# Deal Capsule

## Transactions in Chemicals & Pharmaceuticals

January 2016

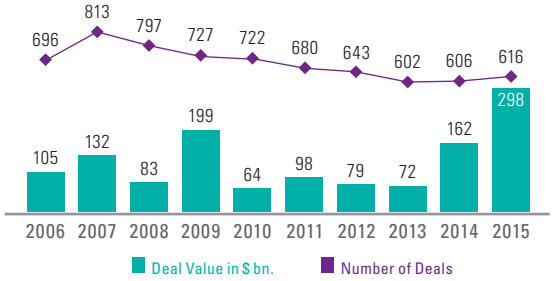
"We expect further transformational deals in Life Sciences in 2016 as companies pursue growth aggressively in their chosen areas of specialization."

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

## HIGHLIGHTS

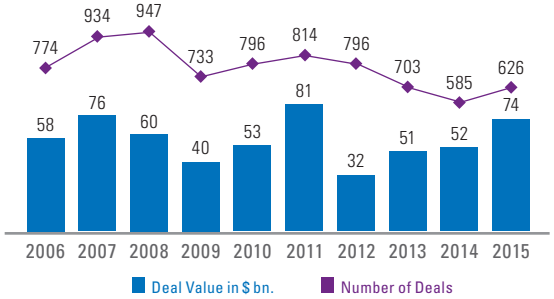
- 2015 was the year of the mega deal. Pfizer announced the $160 billion acquisition of Allergan, the largest-ever life sciences transaction and the biggest deal of 2015. Dow Chemical and Du Pont's $62 billion announced merger is, similarly, a ground-breaking transaction in the chemicals sector.
- Big Pharma continues to acquire biotechs to replenish its R&D pipeline, as transactions are done increasingly in the earlier R&D stages.
- Transactions in chemicals, on the other hand, are moving up the value chain as companies seek to strengthen their positions in the high-margin specialties segment.
- KPMG's Deal Thermometer indicates that the environment for M&A activity will remain 'Hot' in pharmaceuticals and 'Moderate' in chemicals.

FIGURE 1: TRENDS IN PHARMACEUTICALS M&A




Sources: Thomson One, KPMG Analysis

FIGURE 2: TRENDS IN CHEMICALS M&A



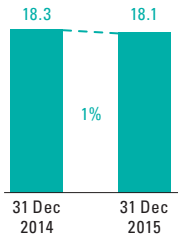

Sources: Thomson One, KPMG Analysis

## DEAL THERMOMETER

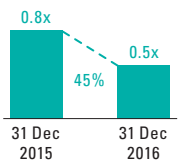
KPMG's Deal Thermometer signals the environment for M&A deals in chemicals and pharmaceuticals. It combines the appetite for deals (changes in forward P/E ratios) with the capacity to fund deals (changes in Net Debt/ EBITDA multiples). 'Hot' signifies an environment conducive to deal-making.

### PHARMACEUTICALS

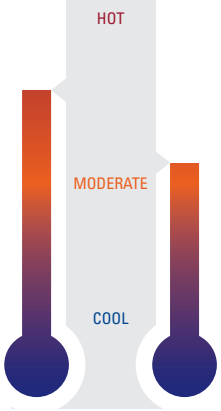
DEAL APPETITE (Forward P/E ratio)




DEAL CAPACITY (Net debt/EBITDA)

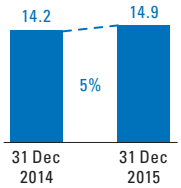



Sources: Capital IQ, KPMG Analysis

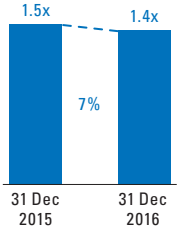



### CHEMICALS

DEAL APPETITE (Forward P/E ratio)




DEAL CAPACITY (Net debt/EBITDA)




Sources: Capital IQ, KPMG Analysis

# Pharmaceuticals

Pharmaceutical deal activity continued at a frenzied pace during 2015 with the value of the top 10 completed deals doubling to $ 179 billion. Strategic repositioning is a key driver for pharmaceutical M&A and competition for assets has increased further. US remains the most active country.

## DEAL FOCUS AREAS

Top pharmaceutical players engaged in focused deal making to move into leading market positions by strengthening their pipelines in their designated core therapy areas.

In Q2 2015, Actavis PLC acquired Allergan Inc. for $ 70.5 billion, creating one of the world's top 10 pharmaceutical companies. Actavis took the Allergan name and announced the divestment of its generics business to Teva Pharmaceutical Industries Ltd. for $ 40.5 billion, advancing its transformation into a branded drugs specialist with a market cap of $ 110 billion.

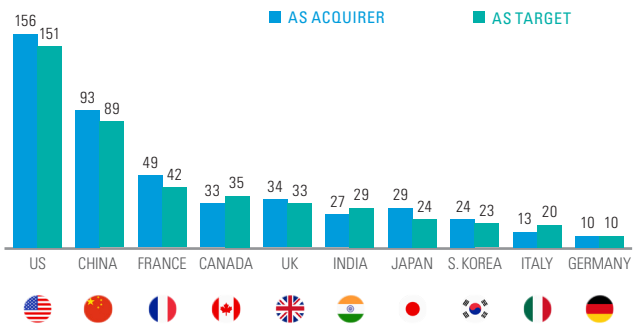
Through its acquisition of Allergan's generics business, Teva Pharmaceutical Industries Ltd. would reach top three positioning in over 40 markets and solidify its global leadership in generics with a market share of 20%.

In Q4 2015, C.H. Boehringer Sohn AG & Co. KG (BI), announced negotiations with Sanofi. BI would swap its consumer healthcare business (excluding China), worth € 6.7 bn., for Sanofi's animal health business, worth € 11.4 bn.; and pay € 4.7 bn. Sanofi would become number one in consumer health care with estimated 2015 proforma sales of € 5.6 billion. At the same time, through complementing its companion animals, poultry and swine portfolios, BI would become the number two animal health player with estimated 2015 proforma sales of € 4.2 billion.

### Growing public debate over drug pricing

Prescription drug hikes by companies such as Turing Pharmaceuticals LLC and Rodelis Therapeutcal caused political outrage with US presidential candidate Hillary Clinton presenting a Plan for Lowering Prescription Drug Costs in Q3 2015. Uncertainty among investors negatively impacted share prices.

FIGURE 3: **TOP COUNTRIES IN PHARMACEUTICALS M&A 2015**




Sources: Thomson One, KPMG Analysis

### Pfizer takes deal frenzy to new level

In Q4 2015, Pfizer Inc. and Allergan announced talks on a potential $ 160 billion merger – the largest-ever pharmaceutical and third-largest deal across all industries.

With a market value over $ 300 billion, the new entity would overtake Johnson&Johnson Services Inc. as the world's largest life sciences company. The aligned portfolio including Botox, Viagra, the Prevnar pneumonia vaccine and treatments for Alzheimer's and rheumatoid arthritis, could initially generate annual sales of over $ 65 billion. The transaction would further result in a domiciliation of Pfizer to Ireland.

Pfizer has a reputation for large-scale transactions with three other deals among the top five in pharma M&A history: the acquisitions of Warner-Lambert Co. for $ 89 billion and Pharmacia Corp. for $ 60 billion in the early 2000s and that of Wyeth for $ 67 billion in 2009.

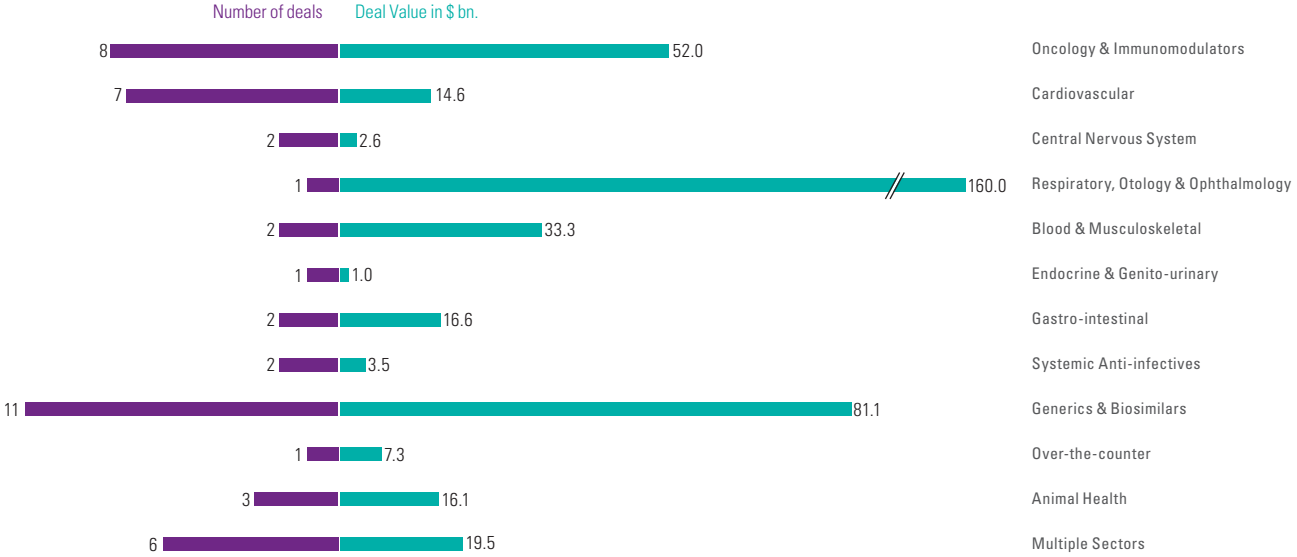
## MARKET OUTLOOK

(based on a survey conducted by KPMG in collaboration with Mergers & Acquisitions magazine)

- Technology and pharmaceuticals/biotechnology are expected to be the most active industries for M&A in 2016.
- Pharmaceuticals/biotechnology M&A activity will be driven by the need to access clinical research and by patent expirations for many leading drugs.
- Most active markets will be North America and Western Europe

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

FIGURE 4: **DEAL ACTIVITY BY TARGET'S MAIN THERAPEUTIC AREA IN 2015**

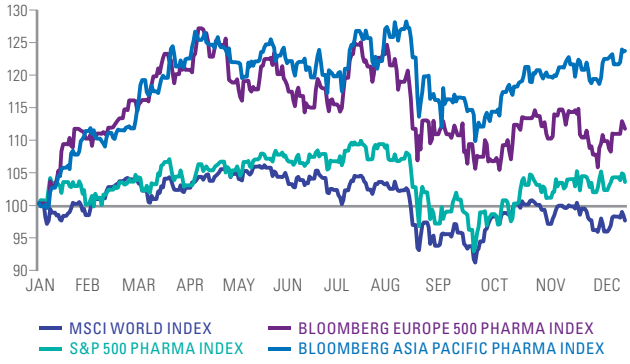



All pharma deals announced in 2015 (unless withdrawn) and with a deal value greater than $1 billion are considered.
Sources: Thomson One, EvaluatePharma, KPMG Analysis

## CAPITAL INDEX

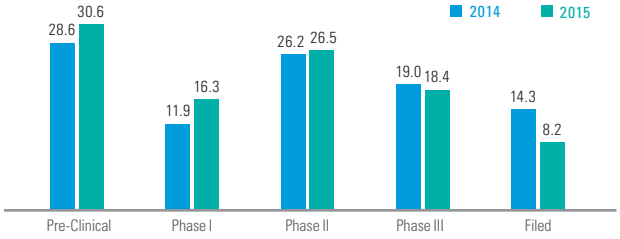
All pharma indices outperformed the market in 2015. Both, the European (+11.6%) as well as the Asian Pacific index (+23.8%), rose strongly while the US index recorded only moderate growth of 3.3%.

FIGURE 5: **DEVELOPMENT OF PHARMA SHARE PRICES 2015**




Sources: Bloomberg, KPMG Analysis

FIGURE 6: **DEALS PER R&D STAGE OVER LAST 2 YEARS*** in %




*All deals >$500 bn. for which R&D data is available.
Sources: Thomson One, KPMG Analysis

## BIOTECH

Big pharma is rapidly buying Biotech's rare disease portfolios. For instance, Alexion Pharmaceuticals Inc. acquired Synageva BioPharma Corp. for $8.4 billion in Q2 2015. With eight clinical trial candidates (several are designated breakthrough therapies with FDA priority review status) and over 30 preclinical programs across diverse therapy areas, Alexion will have one of biotech's most robust rare disease pipelines.

In Q4 2015, Shire PLC announced the acquisition of rare disease specialist Dyax Corp. for $6.5 billion, securing Shire's hereditary angioedema portfolio. Its lead fast track, breakthrough therapy and orphan drug-designated phase three-ready product, DX-290, is considered to have blockbuster potential. At the time of publication, Shire had increased its bid for Baxalta to $32 billion. This would further strengthen Shire's rare disease portfolio.

AstraZeneca PLC (AZ) has also been replenishing its pipeline through acquisitions. AZ acquired ZS Pharma Inc. for $2.7 billion to bolster its cardiovascular and metabolic disease portfolio through accessing ZS-9, a possible best-in-class specialty treatment for hyperkalaemia. AZ is also pursuing a deal with Acerta Pharma BV for $4 billion, adding an experimental drug for leukaemia, lymphomas and other cancers to its portfolio.

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

# Pharmaceuticals

The deal value of the global top 10 **completed** deals in 2015 was

**$179 billion**

## TABLE 1: GLOBAL TOP DEALS COMPLETED IN 2015

| BIDDER | TARGET | THERAPY AREA | VALUE[1] | CONTINGENT PAYMENTS[1] | TOTAL VALUE[1] |
|---|---|---|---|---|---|
| Actavis PLC | Allergan Inc. | Ophthalmology, neurosciences, dermatology, cosmetics and urology | | | 70.5 |
| AbbVie Inc. | Pharmacyclics Inc. | Cancer and immune mediated diseases | | | 21.0 |
| Pfizer Inc. | Hospira Inc. | Generics, injectable drugs (e.g. acute care and oncology), infusion technologies, and biosimilars | | | 17.0 |
| Novartis AG | GlaxoSmithKline PLC – Oncology Business | Oncology | 14.5 | 1.5 | 16.0 |
| Valeant Pharmaceuticals International Inc. | Salix Pharmaceuticals Ltd. | Gastrointestinal diseases | | | 14.5 |
| Merck & Co. Inc. | Cubist Pharmaceuticals Inc. | Anti-infective therapies for the acute care environment | | | 9.5 |
| Alexion Pharmaceuticals Inc. | Synageva BioPharma Corp. | Rare diseases | | | 8.4 |
| Endo International PLC | Par Pharmaceutical Companies, Inc. | Generics (wide range of therapeutic areas) | | | 8.1 |
| Celgene Corp. | Receptos Inc. | Immune and metabolic diseases | | | 7.2 |
| GlaxoSmithKline PLC | Novartis AG – Vaccine Business | Vaccines | 5.3 | 1.8 | 7.1 |

The deal value of the global top 10 **announced** deals in 2015 was

**$355 billion**

## TABLE 2: GLOBAL TOP DEALS ANNOUNCED IN 2015, YET TO CLOSE

| BIDDER | TARGET | THERAPY AREA | DEAL STATUS | TOTAL VALUE[1] |
|---|---|---|---|---|
| Pfizer Inc. | Allergan PLC | OTC, ophthalmology, dermatology | Pending shareholder and antitrust approval | 160.0 |
| Teva Pharmaceutical Industries Ltd. | Mylan N.V. | Generics and specialty, central nervous system and respiratory diseases | Withdrawn | 43.0 |
| Teva Pharmaceutical Industries Ltd. | Allergan PLC – Generic drug business | Generics (wide range of therapeutic areas) | Pending antitrust approval | 40.5 |
| Mylan N.V. | Perrigo Company PLC | OTC and generics (wide range of therapeutic areas) | Withdrawn | 34.1 |
| Shire PLC | Baxalta Inc. | Hematology, immunology, oncology | Pending | 32.0 |
| Endo International PLC | Salix Pharmaceuticals Inc. | Gastrointestinal diseases | Withdrawn | 14.6 |
| C.H. Boehringer Sohn AG & Co. KG | Sanofi SA – animal health business | Animal health | Pending antitrust approval | 12.5 |
| Sanofi SA | C.H. Boehringer Sohn AG & Co. KG – OTC business | OTC | Pending antitrust approval | 7.3 |
| Shire PLC | Dyax Corp | Rare diseases | Pending shareholder and antitrust approval | 6.5 |
| AstraZeneca PLC | Acerta Pharma BV (55%) | Oncology | Pending antitrust approval | 4.0 |

[1] All numbers are in US$ billion *Financial investors are italicized* Figures in green are estimated values

Sources: Thomson One, KPMG Analysis

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

# Chemicals

The deal value of the global top 10 **completed** deals in 2015 was

**$51** billion

## TABLE 3: GLOBAL TOP DEALS COMPLETED IN 2015

| BIDDER | TARGET | BUSINESS AREA | TOTAL VALUE[1] |
|---|---|---|---|
| Merck KGaA | Sigma-Aldrich Co. | Biochemicals, organic chemicals and lab equipment | 17.0 |
| Olin Corp. | The Dow Chemical Co. – Chlor-Alkali business | Chlor-alkali and derivatives | 7.0 |
| Albemarle Corp. | Rockwood Holdings Inc. | Lithium, catalysts, bromine and surface treatment | 6.2 |
| Solvay SA | Cytec Industries Inc. | Polymers and additives | 5.5 |
| Platform Specialty Products Corp. | Arysta LifeScience Ltd. | Agrochemical and biological products | 3.5 |
| Equate Petrochemical Co KSCC | MEGlobal International FZE | Ethylene glycol | 3.2 |
| Platform Specialty Products Corp. | Alent PLC | Advanced surface treatment plating chemicals | 2.3 |
| Arkema SA | Bostik SA (a part of Total S.A.) | Adhesives | 2.2 |
| Asahi Kasei Corp. | Polypore International Inc. | Lithium and lead-acid battery separators , OEM membranes, etc. | 2.2 |
| FMC Corp. | Cheminova A/S (a part of Auriga Industries A/S) | Crop protein products | 1.8 |

The deal value of the global top 10 **announced** deals in 2015 was

**$149** billion

## TABLE 4: GLOBAL TOP DEALS ANNOUNCED IN 2015, YET TO CLOSE

| BIDDER | TARGET | BUSINESS AREA | DEAL STATUS | TOTAL VALUE[1] |
|---|---|---|---|---|
| Dow Chemical Co. | E. I. du Pont de Nemours and Co. | Chemicals | Pending shareholder and antitrust approval | 62.1 |
| Monsanto Co. | Syngenta AG | Agriculture and animal biotechnology | Withdrawn | 46.0 |
| Air Liquide SA | Airgas Inc. | Industrial gases | Pending shareholder and antitrust approval | 13.4 |
| Potash Corp. of Saskatchewan Inc. | K+S AG | Phosphatic fertilizers | Withdrawn | 8.7 |
| CF Industries Holdings Inc. | OCI N.V. – North American, European assets, global distribution business | Nitrogen fertilizers | Pending shareholder and antitrust approval | 8.0 |
| CHS Inc. | CF Industries Nitrogen LLC (11%) | Nitrogen fertilizers | Pending shareholder and antitrust approval | 2.8 |
| Dalian Rubber & Plastics Machinery Co., Ltd. | Jiangsu Hengli Chemical Fibre Co., Ltd. | Chemical fibres | Pending | 2.4 |
| Lotte Chemical Corp. | Samsung SDI Co., Ltd. – Chemical Business | Plastics (ABS, PC) | Pending shareholder and antitrust approval | 2.0 |
| Weihai Huadong Automation Co., Ltd. | Jiutai Energy Inner Mongolia Co., Ltd. | Methanol, dimethyl ether, and sulfur | Pending | 1.9 |
| Chengzhi Shareholding Co., Ltd. | Wison (Nanjing) Clean Energy Co., Ltd. (a part of Wison Group) | Industrial gases | Pending | 1.5 |

[1] All numbers are in US$ billion *Financial investors are italicized* Figures in blue are estimated values

Sources: Thomson One, KPMG Analysis

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

# Chemicals

Chemical M&A deal volume totaled $74 billion in 2015, representing the highest level since 2011. The majority of transactions was strategically motivated. Financial investors showed interest in the high-margin polymer segment. US, followed by China and Japan dominate the chemical M&A landscape.

## DEAL FOCUS AREAS

In Q3 2015, Merck KGaA acquired Sigma-Aldrich Co. for $17 billion, pursuing its focus on the $130 billion life science industry, with its key areas being healthcare and performance materials.

In Q1 2015, Albemarle Corp. acquired Rockwood Holdings Inc., the world's largest lithium processer, for $6.2 billion. Albemarle combines complementary high-margin specialty portfolios to penetrate lithium-based energy storage products, thus strengthening its positioning in the highly concentrated lithium industry, growing at 7% to 10% annually.

In Q4 2015, Air Liquide SA announced the $13.4 billion acquisition of Airgas Inc., thus becoming the leader in the US industrial gas market ahead of its German competitor, Linde AG.

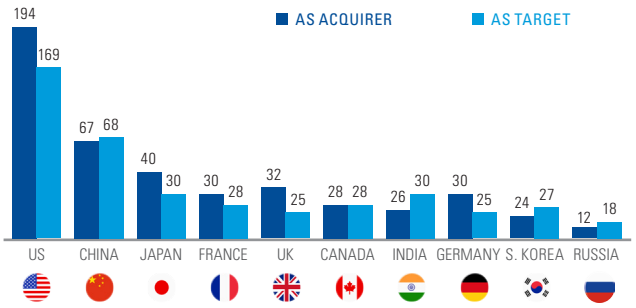
Through the $7 billion acquisition of The Dow Chemical Co.'s chlor-alkali division in Q3 2015, Olin Corp. triples capacity in its core business and becomes the world's second largest chlorine producer.

Dow plans to take full ownership of a 50-50 joint venture with Corning Inc. for $4.8 billion, broadening its silicone product offerings. Thus, Dow expects an additional increase in adjusted earnings of more than $1 billion.

### Dow announces largest-ever chemical transaction

In Q4 2015, Dow announced a $62.1 billion merger with E. I. du Pont de Nemours and Co. targeting $3 billion cost synergies and a combined market capitalization of $130 billion. They will first merge, then split into three independent, highly-focused companies in material science, specialty products and agriculture.

FIGURE 7: **TOP COUNTRIES IN CHEMICALS M&A 2015**




Sources: Thomson One, KPMG Analysis

The seeds of consolidation in agrochemicals were planted when Monsanto Co. made several offers to acquire Swiss crop chemicals specialist, Syngenta AG, with the last offer valued at $46 billion. A subsequent offer from the state owned Chinese chemical giant, ChemChina, for $42 billion was also rejected.

## COVESTRO

Covestro AG, formerly known as Bayer MaterialScience, debuted on the stock market in October 2015. Unleashing its potential as a pure-play polymer developer and producer, Covestro is well-placed to accelerate its growth in key markets such as automotive, construction and electricals/electronics. Proceeds from the share sale of around $1.5 billion are further used to repay the intercompany debt to Bayer.

## FINANCIAL INVESTORS

In 2015, financial investors were active in the high-margin polymers business. Apollo Funds first acquired OM Group Inc. for $1 billion in Q4 2015 and then sold OM's electronic chemicals and photomasks businesses to Platform Specialty Products Corp. for $0.4 billion.

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

## ACQUIRING HIGHER UP THE VALUE CHAIN

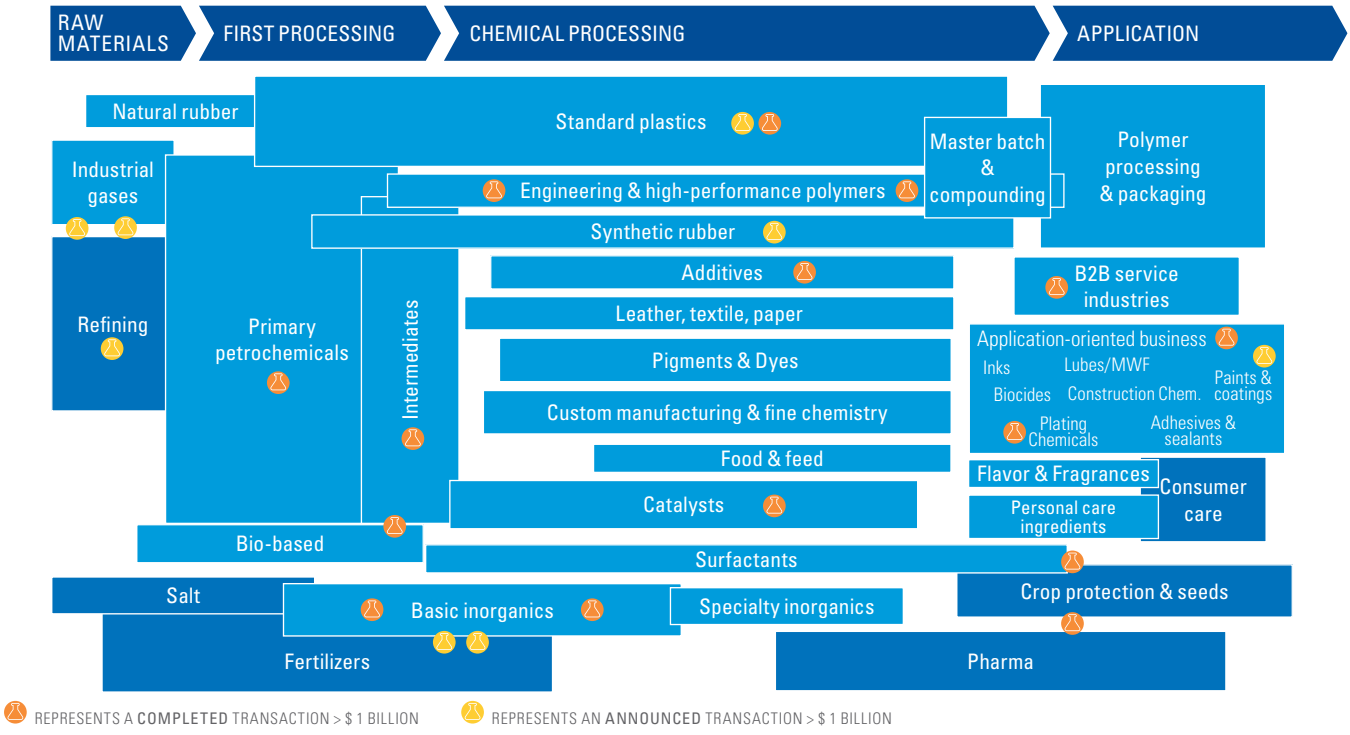
Deal activity in the chemical sector in 2016 is expected to remain buoyant due to the following factors:

— Continued consolidation

— Growing middle class in emerging markets spurring demand for chemical products.

— Low interest rates and availability of cash reserves

FIGURE 8: **CHEMICAL DEALS ALONG THE VALUE CHAIN**




## ASIA

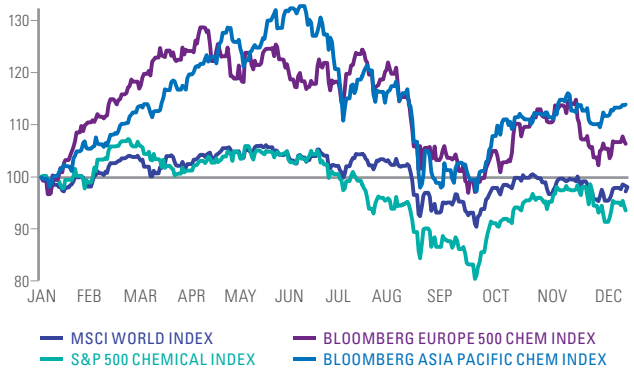
Gaining access to the Chinese capital market via "back-door listings" enables chemical companies to implement their corporate strategy which otherwise would be out of reach. One such back door listing was the $ 1.9 billion domestic acquisition of Jiutai Energy Inner Mongolia Co., Ltd. (China) announced by Weihai Huadong Automation Co., Ltd. The announced $ 1.5 billion acquisition of Wison (Nanjing) Clean Energy Co., Ltd. (China) by the financial investor Chengzhi Shareholding Co., Ltd. (China) underlines Wison's ambitions to become a leading supplier of industrial gas and downstream olefin products derived from coal.

Asian players are focused on advanced chemicals to meet growing middle class demand. Dalian Rubber & Plastics Machinery Co., Ltd. acquired Jiangsu Hengli Chemical Fibre Co., Ltd. for $ 2.4 billion. The South Korean Lotte Group acquired Samsung's fine chemicals divison as well as their battery and electronics chemical segment for $ 2.0 billion.

## CAPITAL INDEX

The S&P 500 Chemicals Index lost 6.3% in 2015 and slightly underperformed the market (-2.7%). However, the Bloomberg Europe 500 Chemicals Index (+6.3%) as well as the Bloomberg Asia Pacific Chemicals Index (+13.7%) beat the market.

FIGURE 9: **DEVELOPMENT OF CHEMICAL SHARE PRICES 2015**




Sources: Bloomberg, KPMG Analysis

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

# 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 4 January 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 vivo 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 188 public companies. For the chemical sector, this comprises 173 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

## Imprint


### Publisher

KPMG AG Wirtschaftsprüfungsgesellschaft
Tersteegenstrasse 19-31
40474 Dusseldorf
Germany


### Contact

**Vir Lakshman***
Partner, Deal Advisory
Head of Chemicals & Pharmaceuticals, Germany
T +49 211 475-6666
vlakshman@kpmg.com

**Christian Klingbeil**
Partner, Deal Advisory – Valuation
T +49 89 9282-1284
cklingbeil@kpmg.com

**Christian Specht**
Partner, Deal Advisory – M&A
T +49 69 9587-2240
cspecht@kpmg.com


### Authors


**Rita Duran**
Senior Manager, Deal Advisory
Chemicals & Pharmaceuticals, KPMG in Germany

**Helen Christmann**
Chemicals & Pharmaceuticals, KPMG in Germany

**Daniel Pietzker**
Chemicals & Pharmaceuticals, KPMG in Germany


### Contributors


**Andy Qiu**
Partner, KPMG in China

**Ellen Zhang**
Manager, KPMG in China



* Responsible according to German Law (§ 7 (2) BerlinerPresseG): Vir Lakshman

**www.kpmg.de**



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation. Our services are provided subject to our verification whether a provision of the specific services is permissible in the individual case.

© 2016 KPMG AG Wirtschaftsprüfungsgesellschaft, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Germany. The KPMG name and the logo and are registered trademarks of KPMG International.

FSC www.fsc.org MIX Paper from responsible sources FSC® C014405