

# Deal Capsule

## Transactions in Chemicals & Pharmaceuticals

October 2016



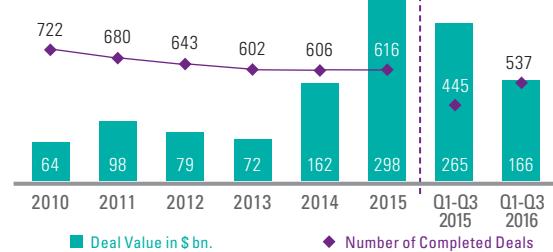
“ Healthy deal volumes to date, with German companies leading the way in agro and specialty chemicals. ”

VIR LAKSHMAN | HEAD OF CHEMICALS & PHARMACEUTICALS, KPMG IN GERMANY

### HIGHLIGHTS

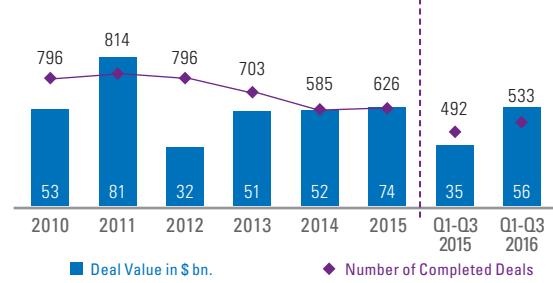
- M&A continues to be brisk with the number of completed deals in Q1-Q3 2016 remaining at a high level in both sectors. While the pharmaceutical total deal value decreased almost 40% in Q1-Q3 2016 versus Q1-Q3 2015, chemicals saw a 60% increase.
- Pharmaceutical deal activity was strongly impacted by Teva closing the \$40.5 billion acquisition of Allergan's generics business.
- Monsanto agreed to Bayer's \$66 billion acquisition offer. Consolidation in the agrochemicals and fertilizer market continues.
- US remains the most active country in both sectors, followed by China. Strong German M&A activity continues in chemicals.
- KPMG's Deal Thermometer indicates that the environment for M&A activity will remain moderately strong in both sectors.

FIGURE 1: TRENDS IN PHARMACEUTICALS M&A



Sources: Thomson One, KPMG Analysis

FIGURE 2: TRENDS IN CHEMICALS M&A



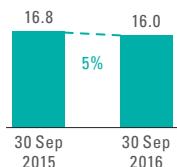
Sources: Thomson One, KPMG Analysis

### DEAL THERMOMETER Q1-Q3 2016

KPMG's Deal Thermometer signals the environment for M&A deals in chemicals and pharmaceuticals. It combines the appetite for deals (changes in forward P/E ratios) with the capacity to fund deals (changes in Net Debt/ EBITDA multiples). 'Hot' signifies an environment conducive to deal-making.

#### PHARMACEUTICALS

DEAL APPETITE  
(Forward P/E ratio)



DEAL CAPACITY  
(Net debt/EBITDA)



HOT

MODERATE

COOL

Sources: Capital IQ, KPMG Analysis

#### CHEMICALS

DEAL APPETITE  
(Forward P/E ratio)



DEAL CAPACITY  
(Net debt/EBITDA)



Sources: Capital IQ, KPMG Analysis

# Pharmaceuticals

Pharmaceutical deal values are starting to pick up – this quarter added two deal completions above the \$10 billion mark. The value of the top 10 completed deals almost doubled from \$67.2 billion in HY1 2016 to \$124.4 billion in Q1-Q3 2016. M&A activity was spread across several therapy areas. US remains the most active country.

## DEAL FOCUS AREAS

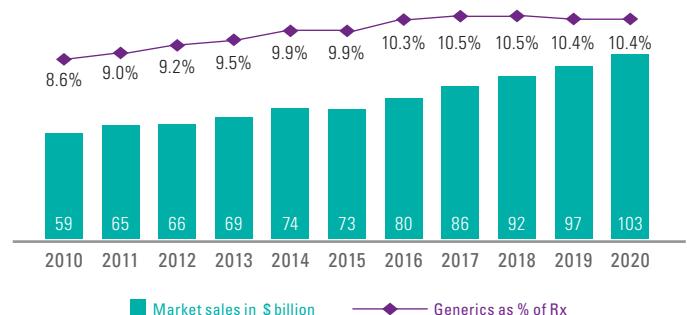
Three pharma players impacted major deal making this quarter: Teva Pharmaceutical Industries Ltd. leads the way in the ongoing consolidation of the generics market, Pfizer Inc. and Allergan PLC enhance their portfolios following the demise of their merger.

### Generics

In Q3 2016, Teva Pharmaceuticals Industries Ltd. completed its \$40.5 billion acquisition of Allergan PLC's generics business. The deal places Teva at the forefront of the global generics market. Annual cost synergies and tax savings of \$1.4 billion are expected by 2019.

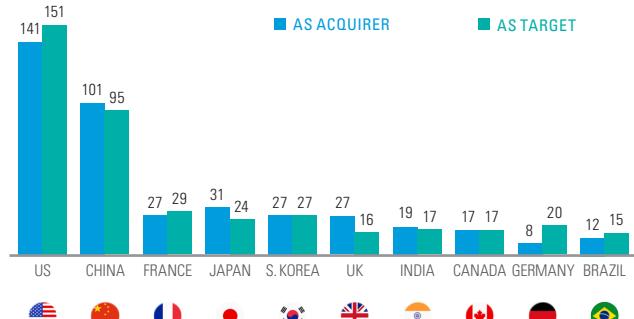
As a precondition, the US Federal Trade Commission requires Teva to divest over 75 generic drugs – the largest drug divestiture ordered in a pharmaceutical merger case. With 42 products, Mayne Pharma Group Ltd. acquired the largest portion of the divested products, becoming one of the top 25 retailers and second-largest oral contraceptive provider in the US generic market.

FIGURE 3: WORLDWIDE GENERIC DRUG SALES 2010-2020



Source: Evaluate Ltd., KPMG Analysis

FIGURE 4: TOP COUNTRIES IN PHARMACEUTICALS M&A Q1-Q3 2016



Sources: Thomson One, KPMG Analysis

### Post Pfaffergan

Pfizer moved into a top position in oncology, acquiring the cancer biotech Medivation Inc. for \$14 billion. In addition to several promising late-stage oncology assets in its pipe-line, Medivation's blockbuster cancer drug Xtandi has already been approved by the FDA. Annual sales of \$1.3 billion are expected by 2020.

Pfizer also proposed the \$1.6 billion acquisition of AstraZeneca PLC's complementary, primarily non-US late-stage small molecule anti-infectives business. This includes new EU-approved Zavicefta, which treats serious Gram-negative bacterial infections. New antibiotics are urgently needed. Increasing antimicrobial resistance causes approximately 250,000 annual deaths in Europe with two-thirds of these estimated to be related to the Gram-negative bacteria.

Pfizer also stated it will not carry out its plan to split its two units, Pfizer Innovative Health and Pfizer Essential Health, into separate publicly traded entities at this time.

Allergan announced the acquisition of Tobira Therapeutics Inc. for \$1.7 billion. The deal adds several highly differentiated compounds, for example Cenicriviroc and Evogliptin, to treat non-alcoholic steatohepatitis (NASH) and other liver diseases to Allergan's R&D pipeline. To date, there are no approved therapies available for NASH patients.

In addition, Allergan proposed to acquire Vitae Pharmaceuticals Inc. for \$0.6 billion, adding first-in-class compounds in atopic dermatitis, psoriasis and autoimmune diseases to its dermatology pipeline. Vitae utilizes its industry-leading Contour structure-based drug design platform for drug discovery and development, for example through computationally simulating how molecules bind to proteins.

## COLLABORATIONS

Q3 2016 also saw a few collaborations, which are not included in the deal lists but worthy of mention. Celgene Corp. and Jounce Therapeutics Inc. announced an immuno-oncology partnership potentially worth \$2.6 billion, aiming to develop a new generation of cancer product candidates.

C.H. Boehringer Sohn AG & Co. KG (BI) announced that it would add new digital technology to its Respimat inhaler by working with Qualcomm Inc., a world leader in next-generation wireless technologies. A new fully-integrated prototype inhaler is designed to support adherence to daily treatment regimes.

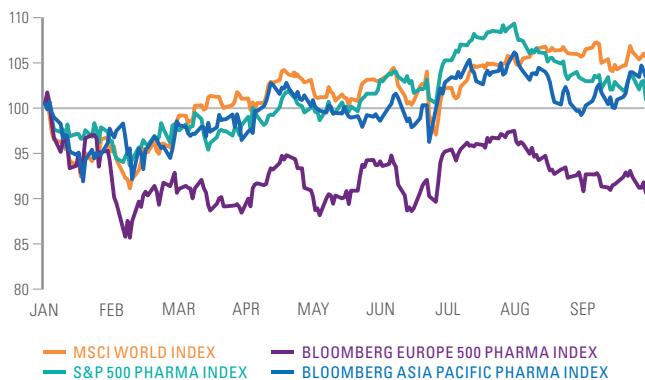
Following Sanofi and GSK, Takeda Pharmaceutical Company Ltd. announced to develop a Zika vaccine with up to \$312 million in funding from US Government. According to The World Health Organization, the Zika virus has so far reached more than 60 countries and territories.

## CAPITAL INDEX

The main pharma indices continue to struggle in 2016. After a peak in August, the S&P500 declined markedly as both US presidential candidates offered plans to cut back on pharma price hikes. Mylan N.V. (-28.9% YTD) was in the middle of the storm after price increases in EpiPen, an emergency treatment of anaphylaxis.

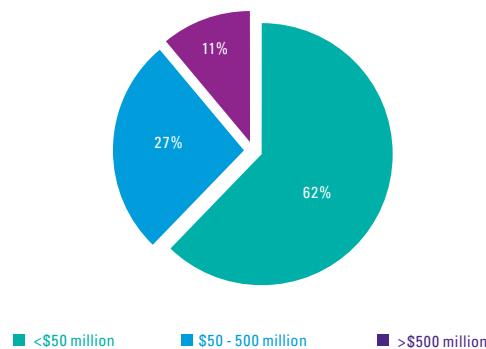
European stocks remain under pressure with Novo Nordisk A/S (-30.0%) and Sanofi (-13.5%) both giving ground. In contrast, Stada Arzneimittel AG (+30.9%) gained strongly throughout the year in response to merger rumours.

FIGURE 5: DEVELOPMENT OF PHARMACEUTICAL SHARE PRICES Q1-Q3 2016



Sources: Bloomberg, KPMG Analysis

FIGURE 6: PHARMACEUTICALS DEALS BY SIZE OF TRANSACTION Q1-Q3 2016



Includes all deals with a disclosed value.

Sources: Thomson One, KPMG Analysis

## M&A IN HOSPITAL MARKET

In Q3 2016, the European hospital market was impacted by major M&A activity. The hospital market is an important consumer of pharmaceutical products. For example, in 2015, hospitals consumed 13% of pharmaceutical products sold in Germany. Growth in public spending on hospital medicines varies across countries due to differences in policy landscapes and cost containment frameworks.

Fresenius SE & Co. KGaA announced the \$6.5 billion acquisition of Spain's largest private hospital group IDC Salud Holding S.L.U. (Quirónsalud), representing the largest transaction in company history. Fresenius adds 43 hospitals, 39 outpatient centers, around 300 Occupational Risk Prevention centers and, therefore, approximately €2.5 billion sales to its network. Incremental pre-tax cost synergies of €50 million p.a. and significant growth opportunities based on the target's above-market increase in patient admissions and public-private partnership models are expected.

# Pharmaceuticals

The deal value of the global top 10 completed deals in Q1-Q3 2016 was

**\$124.4 billion**

TABLE 1: GLOBAL TOP DEALS COMPLETED IN Q1-Q3 2016

BIDDER	TARGET	THERAPY AREA	VALUE <sup>1</sup>	CONTINGENT PAYMENTS <sup>1</sup>	TOTAL VALUE <sup>1</sup>
 Teva Pharmaceutical Industries Ltd.	 Allergan PLC – generic drug business	Generics (wide range of therapeutic areas)			40.5
 Shire PLC	 Baxalta Inc.	Hematology, immunology, oncology			32.0
 Pfizer Inc.	 Medivation Inc.	Oncology			14.0
 AbbVie Inc.	 Stemcentrx Inc.	Oncology	5.8	4.0	9.8
 Mylan N.V.	 Meda AB	Prescription and OTC (respiratory, pain, dermatology)			7.2
 Shire PLC	 Dyax Corp.	Rare diseases	5.9	0.6	6.5
 Pfizer Inc.	 Anacor Pharmaceuticals Inc.	Dermatology			5.2
 AstraZeneca PLC	 Acerta Pharma BV (55%)	Oncology			4.0
 ViiV Healthcare Ltd.	 Bristol-Myers Squibb – HIV portfolio	HIV	0.4	2.5	2.9
 Teva Pharmaceutical Industries Ltd.	 Representaciones e Investigaciones Medicas S.A. de C.V. (Rimsa Laboratorios)	Generics (wide range of therapeutic areas), pain, respiratory, gastro-intestinal			2.3

The deal value of the global top 10 announced deals in Q1-Q3 2016 was

**\$15.8 billion**

TABLE 2: GLOBAL TOP DEALS ANNOUNCED IN Q1-Q3 2016, YET TO CLOSE

BIDDER	TARGET	THERAPY AREA	DEAL STATUS	TOTAL VALUE <sup>1</sup>
 Abbott Laboratories	 Alere Inc.	Infectious diseases, toxicology	Pending shareholder and antitrust approval	5.8
 Allergan PLC	 Tobira Therapeutics Inc.	Liver disease, immunology	Pending shareholder and antitrust approval	1.7
 Pfizer Inc.	 AstraZeneca PLC – antibiotic business	Antibiotics	Pending antitrust approval	1.6
 Chongqing Jianfeng Chemical Co., Ltd.	 Chongqing Pharmaceutical Group Co., Ltd.	Drug distribution (wide range of therapeutic areas)	Pending	1.3
 Shanghai Fosun Pharmaceutical (Group) Co., Ltd.	 Gland Pharma Ltd.	Generic injectables	Pending	1.3
 Merck & Co., Inc.	 Afferent Pharmaceuticals Inc.	Respiratory, cardiovascular, neurogenic disorders	Pending antitrust approval	1.3
 Chiesi Farmaceutici S.p.A.	 The Medicines Co. – cardiovascular assets	Cardiovascular	Pending	0.8
 Horizon Pharma PLC	 Raptor Pharmaceuticals Corp.	Rare diseases	Pending	0.8
 Allergan PLC	 Vitae Pharmaceuticals Inc.	Immunology, dermatology	Pending shareholder and antitrust approval	0.6
 Guangxi Invest Group Co., Ltd.	 Guangxi Wuzhou Zhongheng Group Co., Ltd. (21%)	Cardiovascular	Pending	0.6

<sup>1</sup> All numbers are in US\$ billion *Financial investors are italicized* *Figures in green are estimated values*

Sources: Thomson One, KPMG Analysis

# Chemicals

The deal value of the global top 10 **completed** deals in QY1-Q3 2016 was

**\$32.9 billion**

TABLE 3: GLOBAL TOP DEALS COMPLETED IN Q1-Q3 2016

BIDDER	TARGET	BUSINESS AREA	TOTAL VALUE <sup>1</sup>
 Air Liquide SA	 Airgas Inc.	Industrial gases	13.4
 Westlake Chemical Corp.	 Axiall Corp.	Chlorovinyls, vinyl building products and aromatics	3.8
 CHS Inc.	 CF Industries Nitrogen LLC (11%)	Nitrogenous fertilizers	2.8
 Dalian Rubber & Plastics Machinery Co., Ltd.	 Jiangsu Hengli Chemical Fibre Co., Ltd.	Chemical fibres	2.8
 Lotte Chemical Corp.	 Samsung SDI Co., Ltd. – Chemical business (90%)	Plastics (ABS, PC)	2.0
 CMOC Ltd. (part of China Molybdenum Co., Ltd.)	 Anglo American PLC – Niobium and phosphates business	Niobium and phosphates	1.7
 WL Ross Sponsor LLC	 Nexeo Solutions Holdings, LLC (TPG Capital, 65%)	Chemicals and plastics distribution	1.7
 Dmitry Lobyak	 PJSC Uralkali (part of Onexim Group Ltd., 20%)	Potash	1.7
 Jinguyuan Holding Co., Ltd.	 Golmud Possession Grid Potash Co., Ltd. (99,2%)	Potash	1.6
 China National Chemical Corp.	 ADAMA Agricultural Solutions Ltd. (Discount Investment Corp., 40%)	Agrochemicals	1.4

The deal value of the global top 10 **announced** deals in Q1-Q3 2016 was

**\$145.2 billion**

TABLE 4: GLOBAL TOP DEALS ANNOUNCED IN Q1-Q3 2016, YET TO CLOSE

BIDDER	TARGET	BUSINESS AREA	DEAL STATUS	TOTAL VALUE <sup>1</sup>
 Bayer AG	 Monsanto Co.	Agrochemicals	Pending shareholder and antitrust approval	66.0
 China National Chemical Corp.	 Syngenta AG	Agrochemicals	Pending shareholder and antitrust approval	43.0
 Potash Corp of Saskatchewan Inc.	 Agrium Inc.	Fertilizers, agrochemical retail	Pending shareholder and antitrust approval	13.1
 Sherwin-Williams Co.	 Valspar Corp.	Paintings and coatings	Pending shareholder and antitrust approval	11.3
 Evonik Industries AG	 Air Products & Chemicals Inc. – performance materials operations	Performance materials	Pending antitrust approval	3.8
 BASF SE	 Chemetall GmbH (part of Albemarle Corp.)	Surface treatment	Pending antitrust approval	3.2
 Lanxess AG	 Chemtura Corp.	Lubricant and flame retardant additives	Pending shareholder and antitrust approval	2.4
 Teijin Ltd.	 Continental Structural Plastics Holdings Corp.	Composites (SMC)	Pending	0.8
 Reichhold Inc. (Black Diamond Capital Management, LLC)	 Polynt S.p.A (Investindustrial)	Organic anhydrides	Pending antitrust approval	0.8
 Berry Plastics Group Inc.	 AEP Industries Inc.	Plastic packaging	Pending shareholder and antitrust approval	0.8

<sup>1</sup> All numbers are in US\$ billion *Financial investors are italicized* *Figures in blue are estimated values*

Sources: Thomson One, KPMG Analysis

# Chemicals

Deal activity remains buoyant in the chemical sector. The value of all completed deals increased by 60% to \$56 billion in Q1-Q3 2016 versus Q1-Q3 2015. Consolidation was especially pronounced in the fertilizer segment. Germany continues to be one of the most active countries with a focus on high margin specialty segments.

## DEAL FOCUS AREAS

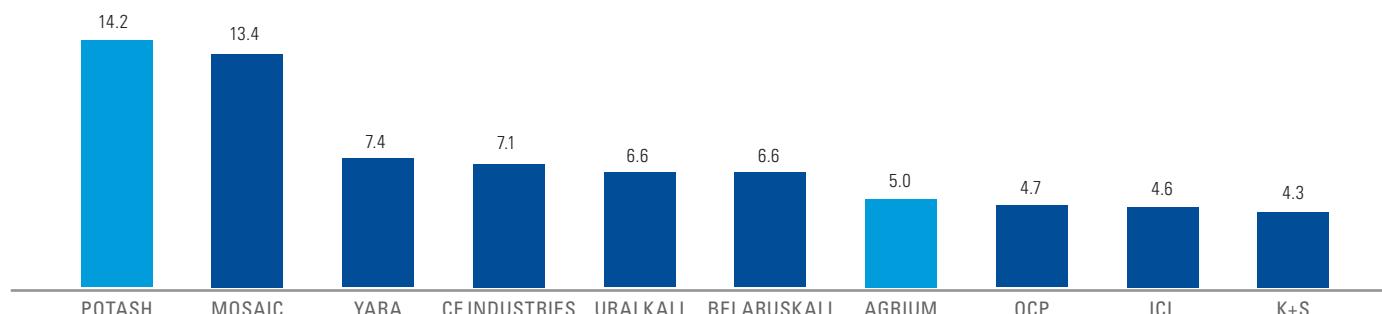
Agrochemicals continue to dominate the M&A landscape as Bayer AG reached an agreement to acquire Monsanto Co. for \$66 billion. Monsanto finally accepted Bayer's fourth offer to create the world's largest agrochemical company with combined revenues of \$26.5 billion in crop protection and seeds.

China National Chemical Corp. (ChemChina) acquired the remaining 40% stake in ADAMA Agricultural Solutions Ltd. from Israel's Discount Investment Corp., valued at \$1.4 billion. Subsequently, ADAMA combined with Hubei Sanonda Co., Ltd., another firm owned by ChemChina. The new entity is valued at \$3.9 billion.

### Fertilizers

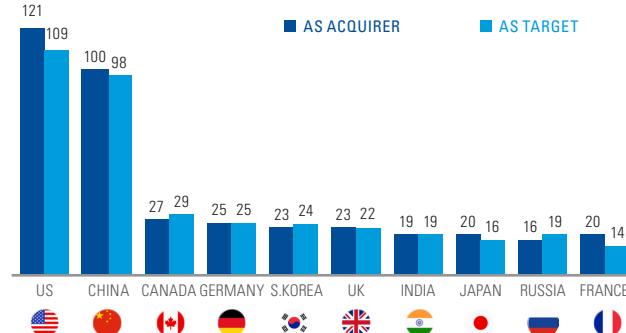
In the market for fertilizers consolidation continues likewise. 33 deals have been completed in the sector in 2016 to date. In contrast to the specialty agrochemicals sector the market for fertilizers generally offers lower margins in particular due to fierce competition. The market is expected to grow by 2-3% annually until 2020.

FIGURE 7: FERTILIZER MARKET 2015, PRODUCTION CAPACITY IN MILLION TONNES



Includes potash, nitrogen and phosphate.  
Source: EuroChem MCC, KPMG Analysis

FIGURE 8: TOP COUNTRIES IN CHEMICALS M&A Q1-Q3 2016



Sources: Thomson One, KPMG Analysis

After failing to acquire K+S AG, Canadian fertilizer producer Potash Corp. of Saskatchewan Inc. agreed to combine with Agrium Inc. The \$13.1 billion tie-up would create the world's distinct leader in fertilizers and Canada's third largest natural resource company.

The merger integrates Potash's low-cost production business of potash, nitrogen and phosphate with Agrium's leading retail distribution platform and smaller scale production segment. Operating synergies are expected to amount to \$500 million annually.

One of the main competitors in the field, Russia's PJSC Uralkali, attracted interest by Belarus private investor Dmitry Lobyak who acquired a 20% stake valued at about \$1.7 billion.

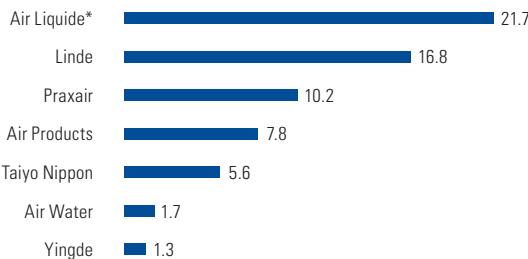
Consolidation is also apparent in the Chinese market as Jingtuyuan Holding Co., Ltd. acquired Golmud Possession Grid Potash Co., Ltd. for \$1.6 billion.

## INDUSTRIAL GASES

Linde AG and Praxair Inc., two of the world's largest industrial gas suppliers, held talks to combine in a merger of equals. However, the potential creation of a new global leader collapsed as both companies were unable to find common ground on governance issues.

The merger talks followed the \$13.4 billion acquisition of Airgas Inc. by Air Liquide SA whereby the French company gained the number 1 position in the sector. Air Liquide just secured the refinancing of the deal by the successful issuance of multiple bonds. In addition, it completed the divesture of assets to comply with the conditional antitrust approval in the US. Matheson Tri-Gas Inc., a unit of competitor Taiyo Nippon Sanso Corp., acquired several businesses and production facilities from Air Liquide for \$0.8 billion.

FIGURE 9: INDUSTRIAL GASES MARKET, REVENUES 2015, \$ BILLION



Revenues of industrial gases segments only. \*Pro-forma Air Liquide and Airgas excl. divestitures

Sources: Annual Reports, KPMG Analysis

## CAPITAL INDEX

Following a set-back at the beginning of the year, chemical indices climbed throughout all global markets in 2016, gaining 4% to 8% on a year to date basis.

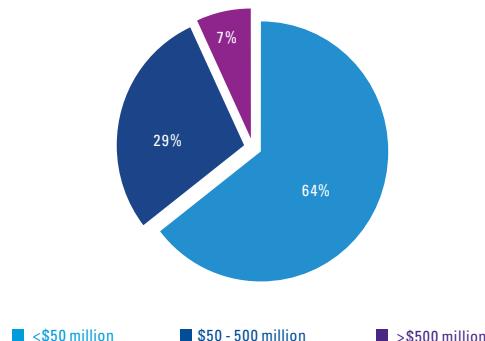
German companies performed exceptionally strongly with Covestro AG (+54.8% YTD) and Lanxess AG (+30.3%) leading the field. Notable laggards include Yara International ASA (-22.7%) and LG Chem Ltd. (-21.6%).

FIGURE 10: DEVELOPMENT OF CHEMICAL SHARE PRICES Q1-Q3 2016



Sources: Bloomberg, KPMG Analysis

FIGURE 11: CHEMICALS DEALS BY SIZE OF TRANSACTION Q1-Q3 2016



Includes all deals with a disclosed value.  
Sources: Thomson One, KPMG Analysis

## LANXESS CONTINUES EXPANSION

German specialty company Lanxess AG further pushed its expansion strategy by the announced \$2.4 billion acquisition of Chemtura Corp., a leading supplier of lubricant and flame retardant additives. Chemtura's portfolio is highly complementary to Lanxess' own additives business. The combined operations are expected to command high EBITDA-margins of 20%.

The acquisition follows Lanxess' bid for the clean and disinfect business of Chemours Co. and the creation of a joint-venture with Saudi Aramco in Q2 2016. All deals are part of a strategy to improve business set-up and expand into higher margin segments.

## PLASTICS

The plastics industry experienced strong M&A activity in 2016. While demand is continuously growing in Asia, Western markets are more mature and thus offer less opportunities for organic growth. This drives consolidation as firms strive to expand their business.

Westlake Chemical Corp. finally completed the acquisition of Axiall Corp. after an enduring takeover contest. The total consideration amounts to \$3.8 billion including Axiall's debt and creates the second largest PVC producer in North America.

Berry Plastics Group, Inc. announced the \$0.8 billion acquisition of AEP Industries Inc., a producer of flexible plastic packaging films with various applications. The deal increases Berry's North American footprint and is expected to entail cost synergies of \$50 million.

Earlier this year, Reichhold Inc. and Polyt S.p.A. agreed to combine activities in a \$0.8 billion deal. The new company offers a comprehensive portfolio of specialty products as plasticizers and unsaturated polyester resins and will be able to serve a wide range of customers.

# BASIS OF DATA PREPARATION

Values and volumes used throughout the report are based on completion date as provided by Thomson Reuters' database Thomson One as of 30 September 2016, extracted up to and including 04 October 2016, and supplemented by additional independent research. This report includes disclosed and undisclosed values for M&A transactions including minority stake purchases, acquisitions of remaining interest, and recapitalizations and it explicitly excludes self-tenders and spinoffs. The published numbers of deals and deal values are based on the analysis of target companies which operate in the following subsectors:

## Pharmaceuticals

- Medicinal chemicals & botanical products
- Pharmaceutical preparations
- In vitro and in vivo diagnostic substances
- Biotechnology – biological products, except diagnostic substances
- Pharmaceutical wholesale (added starting in Q2 2014)

## Chemicals

- Clay, kaolin, ceramic & refractory minerals
- Chemical and non-metallic mineral mining, except fuels
- Fertilizers and agricultural chemicals
- Industrial gases
- Specialty chemicals
- Chemical wholesale
- Plastics and rubber components

KPMG's Deal Thermometer is based on financial data as provided by S&P Capital IQ of public companies in the same sector as noted above with a market capitalization at quarter end of at least a \$1 billion. For the pharmaceutical sector, this comprises 181 public companies. For the chemical sector, this comprises 176 public companies.

All figures in this report are shown in US Dollars (\$) unless otherwise stated.

## Sources

Online databases:

- Thomson One (Thomson Reuters)
- Mergermarket
- S&P Capital IQ
- Bloomberg
- EvaluatePharma

## Publications

- Various companies' press releases
- US Federal Trade Commission

## Imprint

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