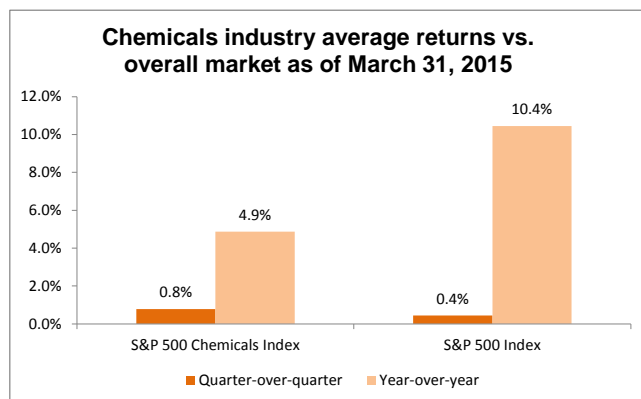


PwC Chemicals Valuation Quarterly Update Q1 2015

Industrial Products Industry - Chemicals Valuation Quarterly Update (Q1 2015)

Recent Market Trends & Developments



Notable metrics in Q1 2015 for the largest chemicals companies

Change in market capitalization

Quarter-over-quarter		Year-over-year	
Average	Median	Average	Median
3.4%	5.2%	2.7%	1.6%

Average EV/EBITDA multiple

As of 3/31/2015	Quarter-over-quarter change	Year-over-year change
12.1	2.6%	7.6%

- 17 of the top 25 constituents of the chemicals industry, based on market capitalization, saw increases in market capitalization during the first quarter of 2015.
- 13 of the top 25 constituents of the chemicals industry saw increases in market capitalization for the year ended March 31, 2015.
- BASF SE experienced the largest increase in market capitalization over the last quarter with an increase of 17.2 percent.
- Sigma-Aldrich Corporation experienced the largest increase in market capitalization over the last year with an increase of 48.9 percent.
- Overall, the top constituents of the chemicals industry experienced average and median increases in market capitalization over the last year of 2.7 and 1.6 percent, respectively.
- The three largest transactions involving public acquirers announced during the first quarter of 2015 included the following:
 - Rock-Tenn Company's acquisition of MeadWestvaco Corporation;
 - Olin Corp.'s acquisition of The Dow Chemical Company, Chlor-Alkali and Downstream Derivatives Businesses; and
 - Double Coin Holdings Ltd.'s acquisition of Stakes in Seven Companies from the Shanghai Huayi (Group) Company.

Recent Developments:

- According to PwC's Chemicals Compounds May 2015 M&A review, there was a decline in deal volume and value in the first quarter, year over year. However, average deal value grew sequentially throughout the quarter, thanks to four megadeals (deals valued at \$1 billion or more), which represented 62 percent in total of the quarter's deal value. The average deal value for the quarter was \$416 million.
- In the first quarter of 2015, Asia and Oceania led globally in deal volume. The region was involved in 31 deals, valued at approximately \$6.5 billion. China-based companies were the key driver of Asian deal activity, as 24 deals were local market. North America led deal value globally, as the United States accounted for \$10.6 billion of deal value.
- According to PwC's 2015 Global CEO Survey, chemicals CEOs are in broad agreement with counterparts in other sectors with 38.0 percent of CEOs believing the global economy will improve over the next twelve months. Most are looking to the US and China to generate this growth.
- Chemicals CEOs surveyed also identified over-regulation and high or volatile energy costs as key concerns.
- 72.0 percent of chemicals CEOs (compared to 61.0 percent of CEOs across all industries) think there are more growth opportunities than there were three years ago.

Exhibits in This Quarterly Update

Market metrics of the largest global chemicals companies
 Market metrics of the largest chemicals companies by region
 Summary metrics of recent transactions

Citations

2015 PwC Global CEO Survey
 PwC study, Chemical compounds, May 2015

<http://www.pwc.com/gx/en/ceo-survey/2015/industry/assets/ceo-survey-2015-industry-snapshot-chemicals.pdf>
http://www.pwc.com/en_US/us/industrial-products/publications/assets/pwc-chemicals-industry-mergers-acquisitions-q1-2015.pdf



Industrial Products Industry - Chemicals Valuation Quarterly Update

Top Chemicals Companies (1)

Company	Market Capitalization			Price/Earnings (LTM)			Enterprise Value/Revenue (LTM)			Enterprise Value/EBITDA (LTM)		
	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015
BASF SE	102,079.9	78,054.3	91,517.3	20.0x	16.4x	22.0x	1.2x	1.1x	1.3x	8.8x	7.7x	9.8x
E. I. du Pont de Nemours and Company	61,482.1	66,985.7	64,748.0	25.0x	24.3x	21.4x	1.8x	2.1x	2.0x	11.0x	12.0x	10.9x
Saudi Basic Industries Corporation	93,987.5	66,751.9	63,939.5	30.2x	21.2x	21.9x	2.2x	1.6x	1.6x	7.3x	5.5x	5.6x
The Dow Chemical Company	58,768.9	53,754.2	55,274.1	22.2x	17.0x	17.2x	1.3x	1.2x	1.3x	9.2x	8.1x	8.2x
Monsanto Company	59,718.9	57,775.9	54,424.6	28.6x	26.2x	25.3x	3.9x	4.0x	3.6x	13.7x	13.2x	12.0x
L'Air Liquide SA	42,223.1	42,876.5	44,238.7	23.1x	26.6x	28.8x	2.4x	2.8x	3.1x	10.0x	11.6x	12.4x
LyondellBasell Industries N.V.	48,292.2	39,748.0	41,880.4	16.2x	11.7x	12.8x	1.1x	0.9x	1.0x	8.0x	6.2x	6.7x
Linde Aktiengesellschaft	37,194.0	34,635.9	37,779.3	27.9x	29.5x	35.1x	2.2x	2.3x	2.6x	9.6x	10.3x	11.9x
Praxair Inc.	38,432.5	37,750.3	34,847.0	26.8x	24.8x	24.0x	3.9x	3.8x	3.5x	12.3x	12.0x	10.8x
Ecolab Inc.	32,492.7	31,368.1	34,010.9	35.1x	30.2x	32.0x	3.0x	2.7x	2.8x	15.1x	13.3x	13.9x
Air Products & Chemicals Inc.	25,197.5	30,823.5	32,415.4	26.6x	29.7x	30.1x	3.1x	3.5x	3.7x	11.9x	13.5x	13.7x
Syngenta AG	34,707.0	29,504.4	31,234.4	26.4x	26.5x	23.4x	2.5x	2.5x	2.2x	12.7x	13.0x	11.2x
PPG Industries, Inc.	26,796.4	31,721.9	30,684.8	29.8x	28.2x	32.9x	1.9x	2.0x	2.2x	12.6x	12.6x	13.9x
Shin-Etsu Chemical Co., Ltd.	24,362.6	27,954.9	27,859.7	22.2x	29.1x	27.8x	1.8x	2.3x	2.2x	8.0x	9.9x	9.7x
The Sherwin-Williams Company	19,735.7	25,251.3	26,997.6	29.8x	34.5x	36.4x	2.0x	2.4x	2.5x	15.5x	17.8x	18.9x
Potash Corporation of Saskatchewan Inc.	30,866.6	29,426.5	26,819.8	21.3x	25.5x	21.8x	5.3x	5.6x	5.1x	11.2x	12.9x	11.4x
Akzo Nobel NV	19,571.2	16,930.8	18,354.9	38.9x	32.8x	33.7x	1.1x	1.1x	1.3x	10.8x	10.4x	11.3x
Nan Ya Plastics Corporation	16,805.5	16,366.0	17,618.4	26.5x	24.7x	31.0x	2.0x	1.9x	1.9x	14.2x	12.7x	14.2x
The Mosaic Company	19,942.5	16,950.6	16,850.8	34.4x	46.6x	18.9x	2.2x	2.0x	2.0x	10.5x	12.4x	8.0x
Givaudan SA	14,212.4	16,616.2	16,677.9	34.6x	45.0x	41.3x	3.0x	4.1x	3.8x	15.4x	19.8x	18.8x
Evonik Industries AG	18,312.5	15,511.7	16,656.1	20.7x	29.5x	26.1x	1.0x	1.0x	1.2x	8.8x	9.7x	8.9x
Sigma-Aldrich Corporation	11,094.7	16,348.3	16,515.3	26.6x	37.4x	37.3x	4.0x	5.7x	5.7x	13.0x	18.6x	18.8x
Formosa Plastics Corporation	15,936.3	14,500.4	15,443.8	33.7x	29.9x	43.2x	2.4x	2.2x	2.3x	16.9x	16.4x	21.7x
Agrium Inc.	14,060.9	13,651.0	15,011.7	16.5x	21.0x	26.0x	1.1x	1.1x	1.3x	8.7x	10.3x	12.5x
Yara International ASA	12,237.1	12,292.0	14,018.1	16.1x	18.7x	18.4x	0.9x	1.1x	1.4x	6.1x	7.5x	8.2x
Average	35,140.4	32,942.0	33,832.7	26.4x	27.5x	27.6x	2.3x	2.4x	2.5x	11.3x	11.9x	12.1x
Median	26,796.4	29,504.4	30,684.8	26.6x	26.6x	26.1x	2.2x	2.2x	2.2x	11.0x	12.0x	11.4x

Notes:

(1) Market data provided by Capital IQ, Inc. Selected companies represent the largest global companies in the chemicals industry based on market capitalization.

Industrial Products Industry - Chemicals Valuation Quarterly Update (continued)

Top Chemicals Companies - Americas (1)

Company	Market Capitalization			Price/Earnings (LTM)			Enterprise Value/Revenue (LTM)			Enterprise Value/EBITDA (LTM)		
	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015
E. I. du Pont de Nemours and Company	61,482.1	66,985.7	64,748.0	25.0x	24.3x	21.4x	1.8x	2.1x	2.0x	11.0x	12.0x	10.9x
The Dow Chemical Company	58,768.9	53,754.2	55,274.1	22.2x	17.0x	17.2x	1.3x	1.2x	1.3x	9.2x	8.1x	8.2x
Monsanto Company	59,718.9	57,775.9	54,424.6	28.6x	26.2x	25.3x	3.9x	4.0x	3.6x	13.7x	13.2x	12.0x
Praxair Inc.	38,432.5	37,750.3	34,847.0	26.8x	24.8x	24.0x	3.9x	3.8x	3.5x	12.3x	12.0x	10.8x
Ecolab Inc.	32,492.7	31,368.1	34,010.9	35.1x	30.2x	32.0x	3.0x	2.7x	2.8x	15.1x	13.3x	13.9x
Air Products & Chemicals Inc.	25,197.5	30,823.5	32,415.4	26.6x	29.7x	30.1x	3.1x	3.5x	3.7x	11.9x	13.5x	13.7x
PPG Industries, Inc.	26,796.4	31,721.9	30,684.8	29.8x	28.2x	32.9x	1.9x	2.0x	2.2x	12.6x	12.6x	13.9x
The Sherwin-Williams Company	19,735.7	25,251.3	26,997.6	29.8x	34.5x	36.4x	2.0x	2.4x	2.5x	15.5x	17.8x	18.9x
Potash Corporation of Saskatchewan Inc.	30,866.6	29,426.5	26,819.8	21.3x	25.5x	21.8x	5.3x	5.6x	5.1x	11.2x	12.9x	11.4x
The Mosaic Company	19,942.5	16,950.6	16,850.8	34.4x	46.6x	18.9x	2.2x	2.2x	2.0x	10.5x	12.4x	8.0x
Average	37,343.4	38,180.8	37,707.3	28.0x	28.7x	26.0x	2.8x	3.0x	2.9x	12.3x	12.8x	12.2x
Median	31,679.6	31,545.0	33,213.1	27.7x	27.2x	24.7x	2.6x	2.5x	2.7x	12.1x	12.7x	11.7x

Top Chemicals Companies - Europe, Middle East, and Africa (1)

Company	Market Capitalization			Price/Earnings (LTM)			Enterprise Value/Revenue (LTM)			Enterprise Value/EBITDA (LTM)		
	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015
BASF SE	102,079.9	78,054.3	91,517.3	20.0x	16.4x	22.0x	1.2x	1.1x	1.3x	8.8x	7.7x	9.8x
Saudi Basic Industries Corporation	93,987.5	66,751.9	63,939.5	30.2x	21.2x	21.9x	2.2x	1.6x	1.6x	7.3x	5.5x	5.6x
L'Air Liquide SA	42,223.1	42,876.5	44,238.7	23.1x	26.6x	28.8x	2.4x	2.8x	3.1x	10.0x	11.6x	12.4x
LyondellBasell Industries N.V.	48,292.2	39,748.0	41,880.4	16.2x	11.7x	12.8x	1.1x	0.9x	1.0x	8.0x	6.2x	6.7x
Linde Aktiengesellschaft	37,194.0	34,635.9	37,779.3	27.9x	29.5x	35.1x	2.2x	2.3x	2.6x	9.6x	10.3x	11.9x
Syngenta AG	34,707.0	29,504.4	31,234.4	26.4x	26.5x	23.4x	2.5x	2.5x	2.2x	12.7x	13.0x	11.2x
Akzo Nobel NV	19,571.2	16,930.8	18,354.9	38.9x	32.8x	33.7x	1.1x	1.1x	1.3x	10.8x	10.4x	11.3x
Givaudan SA	14,212.4	16,616.2	16,677.9	34.6x	45.0x	41.3x	3.0x	4.1x	3.8x	15.4x	19.8x	18.8x
Evonik Industries AG	18,312.5	15,511.7	16,656.1	20.7x	29.5x	26.1x	1.0x	1.0x	1.2x	8.8x	9.7x	8.9x
Yara International ASA	12,237.1	12,292.0	14,018.1	16.1x	18.7x	18.4x	0.9x	1.1x	1.4x	6.1x	7.5x	8.2x
Average	42,281.7	35,292.2	37,629.7	25.4x	25.8x	26.4x	1.8x	1.8x	1.9x	9.7x	10.2x	10.5x
Median	35,950.5	32,070.2	34,506.9	24.8x	26.6x	24.7x	1.7x	1.4x	1.5x	9.2x	10.0x	10.5x

Top Chemicals Companies - Asia/Pacific (1)

Company	Market Capitalization			Price/Earnings (LTM)			Enterprise Value/Revenue (LTM)			Enterprise Value/EBITDA (LTM)		
	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015	3/31/2014	12/31/2014	3/31/2015
Shin-Etsu Chemical Co., Ltd.	24,362.6	27,954.9	27,859.7	22.2x	29.1x	27.8x	1.8x	2.3x	2.2x	8.0x	9.9x	9.7x
Nan Ya Plastics Corporation	16,805.5	16,366.0	17,618.4	26.5x	24.7x	31.0x	2.0x	1.9x	1.9x	14.2x	12.7x	14.2x
Formosa Plastics Corporation	15,936.3	14,500.4	15,443.8	33.7x	29.9x	43.2x	2.4x	2.2x	2.3x	16.9x	16.4x	21.7x
LG Chem, Ltd.	15,757.1	10,929.9	13,444.0	15.2x	12.8x	16.0x	0.8x	0.6x	0.7x	6.6x	5.3x	6.4x
Toray Industries, Inc.	10,791.5	12,916.9	13,413.5	19.4x	22.5x	22.4x	0.9x	1.2x	1.2x	9.2x	10.8x	10.6x
Formosa Chemicals & Fibre Corporation	14,145.4	12,322.7	13,413.0	24.8x	36.7x	NMF	1.3x	1.2x	1.3x	10.9x	13.1x	18.3x
Asahi Kasei Corporation	9,528.8	12,891.0	13,376.8	11.1x	17.3x	16.2x	0.7x	0.9x	0.9x	5.5x	7.4x	7.3x
Asian Paints Limited	8,748.4	11,406.7	12,409.0	N/A	NMF	NMF	N/A	N/A	N/A	N/A	N/A	N/A
Petronas Chemicals Group Berhad	16,933.7	12,469.6	12,183.1	22.3x	23.5x	23.0x	3.1x	2.5x	2.6x	8.3x	7.9x	7.8x
Nippon Paint Holdings Co., Ltd.	3,960.9	9,423.0	11,760.3	16.3x	33.9x	43.8x	1.6x	4.2x	5.4x	8.8x	21.7x	27.5x
Average	13,697.0	14,118.1	15,092.2	21.3x	25.6x	27.9x	1.6x	1.9x	2.1x	9.8x	11.7x	13.7x
Median	14,951.3	12,680.3	13,413.3	22.2x	24.7x	25.4x	1.6x	1.9x	1.9x	8.8x	10.8x	10.6x

Notes:

(1) Market data provided by Capital IQ, Inc. Selected companies represent the largest companies in the chemicals industry in each region based on market capitalization.



Industrial Products Industry - Chemicals Valuation Quarterly Update (continued)

Recent Transactions in the Chemicals Industry (1)

Acquirer	Target	Target Country	Announce Date	Close Date	Total transaction value	Implied enterprise value	Implied equity value	Implied EV / Revenue	Implied EV / EBITDA
Olin Corp.	The Dow Chemical Company, Chlor-Alkali and	United States	3/27/2015	Pending	5,105.0	5,105.0	4,230.0	0.0x	8.0x
Israel Chemicals Ltd.	Allana Potash Corp.	Canada	3/26/2015	Pending	109.6	124.9	130.4	0.0x	NM
Zibo Qixiang Tengda Chemical Co., Ltd	Shandong Qilu Keli Chemical Institute Co., Ltd.	China	3/25/2015	Pending	141.0	142.4	142.4	3.4x	N/A
Double Coin Holdings Ltd.	Stakes in Seven Companies	China	3/24/2015	Pending	1,877.0	1,877.0	1,877.0	0.0x	N/A
Kyokuto Boeki Kaisha, Ltd.	Eto Corporation	Japan	3/23/2015	Pending	52.9	104.0	104.0	0.8x	N/A
Qinghai Jinrun Mineral Development Co., Ltd	Guangxi Mingli Chemicals Co., Ltd.	China	3/17/2015	3/24/15	400.2	400.2	400.2	1.6x	N/A
A. Schulman, Inc.	Citadel Plastics Holdings, Inc.	United States	3/16/2015	Pending	800.0	800.0	768.0	1.5x	10.7x
Katakura Chikkarin Company Limited	Co-Op Chemical Co., Ltd.	Japan	2/17/2015	Pending	116.0	92.2	35.8	0.5x	15.9x
Grasim Industries Limited	Aditya Birla Chemicals (India) Limited	India	2/11/2015	Pending	235.9	234.2	89.4	1.3x	5.2x
Schweiter Technologies AG	Polycasa N.V.	Belgium	2/2/2015	3/31/15	136.0	136.0	-	0.7x	N/A
ALLETE, Inc.	U.S. Water Services, Inc.	United States	1/27/2015	2/10/15	168.0	193.1	193.1	1.6x	N/A
Rock-Tenn Company	MeadWestvaco Corporation	United States	1/26/2015	Pending	11,638.2	11,184.2	8,303.3	2.0x	11.5x
CoSine Communications Inc.	API Group plc	United Kingdom	1/22/2015	3/19/15	64.8	76.2	69.3	0.4x	5.9x
Synalloy Corporation	The Eastern Company	United States	1/9/2015	Pending	123.2	107.3	118.9	0.8x	7.1x
RPC Group plc	Promens hf.	Iceland	1/8/2015	2/20/15	476.5	476.5	278.9	0.0x	N/A
Pacific Ethanol, Inc.	Aventine Renewable Energy Holdings, Inc	United States	12/31/2014	Pending	413.9	380.6	190.2	0.6x	6.8x
Shenzhen Selen Science & Technology Co.,Ltd.	Shenzhen Wote Advanced Materials CO.,LTD.	China	12/23/2014	Pending	159.1	159.1	159.1	2.8x	N/A
Shenzhen Capchem Technology Co., Ltd.	Haisifu Chemical	China	12/23/2014	Pending	109.9	109.9	109.9	0.0x	N/A
Shenzhen Capchem Technology Co., Ltd.	Samming Hexafluor Chemicals CO., Ltd.	China	12/23/2014	5/20/15	109.9	109.9	109.9	2.9x	N/A
Hexpol AB (Publ)	RheTech, Inc.	United States	12/22/2014	1/19/15	112.0	112.0	112.0	1.0x	N/A

Average	1,117.5	1,096.2	871.1	1.1x	8.9x
Median	150.1	150.8	136.4	0.8x	7.5x

Purchase Price Allocation Benchmarking - Transactions in the Chemicals Industry

Allocation of Purchase Price As a Percentage of Excess Consideration (2) (3)									
Acquirer	Target	Closing Date	Purchase Price (\$ MM)	Goodwill	Total Intangible Assets	Trade names / trademarks	Customer relationships	Technology	Other
ALLETE, Inc.	U.S. Water Services, Inc.	10-Feb-2015	202.3	60.5%	39.5%	7.9%	28.6%	3.0%	0.0%
Rogers Corporation	Arlon, LLC	22-Jan-2015	158.1	63.1%	36.9%	1.2%	24.2%	11.7%	0.0%
Eastman Chemical Co.	Tamino	5-Dec-2014	2,765.0	60.1%	39.9%	0.0%	23.9%	8.2%	7.8%
Innospec Inc.	Independence Oilfield Chemicals	27-Oct-2014	191.8	58.0%	42.0%	3.9%	19.2%	0.0%	18.8%
Compass Minerals International Inc.	Wolf Trax Inc.	1-Apr-2014	86.1	54.6%	45.4%	14.3%	7.2%	3.6%	20.3%
W.R. Grace & Co.	Dow Chemical Company	2-Dec-2013	500.0	51.0%	49.0%	2.4%	2.1%	41.4%	3.1%
Jabil Circuit Inc.	Nypro	1-Jul-2013	665.0	63.1%	36.9%	13.4%	13.6%	9.9%	0.0%
Ecolab Inc.	Permian Mud Service, Inc.	10-Apr-2013	1,968.3	50.8%	49.2%	5.9%	41.4%	1.8%	0.0%
PolyOne Corporation	Spartech Corp	13-Mar-2013	391.8	77.5%	22.5%	0.0%	8.7%	13.8%	0.0%
Georgia Gulf Corporation	PPG Industries Inc.	28-Jan-2013	2,097.5	56.6%	43.4%	0.2%	41.1%	0.5%	1.5%
Rentech Nitrogen Partners, L.P.	Agrifos Fertilizer L.L.C.	1-Nov-2012	160.9	67.9%	32.1%	0.0%	0.0%	28.4%	3.7%
Cabot Corporation	Norit N.V.	31-Jul-2012	1,113.0	57.1%	42.9%	7.5%	15.7%	19.7%	0.0%
Eastman Chemical Co.	Solutia Inc.	2-Jul-2012	3,375.0	55.5%	44.5%	13.5%	20.1%	10.9%	0.0%
HB Fuller Co.	Forbo Holding AG	5-Mar-2012	404.7	52.6%	47.4%	8.4%	22.7%	16.2%	0.0%
PolyOne Corporation	ColorMatrix Corporation	21-Dec-2011	488.0	45.0%	55.0%	12.6%	24.9%	14.4%	3.2%
Average				58.2%	41.8%	6.1%	19.6%	12.2%	3.9%

Notes:

- (1) Includes recent acquisitions of chemicals companies with purchase price greater than or equal to \$50 million.
(2) Excess purchase price defined as total consideration less net tangible assets acquired.
(3) Purchase price and intangible asset percentages are based upon information obtained from acquirer's financial statements.



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