

FY/Q4 2016 Financial Summary for Investors and Analysts

A successful year:

- Healthcare – solid commercial performance and first pipeline filings
- Life Science – above-market growth amid seamless integration
- Performance Materials – four pillar strategy supports profitability and innovation
- Organic growth across all regions and profitability expansion
- Delivery of targets: Net sales €15 bn, EBITDA pre €4.49 bn, EPS pre €6.21
- Strong operating cash flow of €2.5 bn allows for significant deleveraging

Overview Financials

Q4 2016 Overview

- EBITDA pre increase driven by Sigma, end of Rebif commission expenses and higher royalties, offsetting higher R&D
- EPS pre up due to EBITDA pre increase and improved financial result
- Strong operating cash flow from EBITDA pre progression and improved working capital management in Q4
- Net financial debt reduction reflects strong focus on deleveraging
- FY 2016 working capital increase due to higher business activity and FX

Q4 2016 Cash Flow Statement

- D&A increases due to Sigma, LY contains evofosfamide impairment
- Changes in provisions last year mainly reflect provision build-up for evofosfamide
- Investing cash flow reflects capex and Biocontrol; LY contains Sigma purchase
- Capex higher due to HQ, Sigma and investments in China
- Financing cash flow reflects repayment of debt; commercial paper issuance LY

YE 2016 Balance Sheet

- Ongoing amortization of Sigma-related intangible assets
- Significant reduction of financial debt
- Decline in interest rates drives increase in pension provisions
- Net equity increase reflects net income and FX

Q4 2016 Business Overview

Healthcare

- **Solid organic growth and pick-up of pipeline investments**
- Net sales deviation YoY: organic +4.2%, FX -1.0%, portfolio -1.5%
- Rebif stable, volume erosion in EU due to competition is outweighed by U.S. pricing and higher U.S. year-end demand due to pharmacy stocking
- Moderate organic decline of Erbitux driven by mandatory EU price cuts and competition offsetting volume growth in China and Brazil
- Fertility portfolio remains strong, especially in U.S. and China, despite softer Gonal-f sales
- Marketing & selling reflect end of commission expenses for Rebif (U.S.) partially offset by year-end investments in launch preparations
- R&D spend pick-up reflects progress of key pipeline projects (avelumab, TGF-beta, BTK-i); low base last year
- Lower EBITDA pre and margin due to higher R&D costs

Life Science

- **Record sales quarter amid tough comparables**
- Net sales deviation YoY: organic +3.7%, FX +0.3%, portfolio +28.8%
- Process Solutions growth driven by single-use products and services business, however some customer orders delayed
- Good demand from EU and U.S. pharma for biomonitoring yields solid organic growth of Applied Solutions
- Research Solutions shows slight organic growth – growth in Europe and Asia is almost offset by lower demand in the U.S.
- Absolute costs higher due to Sigma and investments in Process Solutions field force
- Strong profitability reflects Sigma, business mix & synergy ramp-up

Performance Materials

- **Resilient profitability despite tougher LC environment**
- Net sales deviation YoY: organic -5.9%, FX +1.4%, portfolio +1.5%
- 2016 display industry destocking still muting Liquid Crystals amid first signs of a normalization of market shares
- Innovative UB-FFS technology with record quarter, SA-VA launch in H2 2017
- Strong growth of Integrated Circuit Materials driven by all major material classes, esp. strong dielectrics demand for complex structures
- Solid growth of Pigments & Functionals due to demand for automotive coating pigments and highly differentiated functional materials
- Resiliently strong profitability reflects leading market position in four high-margin businesses

2017 guidance

Group:

- Net sales: Slight to moderate organic growth
- EBITDA pre: About stable*
 - EPITDA growth drivers:
 - Organic net sales growth with all three businesses contributing
 - Sigma-Aldrich incremental cost and revenue synergies of ~+€80m YoY
 - Rebif U.S. price increase as of January 2017
 - Avonex royalty income for additional 6 months in 2017
 - Swap of royalty & license income stream with net benefit of mid to high double-digit €m
 - EPITDA growth burdens:
 - R&D costs increase 2017 in Healthcare: ongoing progress of pipeline and Vertex in-licensing
 - Healthcare margins negatively impacted by product mix
 - Fertility growth less fueled by favorable competitive situation in U.S.
 - Elimination of 2016 one-time effects (disposal gain Q2, reversal R&D termination provisions) ~-€90m YoY

Outlook by business sector:

Healthcare

- Net sales:
 - Slight organic growth
 - Ongoing organic Rebif decline
 - Other franchises growing; Glucophage repatriation in China supportive
- EBITDA pre:
 - YoY % decline in the high single digits
 - Higher R&D investments, mix effects and 2016 positive one-time effects mitigated by higher royalty income

Life Science

- Net sales:
 - Organic growth slightly above market; driven by Process Solutions
 - First contribution from top-line synergies
- EBITDA pre:
 - % YoY growth in the high single digits to low teens
 - Sigma synergies and organic growth contributing

*Defined as low positive or low negative % variation

Performance Materials

- Net sales:
 - Slight organic growth
 - Volume increases in all businesses
 - Continuation of slight LC market share normalization cannot be ruled out

- EBITDA pre:
 - Slight increase YoY

Additional financial guidance

- | | |
|--------------------------------|---------------------------------------------------|
| ▪ Corporate & Other EBITDA pre | ~ -€350 – -380 m |
| ▪ Interest result | ~ -€250 – -260 m |
| ▪ Effective tax rate | ~23% to 25% |
| ▪ Capex on PPE | ~€850 – 900 m |
| ▪ Hedging / USD assumption | 2017 hedge ratio ~50%
at EUR/USD ~1.11 to 1.12 |
| ▪ 2017 Ø EUR/USD assumption | ~1.06 – 1.10 |

Merck KGaA

Darmstadt, Germany

Group Q4

€m	Group			Healthcare			Life Science			Performance Materials			Corporate/Others		
	Q4 2015	Q4 2016	% YoY	Q4 2015	Q4 2016	% YoY	Q4 2015	Q4 2016	% YoY	Q4 2015	Q4 2016	% YoY	Q4 2015	Q4 2016	% YoY
Net sales	3.464	3.830	11%	1.737	1.766	2%	1.085	1.441	33%	642	623	-3%			
% organic			2%			4%			4%			-6%			
% FX			0%			-1%			0%			1%			
% portfolio			9%			-2%			29%			1%			
EBIT	298	405	36%	213	279	31%	34	70	>100%	193	210	9%	-142	-154	9%
Depreciation and amortization	505	548	8%	310	198	-36%	126	282	>100%	64	59	-7%	6	9	50%
EBITDA	803	953	19%	522	478	-9%	161	352	>100%	257	269	5%	-136	-146	7%
Exceptionals in EBITDA	130	121	-7%	1	20	>100%	111	67	-40%	6	9	51%	12	26	>100%
EBITDA pre	933	1.075	15%	524	497	-5%	271	419	55%	263	278	6%	-124	-119	-4%
Net financial debt*	12.654	11.513	-9%												

* as per 31 December

Totals may not add up due to rounding

Group FY

€m	Group			Healthcare			Life Science			Performance Materials			Corporate/Others		
	FY 2015	FY 2016	% YoY	FY 2015	FY 2016	% YoY	FY 2015	FY 2016	% YoY	FY 2015	FY 2016	% YoY	FY 2015	FY 2016	% YoY
Sales	12.845	15.024	17%	6.934	6.855	-1%	3.355	5.658	69%	2.556	2.511	-2%			
% organic			3%			5%			6%			-5%			
% FX			-3%			-5%			-1%			0%			
% portfolio			16%			-1%			63%			3%			
EBIT	1.843	2.481	35%	1.097	1.593	45%	301	556	85%	878	823	-6%	-432	-492	14%
Depreciation and amortization	1.511	1.934	28%	874	831	-5%	373	822	>100%	242	254	5%	21	27	27%
EBITDA	3.354	4.415	32%	1.970	2.425	23%	674	1.378	>100%	1.120	1.077	-4%	-411	-465	13%
Exceptionals in EBITDA	276	75	-73%	31	-297	n.m.	182	274	51%	12	29	>100%	51	69	35%
EBITDA pre	3.630	4.490	24%	2.002	2.128	6%	856	1.652	93%	1.132	1.106	-2%	-360	-396	10%
Net financial debt*	12.654	11.513	-9%												

* as per 31 December

Totals may not add up due to rounding

Group

P&L Group	Q4 2015	Q4 2016	% YoY
Net sales	3.464	3.830	11%
Cost of sales	-1.149	-1.328	16%
thereof: intangibles amortization	-43	-44	3%
Gross profit	2.314	2.502	8%
Marketing and selling expenses	-1.106	-1.224	11%
thereof: intangibles amortization	-222	-265	20%
Administration	-217	-234	8%
Other operating income/expenses	-298	-92	-69%
Research and development	-395	-547	38%
EBIT	298	405	36%
Depreciation and amortization	505	548	8%
EBITDA	803	953	19%
Exceptionals in EBITDA	130	121	-7%
EBITDA pre	933	1.075	15%
Financial result	-134	-70	-48%
Profit before tax	164	335	>100%
Income tax	-42	-70	66%
Income tax rate	26%	21%	
Profit after tax discontinued operations	6	0	n.m.
Profit after tax	127	265	>100%
Non-controlling interests	-2	4	n.m.
Net income	126	269	>100%
Number of theoretical shares in million	434,8	434,8	
EPS in €	0,29	0,62	>100%
EPS pre in €	1,13	1,43	26%

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Healthcare

P&L Healthcare	Q4 2015	Q4 2016	% YoY
Net sales	1.737	1.766	2%
Cost of sales	-334	-367	10%
thereof: intangibles amortization	0	0	n.m.
Gross profit	1.402	1.399	0%
Marketing and selling expenses	-728	-709	-3%
thereof: intangibles amortization	-143	-140	-2%
Administration	-64	-68	5%
Other operating income/expenses	-115	75	n.m.
Research and development	-283	-418	48%
EBIT	213	279	31%
Depreciation and amortization	310	198	-36%
EBITDA	522	478	-9%
Exceptionals in EBITDA	1	20	>100%
EBITDA pre	524	497	-5%

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Life Science

P&L Life Science	Q4 2015	Q4 2016	% YoY
Net sales	1.085	1.441	33%
Cost of sales	-518	-679	31%
thereof: intangibles amortization	-13	-15	9%
Gross profit	567	762	34%
Marketing and selling expenses	-324	-458	42%
thereof: intangibles amortization	-73	-126	72%
Administration	-63	-71	14%
Other operating income/expenses	-88	-92	5%
Research and development	-59	-70	19%
EBIT	34	70	>100%
Depreciation and amortization	126	282	>100%
EBITDA	161	352	>100%
Exceptionals in EBITDA	111	67	-40%
EBITDA pre	271	419	55%

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Performance Materials

P&L Performance Materials	Q4 2015	Q4 2016	% YoY
Net sales	642	623	-3%
Cost of sales	-297	-281	-5%
thereof: intangibles amortization	-29	-29	0%
Gross profit	345	342	-1%
Marketing and selling expenses	-54	-57	6%
thereof: intangibles amortization	-6	0	n.m.
Administration	-15	-16	3%
Other operating income/expenses	-30	-2	-92%
Research and development	-52	-56	8%
EBIT	193	210	9%
Depreciation and amortization	64	59	-7%
EBITDA	257	269	5%
Exceptionals in EBITDA	6	9	51%
EBITDA pre	263	278	6%

Totals may not add up due to rounding