbitux® remain resilient despite impact from the COVID-19 pandemic

#### Sales development Oncology, [€m]

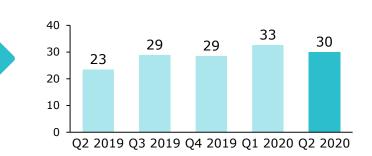


# Erbitux<sup>®</sup> net sales, [€m]



- Absolute sales of €207 m reflect a resilient growth of 1.1% in Q2
- Strong organic H1 growth of 23% in Latin America and moderate H1 growth of 3% in Europe despite COVID-19 was further supported by 3% H1 growth in MEA

Bavencio<sup>®</sup> net sales, [€m]

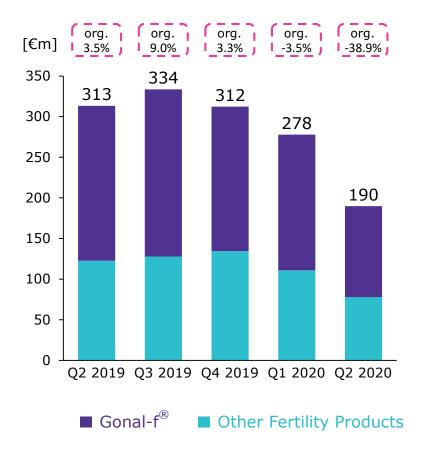


Bavencio® growing 30%; sequential ramp up momentum versus Q1 2020 impacted; largest opportunity will emerge in H1 2020 in UC 1L

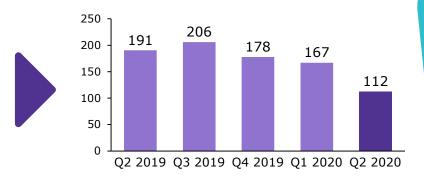


# Fertility: Strongest COVID-19 impact particularly in Europe and the U.S. given short treatment duration and temporary clinic shutdowns

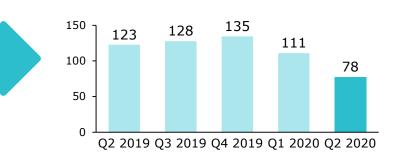
## Sales development Fertility, [€m]



# Gonal-f<sup>®</sup> net sales, [€m]



#### Other Fertility net sales, [€m]



- Entire Fertility portfolio shows significant organic decline of -39% primarily from COVID-19 related temporary shutdowns of clinics combined with an innately short duration of treatment
- COVID-19 triggering 51% sales decline in Europe as clinics shut down due to the discretionary nature of the treatment
- Milder decline of 31% in APAC shows correlation with pandemic course, as China & others ahead of developments in Europe and U.S.

# General Medicine & Endocrinology: Growing organically overall despite COVID-19 impact in Q2 and a negative effect from Q1 pull-in

Organic

+2.0% org.

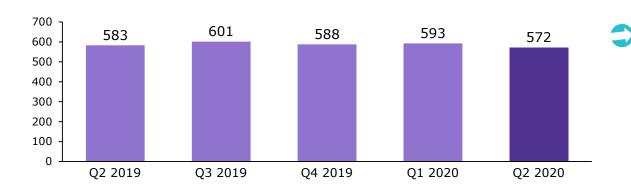
#### Sales evolution



### Q2 2020 organic drivers

 Endocrinology was impacted in the U.S. and to a minor extent in Europe amid COVID-19 pandemic, while stable to growing in other regions





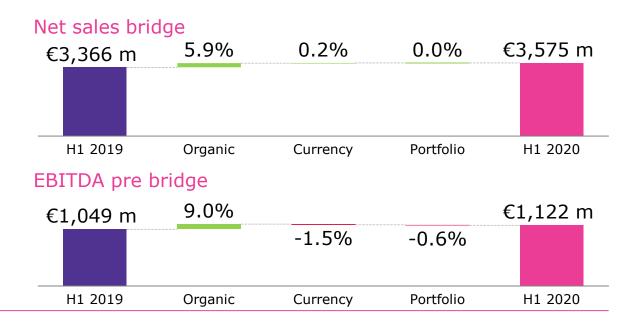
 While Glucophage® had a minor negative impact from the Q1 pull-in, Concor® saw ongoing strong demand globally, despite a VBP effect in China; leading to 2% growth overall for CardioMetabolic Care & General

Medicine and Others

# Life Science: Strong resilience throughout H1; Process growing double-digit, Applied & Research impacted by COVID-19 but recovery visible in June

#### Life Science P&L

[€m]	H1 2019	H1 2020
Net sales	3,366	3,575
Marketing and selling	-959	-986
Administration	-156	-189
Research and development	-131	-151
EBIT	635	731
EBITDA	1,025	1,126
EBITDA pre	1,049	1,122
Margin (in % of net sales)	31.2%	31.4%

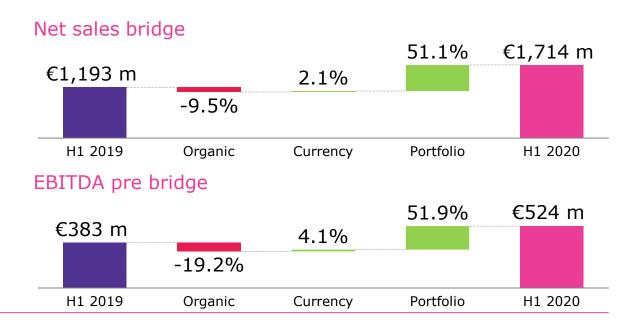


- Double-digit organic growth of Process Solutions mainly driven by downstream and single use, with COVID-19 demand contributing
- Applied Solutions about stable due to COVID-19 related effects across the full portfolio, albeit clear signs of recovery in June
- Research Solutions impacted significantly mainly due to temporary slowdown in academia from COVID-19 related lab closures, also showing clear signs of recovery in June
- Higher M&S largely from increased freight costs, partially offset by overall cost-consciousness and lower travel expenses
- Admin increase driven largely by EBITDA pre adjustments (€21 m) and COVID-19 related cost for additional safety precautions
  - Increased R&D driven by investments in strategic projects
  - EBITDA pre growing faster than sales, reflecting operational leverage from strong top-line growth

# Performance Materials: Versum portfolio effect and accelerating organic Semi growth compensate declining Display and Surface amid COVID-19

#### Performance Materials P&L

[€m]	H1 2019	H1 2020
Net sales	1,193	1,714
Marketing and selling	-132	-270
Administration	-49	-83
Research and development	-146	-140
EBIT	195	86
EBITDA	318	470
EBITDA pre	383	524
Margin (in % of net sales)	32.1%	30.6%



- Sales growth of 44% reflects portfolio effect from Versum and positive FX, overcompensating organic decline in Display and Surface
- Semiconductor Solutions further accelerating strong organic growth, cyclical recovery started and outperformance continues
- Display Solutions: COVID-19 weighs on LC's negative underlying trajectory against still elevated comps in H1 2019; OLED also impacted
- Surface Solutions declining significantly driven by a heavy COVID-19 impact on automotive and cosmetic end markets

- M&S reflects consolidation of Versum acquisition and diligent underlying cost management as part of the Bright Future transformation
- R&D declining from an elevated H1 2019 base including Bright Future provisions (EBITDA pre adjustments); H1 2020 includes Versum consolidation and shows underlying Bright Future cost management
- Increase in EBITDA pre largely reflects consolidation effect from Versum, while EBIT lower due to sales impact in Display and Surface from COVID-19, higher D&A from Versum PPA and impairments

# **Reported figures**

#### Reported results

[€m]	H1 2019	H1 2020	Δ
EBIT	997	1,207	21.0%
Financial result	-174	-201	15.6%
Profit before tax	824	1,006	22.2%
Income tax	-203	-259	27.5%
Effective tax rate (%)	24.7%	25.8%	1.1pp
Net income	659	746	13.1%
EPS (€)	1.52	1.72	13.2%

- EBIT increase driven by Versum portfolio effect and Life Science growth, partially offset by lower nonrecurring income, higher depreciation & amortization from Versum PPA and impairments in Performance Materials
- Financial result impacted by LTIP and higher interest expenses related to Versum financing
- Effective tax rate within guidance range of ~24-26%
- Higher net income and EPS reflect higher EBIT

#### **Cash flow statement**

#### H1 2020 – cash flow statement

H1 2019	H1 2020	Δ
660	747	87
927	991	64
54	-38	-92
-115	-189	-74
-55	-24	31
-236	-468	-232
1,235	1,019	-216
-1,199	-504	695
-367	-532	-164
1,241	239	-1,001
	660 927 54 -115 -55 -236 1,235 -1,199 -367	66074792799154-38-115-189-55-24-236-4681,2351,019-1,199-504-367-532

#### Cash flow drivers

- Profit after tax driven by higher EBIT
- Higher Depreciation & Amortization from Versum PPA and impairments in PM
- Changes in provisions reflect reduced litigation provisions and fluctuations in LTIP\*
- Changes in other assets and liabilities primarily driven by a GSK upfront payment in H1 2019 that was deferred
- Increased working capital driven by Versum consolidation, higher inventories to secure supply in the face of COVID-19 and growing receivables
- Investing and Financing cash flows returning to normal levels

<sup>\*</sup>Long Term Incentive Plan

Totals may not add up due to rounding

# Group

# Regular portfolio review remains key to success

#### strong track record

- Acquisitions and divestments are part of Group's history
- Licensing and partnerships remain on our agenda
- All prior transactions earned their cost of capital



# pefining portfolio guard rails

- Three strong pillars with no business marginalized
- Leading market position in attractive markets
- Focus on innovation and sustainability through science and technology



# clear financial MEA criteria

- Supporting profitable growth strategy
- IRR > WACC
- EPS pre accretive
- Maintain investment grade rating



- Current set-up is strong and organic investment opportunities are attractive
- Expect to regain financial flexibility by 2022 to pursue external growth opportunities
- Targeted and more regular bolt-on approach more likely than large transformative deals

# **Adjustments in H1 2020**

# Adjustments in EBIT

[€m]	H1 2019		H1 2	020
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	8	0	-12	2
Life Science	24	0	-4	0
Performance Materials	65	0	165	112
Corporate & Other	44	0	25	0
Total	141	0	174	114

#### **ESG**

# We are working on ambitious goals



#### **Climate**

We endeavor to reduce direct and indirect emissions to mitigate our impact on the climate.











#### Waste

We consider it fundamental to both prevent and recycle as much of our waste as possible.







#### Water

For us, sustainable water management means not negatively impacting the aquatic ecosystems











#### **Product safety**

Product safety is one of our top priorities: From safe handling of hazardous substances to ensuring patient safety.









#### **Employees**

We aim to be an attractive employer, encouraging creativity and development under ideal working conditions.

**Access to Medicine** 

We support a variety of

initiatives that improve

for people in low- and

middle-income countries.

access to health particularly







# Governance

#### Growth & Profit sharing





Our growth results from innovations and acquisitions strengthening our position in important markets, supported by strong cash-flow, long-term margins of >30% and a conservative but reliable dividend.

#### Risk management





We are focusing on a diversified business model: Our 3 sectors have pioneering knowledge to develop products to improve life for patients, further the success of our customers and meet global challenges.

#### Steering









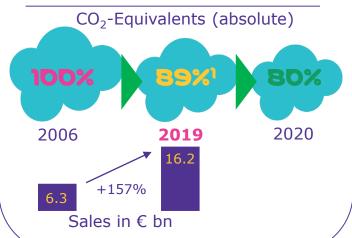
Our core values along with the external regulations lead to business-guiding charters and principles for our responsible governance, documented in our Corporate Responsibility strategy and report.

## **ESG**

# **Emissions, Water, Waste reduced despite growing business**

#### **Emission-Target:**

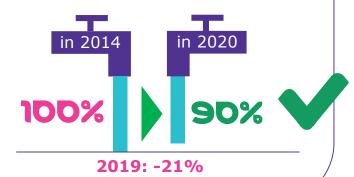
- Growth-independent reduction of Group's greenhouse gas emissions of 20% until 2020 vs. 2006
- Despite sales growth of 137% 2006 vs. 2018 we achieved a 11% reduction of CO<sub>2</sub> equiv.
- We still confirm our goal for 2020 expecting positive impact from latest initiatives, e.g. process optimizations and change to renewable energy



#### **Water-Target:**

- At 24 sites with relevant water use in areas of high water stress we aim to cut water consumption by 10% until 2020 vs. 2014
- 2018, we lowered our water consumption by 11% resulting from sustainable water management and re-usage
- All pharmaceutical manufacturing facilities have wastewater treatment plants

Water consumption in water stress areas



## **Waste-Target:**

- We reduce waste and recycle as much as possible - we aim to reduce the environmental impact of our waste by 5% until 2025 compared to 2016
- The Company Waste Score allows us to compare the amount of waste our sites are producing
- We ensure that raw materials are recycled and that unrecyclable waste is discarded

**Group Waste Score** 





## **ESG**

# External stakeholders valuate our engagement



MSCI rated Merck KGaA, Darmstadt, Germany, AAA (Leader) according to its exposure to ESG risks and how well they manage those risks relative to peers.



Sustainalytics put us among the leading pharmaceutical companies



Since 2008, Merck KGaA, Darmstadt, Germany, is part of FTSE4Good Index, measuring the performance of companies with strong ESG practices (Top 15).



In 2019, **ISS Oekom** rated Merck KGaA, Darmstadt, Germany "B-" which means Merck KGaA, Darmstadt, Germany has once more achieved **prime status.** 



In 2019, the Merck KGaA, Darmstadt, Germany share was again **included in STOXX Global ESG Leaders Index**, a sustainability index based on key environmental, social and governance criteria.

Merck KGaA, Darmstadt, Germany has been reconfirmed as a constituent of the Ethibel Sustainability Index (ESI) Excellence Europe since May 2020, based on VigeoEiris.



Merck KGaA, Darmstadt, Germany received **Platinum** status in 2020, among the **top 1% of companies**.

EcoVadis annually examines ~60,000 suppliers from 155 countries.



Participation in CDP (formerly Carbon Disclosure Project) since 2008.

**CDP Climate:** In 2019, we scored "C" (2018: C). **CDP Water:** In 2019 we received a "B" (2018: B-).



In the **2018 Access to Medicine Index** Merck
KGaA, Darmstadt, Germany
maintained **4th place.**The ranking appreciates
Groups's initiatives e.g. the
commitment to open
innovation.

# **Financial calendar**

Date	Event
September 25, 2020	Healthcare R&D Update Call
November 12, 2020	Q3 2020 Earnings release
March 4, 2021	Q4 2020 Earnings release



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