



Optimize deals

PwC Deals

Global Chemicals M&A Deals Insights Q4 2016

Executive summary

Global Chemicals M&A closed 2016 on an upward swing. Total deal value of \$46.9 billion (for deals with disclosed value greater than \$50 million) was 128% higher than the last quarter. Deal volume was also stronger as Q4 brought 38 new chemical deals, a 52% increase from the last quarter. On average, the sector has seen 140 deals in each of the last two years.

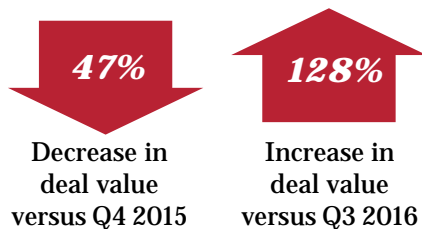
Two thousand and sixteen experienced several industry-altering transactions as (i) in February, ChemChina announced its acquisition of Syngenta, (ii) in May, Bayer announced its acquisition of Monsanto, and (iii) in December, the Praxair/Linde merger announcement was confirmed after a previous failed attempt. These three megadeals alone account for 68% of the total deal value announced in 2016.

While the volume of transactions remained highest in the Asia & Oceania region, this year saw a significant move towards cross-border transactions. Seventy-eight percent of deal value in 2016 is attributed to transactions made outside country boundaries, compared to only 24% in 2015.

The recent stability of feedstock prices may have led to a decline of a number of new transactions in the Fertilizers and Agricultural Chemicals space in Q4, a category that has been very active and has experienced the highest premiums in Chemicals M&A over the last few years.

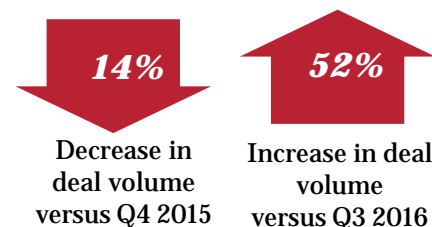
Value by the numbers

\$46.9B



Volume by the numbers

38



“ We have witnessed several cross-border industry-altering megadeals that will likely change the landscape of the Fertilizers and Agricultural Chemicals and Industrial Gases subsectors significantly. While we do not expect a similar level of megadeals, we anticipate chemical deal activity to remain strong in the first half of 2017. ”

— Craig Kocak,
US Chemicals Deals Leader

Key trends/highlights

- In 2016, the Global Chemicals M&A deal value totaled \$198 billion, a 39% increase compared to 2015.
- Praxair’s \$35 billion acquisition of Linde was the largest transaction announced in Q4 2016. This megadeal accounts for 75% of the total deal value in this period.
- While the Fertilizer and Agriculture category led deal value in 2016, the Industrial Gases category had the largest transaction in Q4 2016.
- Bayer’s \$55 billion acquisition of Monsanto in May 2016 was the largest transaction of the year solidifying Bayer’s market presence in the agricultural market and high-tech crops.
- Financial buyers’ share of Global Chemicals M&A deal value remained low throughout 2016, averaging just 6%.
- There remains regulatory uncertainty around the four pending megadeal transactions in the Agriculture and Industrial Gases subsectors.



Source: Thomson Reuters and other publicly available sources
Note: This Deals Insights publication incorporates a change in methodology from our prior publications. Our new methodology includes only those deals where the target is a chemicals company.



Highlights of Q4 2016 deal activity

2016 wraps up on an upward note

Global Chemicals deal value totaled \$198 billion in 2016, a 39% increase compared to 2015. One hundred and thirty-six deals were announced this year, which is consistent with 2015's total of 141 deals.

Despite a lower average deal size in the end of 2016, Q4 saw a 128% increase in deal value compared to last quarter. A reduction of deals in the Fertilizers and Agricultural Chemicals category can be attributed to the decline in average deal size.

Source: Thomson Reuters and other publicly available sources

Megadeals

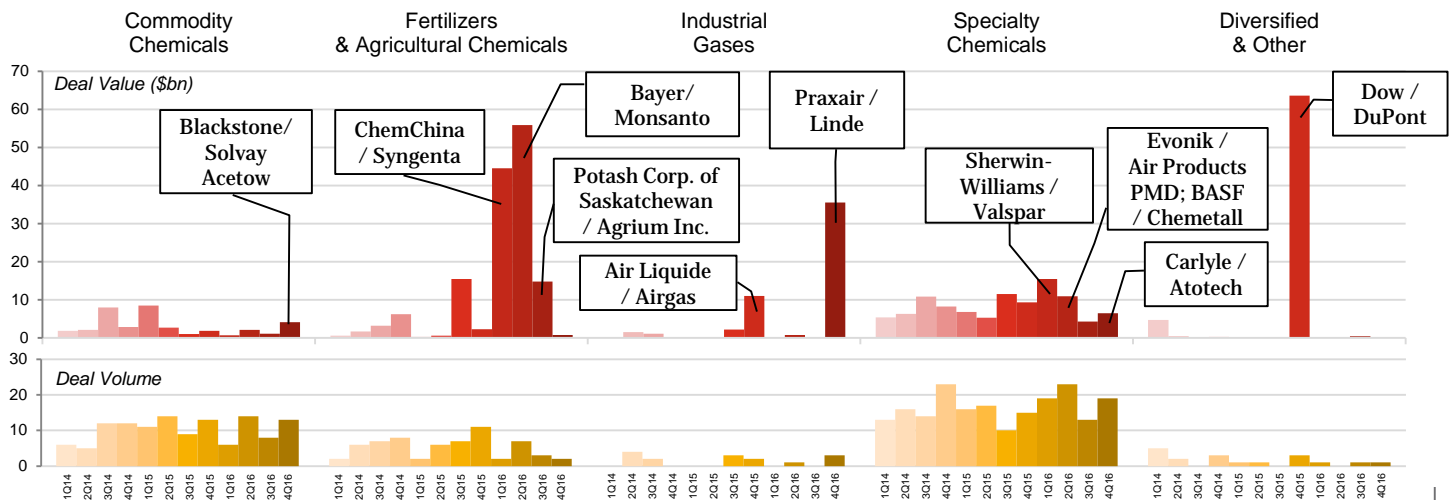
In Q4 2016, Praxair announced the acquisition of Linde for \$35.2 billion. The deal may have been a competitive response to Air Liquide's acquisition of Airgas in May which formed the largest global industrial gas supplier.

Bayer's acquisition of Monsanto in May was the largest transaction of the year. Both companies aim to close the merger by the end of 2017. The \$55 billion deal is expected to move Bayer towards the agriculture market and high-tech crops with a focus on sustaining a growing global population.

Source: Thomson Reuters and other publicly available sources

Sector category analysis

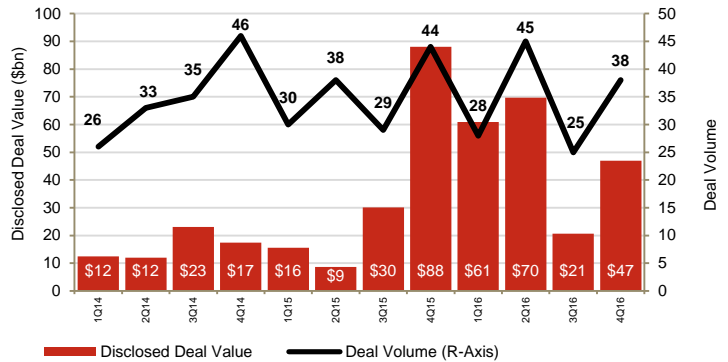
A drop in deal volume in the Fertilizers and Agricultural Chemicals category was offset by increased volumes in the Commodity Chemicals and Specialty Chemicals spaces in Q4. Altogether, these two categories contributed to 85% of deal volume in 2016, compared to 75% in 2015. Nevertheless, the Fertilizers and Agricultural Chemicals sector brought the most deal value in 2016.



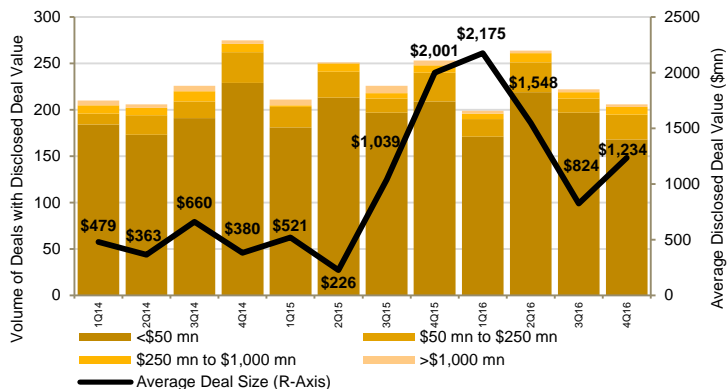
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Global Chemicals M&A Deal Volume and Value



Global Chemicals M&A Deals by Disclosed Value

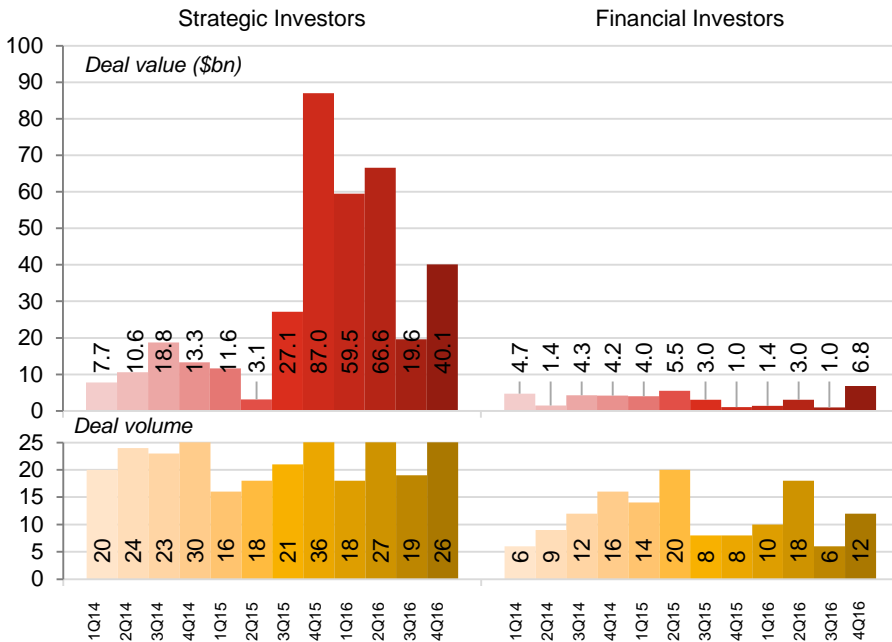




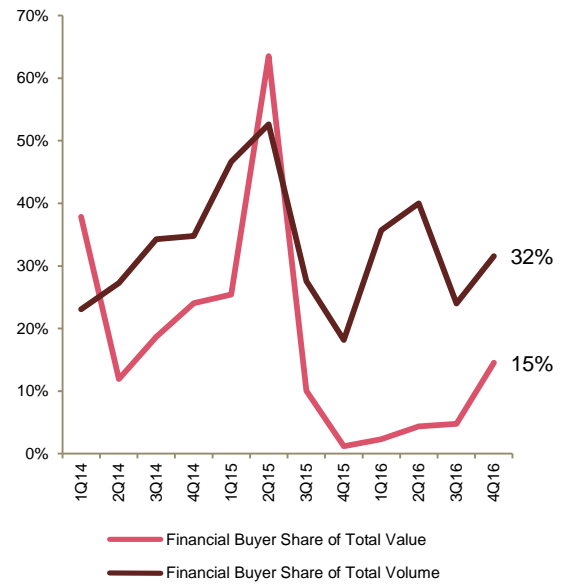
Key trends and insights

Financial vs. strategic investors

Strategic investors' share of deal value averaged 94% in 2016 as the industry continues to deal with internal change. Even so, financial investment increased to 15% in the fourth quarter, indicating there may be more private equity capital flowing into the Chemicals sector in 2017 and 2018.



Financial Investor Share of M&A Activity

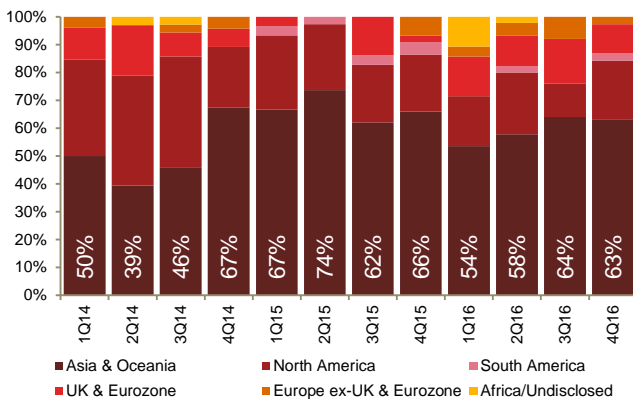


Source: Thomson Reuters and other publicly available sources

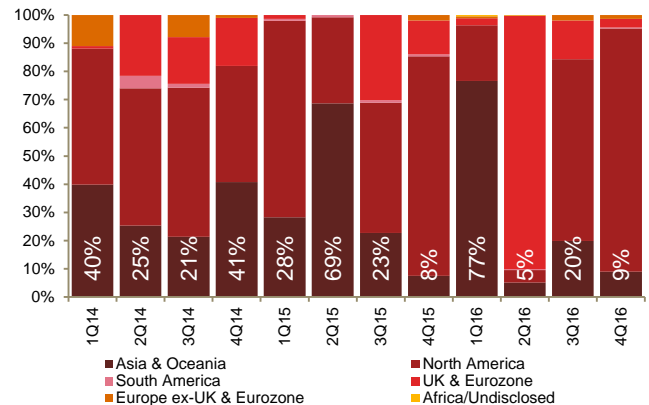
Regional analysis

With 81 deals, the Asia & Oceania region accounted for 60% of all transactions in 2016. Meanwhile, the UK & Eurozone along with the North American region contributed the most deal value, with 69% of the total value in 2016. Seventy-eight percent of value in 2016 is attributed to transactions made between country boundaries, compared to only 24% in 2015.

Share of Deal Volume by Acquirer Region



Share of Deal Value by Acquirer Region



Source: Thomson Reuters and other publicly available sources

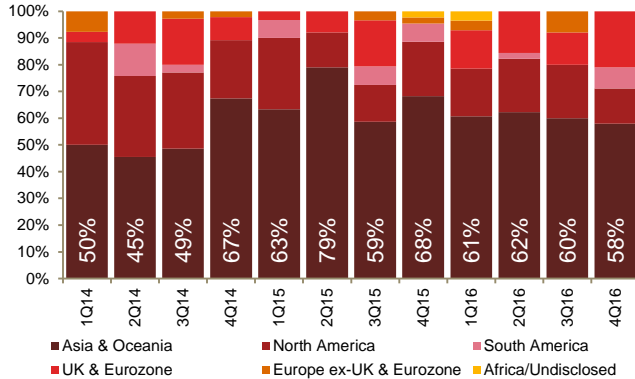
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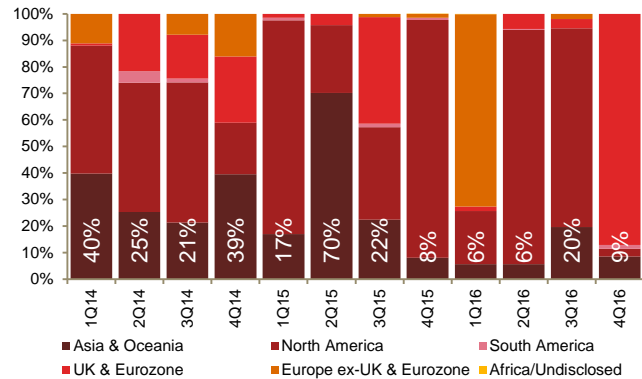
Key trends, insights and outlook

Regional analysis (continued)

Share of Disclosed Deal Volume by Target Region

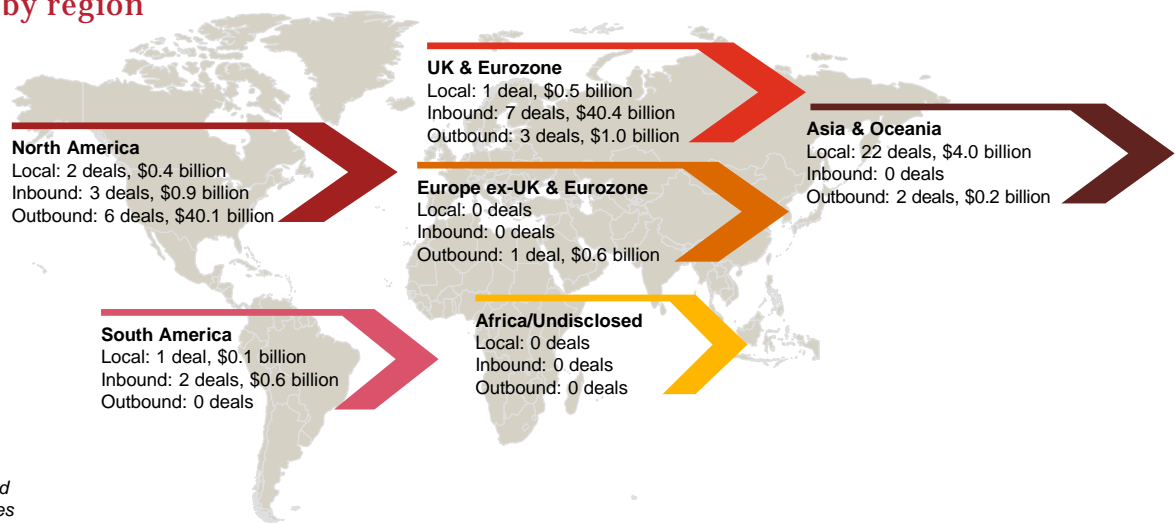


Share of Disclosed Deal Value by Target Region



Source: Thomson Reuters and other publicly available sources

Chemicals deals by region



Source: Thomson Reuters and other publicly available sources

Outlook remains bright amid uncertainty

Despite an eventful year that helped create an unpredictable environment for deal makers, Chemicals M&A concluded 2016 on a strong note with the December 20 announcement of the Praxair/Linde merger.

Throughout 2016, we have witnessed several cross-border industry-alternating megadeals which will likely have a profound impact to the global Fertilizers and Agricultural Chemicals and Industrial Gases subsectors, if completed.

While the pending megadeals hold appeal to the participants, we do expect that these transactions may continue to get a hard look under the current geopolitical environment and will likely attract more attention from lawmakers in 2017.

We anticipate as deal makers bring the pending megadeals to completion, abundant opportunities may arise for both

strategic buyers and private equity to acquire businesses being divested for anti-trust reasons or portfolio realignment.

There are uncertainties from the incoming Trump administration which may let deal makers pause in Q1. However, the general sentiment is still positive with companies embracing the anticipated pro-business policies and potential tax reform from the incoming administration. US chemical companies, particularly, remain attractive for inbound buyers. Cost of capital, despite increasing, remains low vs. historical levels and private equity dry powder continues to be at unprecedented levels. All the above, coupled with the continued low growth environment and push for portfolio coherence, should continue to fuel Chemicals M&A in 2017 and beyond.



Top 10 Chemicals Deals in 2016

Announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Deal value*	Category
05/18/16	Monsanto Co.	United States	Bayer AG	Germany	Pending	55,157	Fertilizers & Agricultural Chemicals
02/03/16	Syngenta AG	Switzerland	China National Chemical Corp.	China	Pending	44,182	Fertilizers & Agricultural Chemicals
12/20/16	Linde AG	Germany	Praxair Inc.	United States	Pending	35,164	Industrial Gases
08/30/16	Agrium Inc.	Canada	Potash Corp. of Saskatchewan Inc.	Canada	Pending	13,093	Fertilizers & Agricultural Chemicals
03/20/16	Valspar Corp.	United States	Sherwin-Williams Co.	United States	Pending	9,309	Specialty Chemicals
05/06/16	Air Products & Chemicals Inc.- Performance-Materials Operations	United States	Evonik Industries AG	Germany	Pending	3,800	Specialty Chemicals
06/17/16	Chemetall GmbH-Surface Treatment Business	Germany	BASF SE	Germany	Completed	3,200	Specialty Chemicals
10/07/16	Atotech BV	Germany	The Carlyle Group	United States	Pending	3,200	Specialty Chemicals
01/29/16	Axiall Corp.	United States	Westlake Chemical Corp.	United States	Completed	2,329	Specialty Chemicals
09/25/16	Chemtura Corp.	United States	Lanxess AG	Germany	Pending	2,110	Specialty Chemicals

Top 10 Chemicals Deals 2015

Announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Deal value*	Category
12/11/15	EI du Pont de Nemours & Co. {DuPont}	United States	The Dow Chemical Co.	United States	Pending	62,111	Diversified & Other
11/17/15	Airgas Inc.	United States	Air Liquide SA	France	Completed	10,630	Industrial Gases
07/20/15	OCI NV- North American, European & Global Distribution Businesses	Netherlands	CF Industries Holdings Inc.	United States	Withdrawn	7,981	Fertilizers & Agricultural Chemicals
07/29/15	Cytec Industries Inc.	United States	Solvay SA	Belgium	Completed	5,516	Specialty Chemicals
03/27/15	The Dow Chemical Co.- Chlor-Alkali & Derivatives Business	United States	Olin Corp.	United States	Completed	5,000	Commodity Chemicals
12/11/15	Dow Corning Corp.	United States	The Dow Chemical Co.	United States	Completed	4,800	Specialty Chemicals
08/16/15	Adama Agricultural Solutions Ltd.	Israel	Hubei Sanonda Co. Ltd.	China	Pending	2,916	Fertilizers & Agricultural Chemicals
08/12/15	CF Industries Nitrogen LLC	United States	CHS Inc.	United States	Completed	2,800	Fertilizers & Agricultural Chemicals
07/13/15	ALENT plc	United Kingdom	MacDermid Performance Acquisitions Ltd.	United Kingdom	Completed	2,131	Specialty Chemicals
10/30/15	Samsung SDI Co. Ltd.-Chemical Business	South Korea	Lotte Chemical Corp.	South Korea	Completed	2,040	Specialty Chemicals

Top 10 Chemicals Deals 2014

Announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Deal value*	Category
07/15/14	Rockwood Holdings Inc.	United States	Albemarle Corp.	United States	Completed	6,328	Specialty Chemicals
10/20/14	Arysta Lifescience Ltd.	Ireland-Rep	Platform Specialty Products Corp.	United States	Completed	3,521	Fertilizers & Agricultural Chemicals
12/08/14	Schenker-Winkler Holding AG	Switzerland	Cie de Saint-Gobain SA	France	Pending	2,817	Specialty Chemicals
09/11/14	Taminco Corp.	United States	Eastman Chemical Co.	United States	Completed	2,730	Commodity Chemicals
06/30/14	Consorcio Comex SA de CV	Mexico	PPG Industries Inc.	United States	Completed	2,298	Specialty Chemicals
09/19/14	Bostik SA	France	Arkema SA	France	Completed	2,232	Specialty Chemicals
09/08/14	Cheminova A/S	Denmark	FMC Corp.	United States	Completed	1,819	Fertilizers & Agricultural Chemicals
02/18/14	Ashland Water Technologies Inc.	United States	Clayton Dubilier & Rice LLC	United States	Completed	1,800	Diversified & Other
12/22/14	Golmud Possession Grid Potash Co. Ltd.	China	Jingyuan Holding Co. Ltd.	China	Completed	1,602	Fertilizers & Agricultural Chemicals
06/30/14	Styrolution Group GmbH	Germany	Ineos Industries Holdings Ltd.	United Kingdom	Completed	1,506	Commodity Chemicals

* In \$US millions

Source: Thomson Reuters and other publicly available sources

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About PwC

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Smart deal makers are perceptive enough to see value others have missed, flexible enough to adjust for the unexpected, aggressive enough to win favorable terms in a competitive environment, and circumspect enough to envision the challenges they will face from the moment the contract is signed. But in a business environment where information can quickly overwhelm, the smartest deal makers look to experienced advisors to help them fashion a deal that works.

PwC's Deals group can advise chemicals companies and chemicals-focused private equity firms on key M&A decisions, from identifying acquisition or divestiture candidates and performing detailed buy-side diligence, to developing strategies for capturing post-deal profits and exiting a deal through a sale, carve-out, or IPO. With more than 9,800 deals professionals in 75 countries, we can deploy seasoned teams that combine chemicals industry skills with local market knowledge virtually anywhere and everywhere your company operates or executes transactions.

Although every deal is unique, most will benefit from the broad experience we bring to delivering strategic M&A advice, due diligence, transaction structuring, M&A tax, merger integration, valuation, and post-deal services.

In short, we offer integrated solutions, tailored to your particular deal situation and designed to help you extract peak value within your risk profile. Whether your focus is deploying capital through an acquisition or joint venture, raising capital through an IPO or private placement, or harvesting an investment through the divestiture process, we can help.

For more information about M&A and related services in the global chemicals industry, please visit www.pwc.com/us/deals or www.pwc.com/us

About the data

The information presented in this report is an analysis of deals in the global chemicals industry. Deal information was sourced from Thomson Reuters and includes deals for which targets have an SIC code that falls into chemicals mid-industry group. Certain adjustments have been made to the information to exclude transactions which are not specific to chemicals or incorporate relevant transactions that were omitted from the SIC industry codes.

This analysis includes all individual mergers, acquisitions, and divestitures for disclosed or undisclosed values, leveraged buyouts, privatizations, minority stake purchases, and acquisitions of remaining interest announced between January 1, 2013 and December 31, 2016, with a deal status of completed, intended, partially completed, pending, pending regulatory, pending completion, withdrawn, and unconditional (i.e., initial conditions set forth by the buyer have been met but deal has not been withdrawn and excludes all rumors and seeking buyers). Additionally, transactions that are spin-offs through distribution to existing shareholders are included.

Percentages and values are rounded to the nearest whole number which may result in minor differences when summing totals.