

Market Update

Chemicals Group

Q1 2016



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Sources:

Bloomberg; Capital IQ; Mergermarket; FactSet MergerStat; Federal Reserve; Baker & McKenzie; Herbert Smith Freehills; FT Remark; A.T. Kearney; analyst reports; press releases; public filings

Global Chemicals M&A Activity in 2016

In early 2016, global M&A activity cooled down from a record year of deal-making in 2015 given investor uncertainty related to a number of macroeconomic, geopolitical and financial factors, including the continued slowdown in China, slump in global commodity prices, risk of a Brexit, political turmoil in Brazil and ongoing volatility in global equity and capital markets.

Whereas the last three quarters of 2015 each boasted deal activity of more than \$1 trillion, deal values barely exceeded \$600 billion in Q1 2016, marking the lowest first quarter in two years. Indeed, total deal value in Q1 2016 was nearly 23% below the value in the same period last year.

Cross-border M&A activity also showed a tepid start to 2016 following a record final quarter in 2015. According to the Baker & McKenzie Cross-Border M&A Index, which measures quarterly deal activity using a baseline score of 100 points, Q1 2016 dropped to a score of 213 points from a high of 358 points in Q4 2015. But, compared to Q1 2015, the index showed a slight increase of seven points in Q1 2016, as 1,202 cross-border transactions were announced worth a total value of \$324 billion, representing a 10% drop in volume, but a 14% rise in value over the same period last year. China-based acquirers were particularly active this past quarter. North American acquirers also drove deal volume, particularly in the Eurozone, as investors saw opportunities stemming from a weaker euro, with 148 deals totaling \$47.1 billion announced over the course of the quarter, representing around one-fifth of all cross-border deals by volume and value.

Based on surveys from FT Remark, Mergermarket, and Herbert Smith Freehills, it appears that the short to medium-term outlook for M&A remains strong. Market volatility has not dampened buyer appetite, and in some cases, has made investors keener to pursue M&A activity in the near future. Further, strategics continue to prioritize significant amounts of capital for M&A, especially cross-border deals. That being said, based on the survey, it appears that international M&A will likely occur in neighboring countries or regions. Challenges include regulatory barriers and valuation gaps between buyer and seller.

Globally, the Industrials & Chemicals sector was the top segment by deal value, with 661 transactions worth over \$145 billion. It was driven by four mega-deals with a combined value of \$85 billion, including this quarter's

lead transaction involving China National Chemical Corporation's \$45.9 billion bid for Switzerland's Syngenta AG.

The outlook for the sector looks quite strong as well. According to a report by A.T. Kearney, 2016 is expected to be an exceptional year for chemicals M&A, particularly agrochemicals, including the largest deal in the industry's history – the proposed \$130 billion merger of Dow and DuPont. Large players in emerging markets, particularly China, are engaging in a global search for operational knowhow, innovation and growth opportunities, as home markets slow. Activist shareholders have continued to challenge the traditional diversified conglomerate model and press companies to develop a more coherent, mutually reinforcing portfolio structure. Commodity chemicals companies, for instance, will likely concentrate on securing low-cost feedstock and building asset scale; specialty chemicals players will focus on driving their value-added solutions-based businesses. Divestitures of non-core businesses following mega-mergers, such as that between Dow and DuPont, will create significant acquisition opportunities for middle-market PE firms and specialty chemicals producers. For instance, Dow and DuPont plan to spin off three independent entities in agrochemicals, materials sciences and specialty chemicals in order to secure anti-trust regulatory approval. Other large conglomerates as well are rumored to be pursuing unprecedented mergers and divestitures. As a result, deal flow in the middle-market chemicals sector for at least the next couple years is expected to continue to remain robust.

In the U.S., low-cost natural gas and crude oil, along with low-cost feedstock, will continue to advantage petrochemical producers. Further, planned new capacity additions for basic chemical feedstocks (e.g., ethylene, propylene, methanol, benzene, chlorine and para-xylene) of 25 million m.t. in the U.S. in 2016 and 8 million m.t. in China will continue to drive down basic chemicals prices, advantaging specialty chemicals producers and giving them renewed appetite and financial wherewithal for opportunistic M&A plays. While the specialty chemicals sector has consolidated to a modest degree over the past decade, there are a plethora of middle-market companies that present potential platform or portfolio add-on acquisition opportunities to private equity sponsors or consolidation plays for larger strategics, particularly in coatings, adhesives, sealants, elastomers and surfactants.



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Notes:

This section reflects the views of Richard O'Reilly, CFA, who writes for Revere Associates. Mr. O'Reilly is not employed or compensated by Lincoln International, and the views set forth in this section are those of Mr. O'Reilly and should not be assumed to reflect the views of Lincoln International.

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Tepid Q1 2016 Chemicals Industry Results

Guest Columnist

Based on prevailing economic and industry reports, we believe business conditions for the U.S. chemicals industry remained challenging during Q1 2016. The domestic manufacturing sector remained sluggish in Q1, with such headwinds as the continued strong U.S. dollar, adversely affecting results, albeit U.S. construction and automotive markets remained healthy.

The chemicals industry reported mixed results, and many companies provided cautious guidance for the rest of 2016. While declines in selling prices for major petrochemicals and plastics negatively impacted, to various degrees, makers of basic chemicals and plastics, margins in Q1 for downstream and specialty chemicals producers, such as paint makers, were generally helped by lower prices for their input materials versus the year prior period. Fertilizer and pesticide producers faced challenging markets due to low crop prices. The American Chemistry Council (ACC) reported that its Chemicals Activity Barometer (CAB), a leading macroeconomic indicator based on chemicals industry data, on a three-month moving average basis, rose just slightly in March following a decline in February. While the index remained above the year prior level, the ACC noted that it showed a marked deceleration in growth in activity from a year ago. We believe that the global manufacturing sector, the most important market for the chemicals industry, exhibited tepid growth during Q1, according to monthly global PMI business surveys. The U.S. manufacturing sector also appeared to struggle through most of Q1. According to the Institute for Supply Management's reports on manufacturing activity, monthly U.S. manufacturing activity in March expanded for only the first time since August 2015. Lackluster performance in the manufacturing sector has been attributed to a combination of a stronger U.S. dollar, declining commodity prices and slowing foreign economies. The Federal Reserve Board reported that output for Q1 improved slightly, reversing a small decrease reported for Q4 2015. The ISM reports for Q1 indicated that the U.S. chemical products industry showed growth in both February and March after indicating a contraction in January. Railcar loadings suggest that the pace of growth of shipments improved in Q1 for the chemicals industry. According to the Association of American Railroads, U.S. chemicals railroad carloads for Q1 increased 3.2% from the year earlier period, including a 5.5% rise in March alone. This growth is a positive sign compared to

2015 when rail shipments increased only 0.4% for the full year. Railroads carry ~30% of industry shipments.

Selling prices initially declined in Q1, especially for petrochemicals and plastics, but prices began to recover along with the rebound in oil prices. The domestic monthly contract prices for ethylene, the largest volume petrochemical monomer, in Q1 2016 averaged 3% lower versus Q4 2015 and ~23% less than Q1 2015. The monthly price in January 2016 was the lowest since 2003 and 50%+ lower than in September 2014. The monthly price then rose for the rest of Q1 to the highest since last summer, and an increase in April is possible due to greater likelihood of supply shortages. Ethane, a major raw material for U.S. makers of ethylene, averaged modestly lower prices in Q1 than during 2015, helping to partly offset the negative impact on ethylene margins from the decline in selling prices. Domestic prices for major derivative plastics were also lower during Q1, but prices stabilized as the quarter ended. Polyethylene prices declined for each of the first two months of 2016, then rebounded in March. But, resin prices remained below 2015 levels. Prices most likely will increase during Q2 on higher monomer prices. Polyethylene makers include Dow, LyondellBasell, and Westlake Chemical. Polyvinyl chloride prices, which eased during Q4, strengthened in March on improving seasonal demand and higher ethylene costs, and producers have announced additional price increases for Q2 2016. Vinyl producers include Axiall and Westlake Chemical. Contract prices for propylene, the second largest volume monomer, were relatively stable during Q1 following declines for most of 2015. Contract prices for propylene, the second largest volume monomer, sequentially were only about 1% lower on average, but almost 40% less than in the year prior quarter. We expect Q2 prices to remain relatively low. Lower prices for propylene are resulting in reduced prices for derivatives products to buyers, such as paint makers (including Sherwin-Williams, PPG, Axalta, and Valspar). We believe that caustic soda contract prices continued to erode during Q1, a trend similar to much of 2015. Producers will again try to push a price increase during Q2 2016. Chlorine prices during Q1 were similar to those during the second half of 2015, but were higher versus Q1 2015. We believe that a portion of a price increase proposed for Q2 2016 may be achieved. Olin and Axiall are major chlor-alkali makers.

It was a busy quarter of deal-making for the chemicals sector in Q1 2016. Globally, there were 171 chemicals M&A transactions announced or closed in Q1 2016.

In terms of deals with disclosed values, there were 8 large-cap transactions, defined as those over \$500 million in TEV. Selected notable large-cap transactions announced or closed this past quarter are shown on the right.

There were 51 chemicals deals with disclosed values in the middle market, defined as transactions under \$500 million in TEV. Selected middle-market chemicals transactions that were announced or closed this past quarter are shown on the right.

There were 112 chemicals deals for which transaction values were undisclosed.

Sources:

Bloomberg; Capital IQ; Mergermarket; FactSet MergerStat; Federal Reserve; analyst reports; press releases; public filings

Q1 2016 Market Commentary and Selected Transactions

Large-Cap Transactions

- In February 3, 2016, **China National Chemical Corporation** entered into a definitive agreement to acquire **Syngenta AG (VTX:SYNN)** for \$45.9 billion, representing a 16.5x 2015 EBITDA and 3.4x revenue multiple. Syngenta AG is a Swiss-based biotech company. This transaction was, by far, the largest deal of the quarter.
- On February 17, 2016, **Akzo Nobel (ENXTAM:AKZA)** signed a general agreement to acquire **BASF's Global Industrial Coatings Business** for \$531.8 million, representing a 1.6x 2015 revenue multiple. BASF's industrial

coatings business supplies products for coil, furniture foil and panel coatings, as well as coatings for wind energy plants, general industry and commercial transport.

- On March 20, 2016, **The Sherwin-Williams Company (NYSE:SHW)** entered into a definitive agreement to acquire **The Valspar Corporation (NYSE:VAL)** from a consortium of investors for \$10.8 billion in cash, representing a 14.6x LTM EBITDA and 2.5x revenue multiple. The Valspar Corporation manufactures coatings, paint and related products.

Middle-Market Transactions

- On February 1, 2016, **Balchem Corporation (NASDAQGS:BCPC)** agreed to acquire **Albion Laboratories** from a consortium of investors for \$111.5 million in cash, representing a 10.7x 2015 EBITDA and 2.1x revenue multiple. Albion Laboratories develops nutritional and mineral products for animals, plants and humans.
- On February 24, 2016, **Owens Corning (NYSE:OC)** agreed to acquire **InterWrap** from Quad-C Management for \$450 million, representing a 1.8x 2015 revenue multiple. InterWrap manufactures extrusion coated wovens and diverse multi-layer laminated substrates for packaging purposes.
- On March 16, 2016, **INEOS AG** agreed to acquire **INOVYN ChlorVinyls Limited** from **Solvay SA (ENXTBR:SOLB)** for \$371 million in cash. INOVYN ChlorVinyls manufactures vinyl, chlorine, caustic soda, caustic potash, chlor-alkali, allyl chloride, chloromethane, chlorinated paraffin, epichlorohydrin and other chemicals.
- On March 20, 2016, **Synthomer plc (LSE:SYNT)** signed an agreement to acquire **Hexion's Performance Adhesives & Coatings Division** for ~\$226 million. Hexion's Performance

Adhesives & Coatings develops dispersions, additives, powder coatings and specialty monomers.

- On April 4, 2016, **Centerbridge Parts** acquired **Prestone Products Corporation** from **Rank Group Investments** for \$230 million in cash, representing a 6.1x 2015 EBITDA multiple. Prestone Products Corporation manufactures and markets antifreeze and other automotive performance chemical products.

Of the 171 chemicals transactions, ~41% involved targets in North America, ~29% were in Europe, ~25% were in Asia Pacific, ~5% were in Latin America and <1% were in Africa and the Middle East. The most active buyers, by number of transactions, were Arsenal Capital Partners and Quantum Plastics, LLC, each with three closed or announced transactions in the quarter. CJ Cheiljedang Corporation (KOSE:A097950), Coral Products plc (AIM:CRU), Dorf-Ketal Chemicals India Private Limited, Flint Group S.A., and Royal Adhesives & Sealants, LLC each had two announced or closed deals in the quarter. Among deals with disclosed terms, the average TEV / revenue was 1.3x, and the average TEV / EBITDA was 18.2x. For publicly traded companies, the average month prior premium, average week prior premium, and average day prior premium was 31.4%, 24.5%, and 22.4%, respectively.

Notes:

(1) LI Specialty Chemicals Index includes A. Schulman, Inc.; Air Liquide SA; Air Products and Chemicals, Inc.; Airgas, Inc.; Albemarle Corporation; Ashland Inc.; Cabot Corporation; Cambrex Corporation; Celanese Corporation; Chugoku Marine Paints, Ltd.; Clariant AG; Ecolab Inc.; Elementis plc; Evonik Industries AG; Ferro Corporation; Givaudan SA; H.B. Fuller Co.; Hitachi Chemical Co. Ltd.; International Flavors & Fragrances Inc.; Kansai Paint Co. Ltd.; Linde Aktiengesellschaft; NewMarket Corporation; Nippon Pain Holdings Co., Ltd.; Novozymes A/S; OPolyOne Corporation; PPG Industries, Inc.; RPM International Inc.; Sanyo Chemical Industries Ltd.; Sensient Technologies Corporation; Shenzhen Capchem Technology Co., Ltd.; Symrise AG; The Valspar Corporation; Wacker Chemie AG; W.R. Grace & Co.; and Zhejiang Transfar Co., Ltd.

(2) LI Diversified Chemicals Index includes 3M Company; Akzo Nobel N.V.; Arkema S.A.; BASF SE; The Dow Chemical Company; E.I. du Pont de Nemours and Company; Eastman Chemical Co.; FMC Corp.; Hubei Yihua Chemical Industry Co., Ltd.; Huntsman Corporation; Kemira Oyj; Lanxess AG; Mitsubishi Chemical Holdings Corporation; Monsanto Company; Olin Corp.; Pidilite Industries Limited; SK Chemicals Co., Ltd.; Solvay SA; Tangshan Sanyou Chemical Industries Co., Ltd.; UPL Limited; and Xinjiang Zhongtai Chemical Co., Ltd.

(3) Large-cap group includes companies in the LI Specialty Chemicals Index with \$5.0 billion or greater in market capitalization

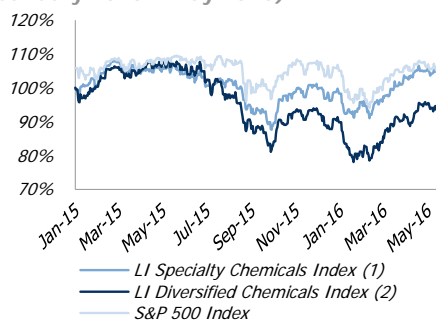
(4) Small-cap group includes companies in the LI Specialty Chemicals Index with less than \$5.0 billion in market capitalization

(5) LI Chemicals Index includes both the LI Specialty Chemicals and LI Diversified Chemicals indices; Lincoln estimates provided for chemicals companies in the index that have not yet published Q1 2016 results

Q1 2016 Key Chemicals Market Statistics

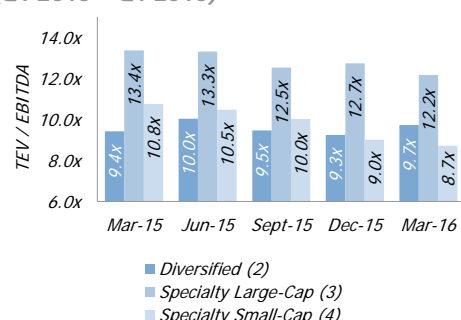
Chemicals Public Market Performance

(January 2015 – May 2016)



TEV / EBITDA Multiples

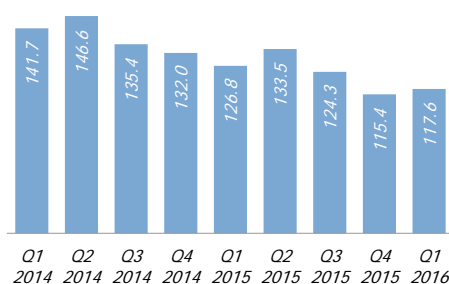
(Q1 2015 – Q1 2016)



LI Chemicals Index - Revenue ⁽⁵⁾

(Q1 2014 – Q1 2016)

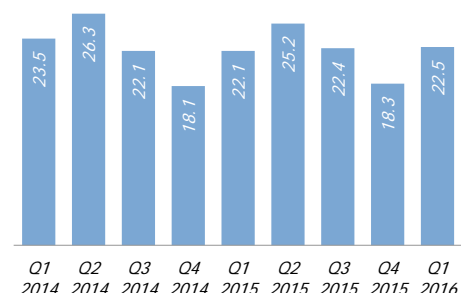
(\$ in billions)



LI Chemicals Index - EBITDA ⁽⁵⁾

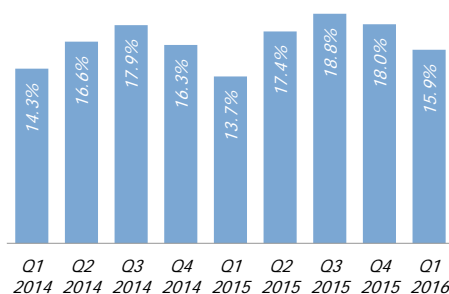
(Q1 2014 – Q1 2016)

(\$ in billions)



LI Chemicals Index - EBITDA Margins ⁽⁵⁾

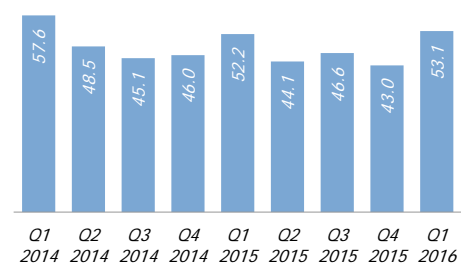
(Q1 2014 – Q1 2016)



LI Chemicals Index - Cash on Balance Sheet ⁽⁵⁾

(Q1 2014 – Q1 2016)

(\$ in billions)





Highlighted Lincoln International Chemicals Transaction

Lincoln International Represents Vivimed Labs in the Divestiture of Part of Its Specialty Chemicals Business to Clariant AG

Lincoln International LLC ("Lincoln International"), a leading global middle-market investment bank, represented Vivimed Labs ("Vivimed Labs") in the transfer and sale of identified products within its Specialty Chemicals business (the "Business"), to Clariant Chemicals (India) Limited, a fully owned subsidiary of Clariant AG (collectively "Clariant") for ₹3,800 million (\$58.5 million).

Headquartered in Hyderabad, India, the Business includes the sale of associated trademarks and assets in the personal care portfolio catering to the sun, skin, hair and oral care range as well as anti-microbial preservatives.

Lincoln International acted as the exclusive financial advisor to Vivimed Labs in this

transaction. Lincoln's role included providing M&A advisory expertise, preparing marketing materials, co-ordinating with Clariant in India, Singapore and its headquarters in Switzerland, managing due diligence and assisting in the final negotiation phases of the transaction.

About Vivimed Labs

Vivimed Labs, based in Hyderabad, India, is a successful and reputable international brand in the pharmaceuticals and specialty chemicals sector, with 12 manufacturing facilities across three continents. Vivimed Labs is a preferred partner for global and Indian brands given its innovation-led strategy driven by five R&D centers worldwide. More information about Vivimed Labs can be obtained at www.vivimedlabs.com.

Notes:

Represents all chemicals-related sell-side M&A transactions announced or closed in Q1 2016, as recorded by Mergermarket; excludes accounting firms and M&A networks (e.g., M&A International)

Source:

Mergermarket

Lincoln International Tops the League Tables by Deal Count in the Industrials & Chemicals Segment in Q1 2016

Rank	Investment Bank	# Deals
#1	Lincoln International	11
#2	Barclays	10
#3	Nomura Holdings	9
#3	Rothschild	9
#4	Goldman Sachs	8

Global Industry Groups

Aerospace & Defense
Automotive & Truck
Building & Infrastructure
Business Services
Chemicals
Consumer
Distribution
Electronics
Energy & Power
Financial Institutions
Food & Beverage
Healthcare
Industrials
Packaging
Technology & Media

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Beijing
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Frankfurt
London
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Madrid
Milan
Moscow
Mumbai
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Paris
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Tokyo
Vienna
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Valuations & Opinions
Special Situations

About Lincoln International

Lincoln International specializes in merger & acquisition advisory services, debt advisory services, private capital raising and restructuring advice on mid-market transactions. Lincoln International also provides fairness opinions, valuations and pension advisory services on a wide range of transaction sizes. With sixteen offices in the Americas, Asia and Europe, Lincoln International has strong local knowledge and contacts in key global economies. The firm provides clients with senior-level attention, in-depth industry expertise and integrated resources. By being focused and independent, Lincoln International serves its clients without conflicts of interest. More information about Lincoln International can be obtained at www.lincolninternational.com.

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