

# CHEMICAL INSIGHTS



## Water Treatment Chemicals

The chemical industry-focused investment bankers at Grace Matthews are often asked, “What sectors of specialty chemicals look attractive from a growth and investment perspective?” While we believe that specialties in general currently offer better investment opportunities than other sectors of the chemical industry, one area we see that is attracting a lot of interest from strategic and private equity investors is water treatment chemicals.

### Large, Growing Market with Strong Drivers

Water is a finite resource and, as the world’s population increases, the need for more ways to conserve global water resources is becoming critically important. Heightened regulatory and sustainability mandates have increased demand for water purification and wastewater treatment, providing opportunities for water treatment chemical manufacturers. Revenues for the global water treatment chemicals market have been estimated to be about \$23 billion annually, and studies estimate this market will continue to grow between 6% and 9% annually through 2017, which is more than twice the expected growth rate for U.S. GDP.

### Convergence of Oilfield and Water Treatment Chemicals

Notwithstanding the decline in crude oil prices that began in the summer of 2014, one of the main drivers of increased demand for water treatment chemicals in North America has been the resurgence of the oil and gas industry. One of the reasons we like water treatment is that it participates in the high-growth energy sector without direct commodity risk. Hydraulic fracturing, or “fracking” as it is more commonly known, is a technique used to release “tight” oil and gas trapped in shale formations. It is accomplished by injecting rock formations with a hydraulically pressurized drilling “mud” composed of water, sand, and chemicals. The process generates huge amounts of wastewater, which along with the water content in the oil itself, has to be treated before disposal to comply with environmental regulations. From a chemical supplier’s perspective, the chemicals used for oil extraction and the treatment of the resulting wastewater are fundamentally the same business. The potential synergies of combining downhole chemicals and chemicals to treat the resulting wastewater undoubtedly have been recognized by many large oil service and chemical firms, and they have been merging the two businesses. For example, in 2013 BASF merged its water, oilfield, and mining businesses; Ecolab formed Nalco Champion in 2013 following its acquisition of Champion Technologies (2013) and Nalco Holding Company (2011); and Lubrizol formed a new energy and water business that dramatically increased in size in late 2014 with its acquisition of Weatherford’s oilfield chemicals business.

Despite the consolidation activity of the major players, regional suppliers have maintained profitable market positions by offering customized solutions for water treatment that are unique to particular geographic areas. Because the levels of alkalinity, minerals, and contaminants vary between different oil/gas formations, and even between different wells within the formation, the most effective oilfield and water treatment chemicals for these applications are unique “cocktails” formulated for specific geologic locations. The success of these regional firms indicates that at its core, water treatment is a service business which is based on chemistry and backed up by a strong customer service component.

The same is true of industrial water treatment with respect to custom solutions. Similar to crude oil, the alkalinity and mineral content of water varies regionally. A chemical plant manager that wants to reduce scale build-up inside heat transfer pipes typically will not know the optimal chemical formulation that will keep the plant's boilers operating at peak efficiency, but a water chemical company service rep will be able to diagnose the issue, prescribe the correct chemical formulation, and solve the plant manager's problem. Going forward, the customer then relies on the service rep to take a more proactive approach. Instead of just maintaining equipment and limiting downtime, the water treatment chemical provider has the opportunity to increase performance and improve the efficiencies of their water treatment applications. This dynamic benefits both the chemical provider and the customer. The water treatment firm gets higher margins with a custom solution and the chance to develop a long-standing customer relationship.

The customer may pay a little more for the custom product, but saves money in the long-run because of lower maintenance costs, less down time, and improved operating efficiencies.



**Industrial boilers**

### Customer Service is Key to a Company's Value

The use of custom solutions in both the industrial water and the oil & gas markets highlights the importance of combining a strong product offering with a robust service component in the water treatment industry. In our experience, companies that do this well typically have “stickier” customer relationships and receive higher valuations in the marketplace. Both strategic and private equity acquirers view strong customer service as a key driver of value because it allows them to expand market and geographic reach with less risk. In essence, they are able to acquire not just a plant and collection of formulations, but also a portfolio of established customer relationships backed by experienced personnel with specialized market knowledge.

### Comparable M&A Transactions: Water Treatment Chemicals

Date	Acquirer / Target	Enterprise Value (\$millions)	Enterprise Value / Revenues	Enterprise Value / EBITDA	% Acquired
Mar 2015	One Rock Capital / Compass Chemical	-	-	-	Undisclosed equity investment
Jan 2015	ALLETE / U.S. Water Services	\$193.1	1.6x	-	Controlling position - 87% equity
Jan 2015	Ximax Environmental Solutions; Ximax Oil & Gas Solutions / SC Water Solutions	-	-	-	49% equity position
Oct 2014	SNF s.a.s. / OCI-SNF Company	\$175.6	-	-	Remaining 50% of OCI-SNF joint venture
Jul 2014	Nalco Holding / AKJ Industries, Chemical Division	-	-	-	100%
Jun 2014	Ardian / Italmatch Chemicals	-	-	-	Controlling position - 88% equity
Mar 2014	APTech Group / 21st Century Innovations	-	-	-	100%
Feb 2014	Clayton, Dubilier & Rice / Ashland Water Technologies (Solenis International)	\$1,790.0	1.1x	-	100% of operating assets
Feb 2014	Improchem Pty / Clariant Southern Africa's Water Treatment Business & Blendtech Pty	\$37.3	0.8x	-	100% of Clariant Southern Africa Water Treatment and 50% of Blendtech

## Comparable M&A Transactions: Water Treatment Chemicals (continued)

Date	Acquirer / Target	Enterprise Value (\$millions)	Enterprise Value / Revenues	Enterprise Value / EBITDA	% Acquired
Dec 2013	Chemtrade Logistics Income Fund / General Chemical Holding Company	\$860.0	2.2x	7.8x	100% of equity
Jul 2013	Picanol / Tessenderlo Chemie	\$1,144.7	0.4x	5.9x	32% equity position
May 2013	Degrémont / BASF Industrial Water Management France	-	-	-	100%
Apr 2013	Ecolab / AkzoNobel's Purate Business	-	-	-	100%
Mar 2013	The Pond Guy / Winston Company	-	-	-	100%
Jan 2013	Brenntag / ALTIVIA Corporation	\$125.0	1.5x	-	100%
Apr 2013	Ecolab / Champion Technologies	\$2,200	1.8x	-	100% of equity
Jun 2012	Improchem Pty / General Electric Company, Chemical and Monitoring Solutions Business	\$20.0	-	-	100%
Feb 2012	General Chemical Performance Products / Southern Water Consultants	-	-	-	100% of operating assets
Jul 2011	Lonza Group / Arch Chemicals	\$1,477.8	1.1x	10.5x	100% of equity
Jul 2011	Ecolab / Nalco Holding	\$8,116.0	1.8x	11.3x	100% of equity
Jun 2011	Berwind Corporation / BWA Water Additives UK Limited	\$300.1	2.1x	-	100%
May 2011	Carus Corporation / Sierra Chemical Company	-	-	-	100%
Apr 2011	AAC Capital Partners / Desotec	-	-	-	Undisclosed equity investment
Apr 2011	Aditya Birla Chemicals (India) Limited / Kanoria Chemicals & Industries, Chloro Chemicals Division	\$187.4	-	-	100%

Source: Capital IQ

## Grace Matthews Chemicals Index: Tracking the Trend

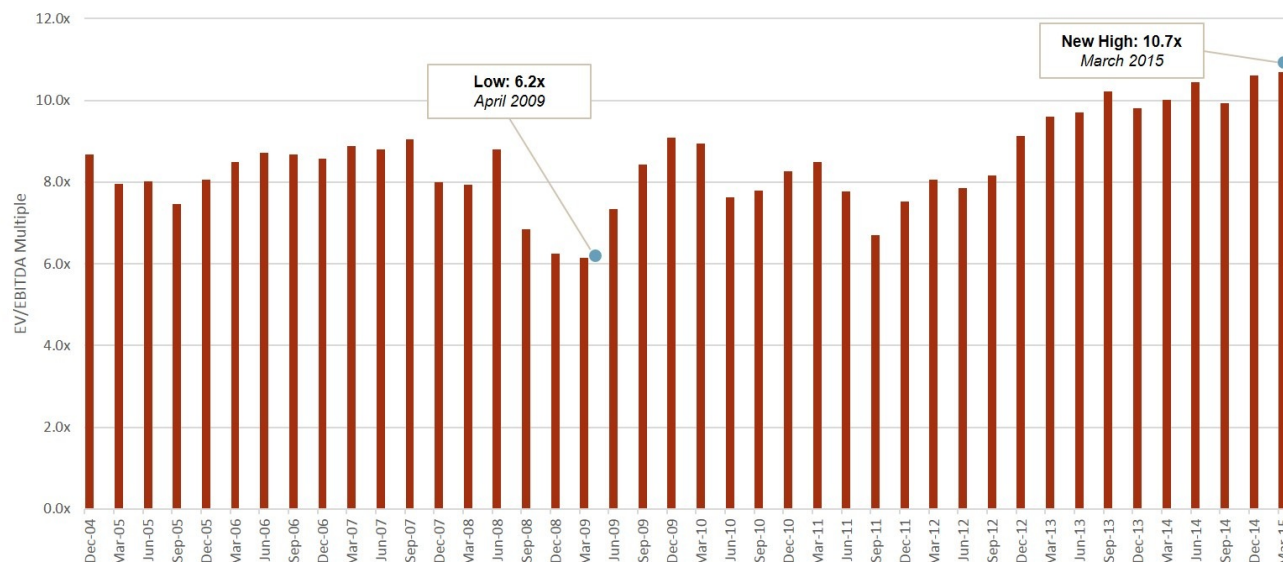
In March 2015, the Grace Matthews Chemicals Index<sup>1</sup>, which tracks Enterprise Value/EBITDA ratios, (i.e., "EV/EBITDA multiples" or just "EBITDA multiples")<sup>2</sup> of publicly traded chemical firms, reached a multi-year high of 10.7 times EBITDA. The ten year average for the Index's EV/EBITDA multiple is 8.5, and its low (in the first quarter of 2009) was 6.2, meaning that chemical firms in the aggregate are now trading at 26% higher than their long-term average and 73% above the Index's low. The Index's component companies and their current valuation metrics are provided on page 5.

As M&A professionals, we pay attention to EBITDA multiples because they offer a quick, shorthand guide to valuation. But we've learned to take multiple averages with a grain of salt and focus more on trends in valuation, because averages, which aggregate the valuations of many companies, are usually an unreliable measure for determining a specific company's value.

<sup>1</sup> The Grace Matthews Index is comprised of 48 publicly-traded chemical companies spanning multiple markets and geographies. The Index aggregates the latest reported financial data and stock prices, and tracks valuation trends and operating metrics across different market capitalization ranges and industry sectors.

<sup>2</sup> "Enterprise Value," or "EV", is the sum of all invested capital in a company, including both the value of equity (market capitalization) and funded debt less cash and cash equivalents. The EV/EBITDA ratio is similar to the classic P/E ratio, but it eliminates the effect that a company's capital structure will have on the ratio, therefore allowing more direct comparisons of value between different companies. When M&A professionals speak of "multiples," they are usually referring to EV/EBITDA multiples.

## Grace Matthews Chemicals Index



Source: Grace Matthews

Heresy? Maybe, but consider that public company multiples typically are skewed higher than private market multiples for a number of reasons, including public companies' liquidity, size and scalability, and better access to the capital (debt) markets. In our Index, there is also a wide spread in EV/EBITDA multiples, with a low value of 5.3 and a high value of 22.5. From a more technical, statistical perspective, the Index's standard deviation (basically, a measure of the average difference between a specific value and the average value of the whole) is 3.5, which is high, representing 33% of the average or mean value of the Index.

You also need to keep in mind that a mathematical average will never account for qualitative differences between companies - differences that can have considerable impacts on value. Most obviously, an average will lump together specialty manufacturers (low volume, high margin) with commodity firms (high volume, low margin), although each group is likely to trade at significantly different multiples. There are subtler differences as well. For example, in our Index, there is one company that consistently generates high cash flows from operations, enough to fund capital expenditures, acquisitions, stock buybacks, and dividend increases year after year. The Index also includes another company that is equally high-quality, but it is restructuring, such that EBITDA is currently depressed due to a number of one-time write-offs. Both companies currently have relatively high multiples, the former because it is consistently one of the best players in its market niche, and the latter because the denominator in the EV/EBITDA equation is temporarily lower than its "normalized" level. For the reasons just cited, we usually omit exceptionally high and low values when calculating the Index's published average.

The bottom line is that the Index is sometimes useful for an off-the-cuff, back-of-the-envelope valuation (you would be surprised how often we are asked), especially when our knowledge of a company is limited. But we recognize its limitations, and regard such "valuations" for what they are. That doesn't mean the Index isn't useful; focusing on the trend tells us a lot about the overall health of the M&A environment, and whether the timing for the sale of a business is good or if it would be better for the shareholders to hold off for a while.

In regard to the latter, one thing we know for sure is that chemical industry multiples have been rising since the end of 2011. The trend confirms what we already know anecdotally: that the current supply/demand dynamics in the M&A markets are supporting increasingly higher valuations. Corporate balance sheets currently have large cash balances, and private equity groups similarly have record sums of capital to invest. Both equally have access to low-cost debt. Competition between cash-rich strategic buyers and chemical-focused private equity groups is very strong, and could draw many privately-held, high quality companies into the market. All things considered, 2015 is going to be a good time to consider an exit.

## Grace Matthews Chemicals Index

Name	Total Enterprise Value (\$millions)	LTM EBITDA (\$millions)	EBITDA Margin %	EBITDA 5 Yr CAGR %	Total Enterprise Value / EBITDA*
3M Company	\$110,073	\$8,543	26.8%	6.7%	12.9x
A. Schulman, Inc.	\$1,555	\$153	6.2%	17.6%	10.1x
Air Products & Chemicals Inc.	\$39,440	\$2,662	25.5%	4.9%	14.8x
Airgas, Inc.	\$11,065	\$970	18.4%	7.9%	11.4x
Akzo Nobel NV	\$20,102	\$1,780	11.7%	2.5%	11.3x
Albemarle Corporation	\$6,490	\$429	17.5%	6.6%	NA*
American Vanguard Corp.	\$395	\$29	9.8%	7.1%	13.6x
Ashland Inc.	\$10,647	\$613	10.1%	-7.0%	NA*
Avery Dennison Corporation	\$5,686	\$661	10.4%	8.7%	8.6x
Axiall Corporation	\$4,570	\$393	8.6%	22.9%	11.6x
BASF SE	\$103,723	\$10,549	13.3%	5.1%	9.8x
Cabot Corporation	\$3,998	\$540	15.2%	16.6%	7.4x
Celanese Corporation	\$10,939	\$1,056	15.5%	8.8%	10.4x
Chemtura Corporation	\$1,883	\$217	9.9%	-3.3%	8.7x
Church & Dwight Co. Inc.	\$11,813	\$739	22.4%	8.8%	NA*
Clariant AG	\$7,169	\$797	12.9%	11.0%	9.0x
Cytec Industries Inc.	\$4,298	\$316	15.8%	3.6%	13.6x
DuPont	\$72,775	\$6,307	18.1%	8.2%	11.5x
Eastman Chemical Co.	\$17,951	\$2,056	21.6%	20.1%	8.7x
Ecolab Inc.	\$41,073	\$2,910	20.4%	21.6%	14.1x
Evonik Industries AG	\$15,214	\$1,793	13.0%	6.6%	8.5x
FMC Corp.	\$9,529	\$846	21.0%	7.1%	11.3x
HB Fuller Co.	\$2,669	\$221	10.5%	7.5%	12.1x
Huntsman Corporation	\$9,873	\$1,266	10.9%	19.8%	7.8x
Innospec Inc.	\$1,179	\$139	14.5%	25.9%	8.5x
International Flavors & Fragrances Inc.	\$10,007	\$688	22.3%	9.2%	14.5x
Kemira Oyj	\$2,459	\$218	9.6%	-1.2%	11.3x
Koninklijke DSM N.V.	\$12,269	\$1,192	12.2%	6.0%	10.3x
Koppers Holdings Inc.	\$1,200	\$101	6.5%	-3.9%	11.9x
Kraton Performance Polymers Inc.	\$935	\$123	10.0%	7.6%	7.6x
Lanxess AG	\$6,268	\$867	10.0%	17.0%	7.2x
LyondellBasell Industries N.V.	\$45,921	\$6,708	14.7%	26.8%	6.8x
Methanex Corporation	\$5,720	\$798	24.7%	41.3%	7.2x
Nippon Paint Holdings Co., Ltd.	\$12,394	\$320	14.9%	21.5%	NA*
Olin Corp.	\$2,647	\$357	15.9%	7.7%	7.4x
OM Group Inc.	\$797	\$98	9.2%	2.8%	8.2x
PolyOne Corporation	\$4,158	\$357	9.3%	17.5%	11.7x
PPG Industries Inc.	\$34,165	\$2,319	15.1%	11.0%	14.7x
Praxair Inc.	\$45,717	\$3,885	31.7%	9.6%	11.8x
Quaker Chemical Corporation	\$1,162	\$95	12.4%	18.1%	12.2x
RPM International Inc.	\$7,704	\$561	12.7%	7.6%	13.7x
Sensient Technologies Corporation	\$3,539	\$273	18.8%	6.4%	13.0x
The Dow Chemical Company	\$74,501	\$8,322	14.3%	13.8%	9.0x
The Sherwin-Williams Company	\$28,601	\$1,483	13.3%	11.1%	NA*
The Valspar Corporation	\$8,458	\$706	15.5%	10.7%	12.0x
W.R. Grace & Co.	\$8,539	\$576	17.8%	13.7%	14.8x
Westlake Chemical Corp.	\$9,231	\$1,313	29.7%	44.6%	7.0x
Zep, Inc.	\$602	\$51	7.3%	6.1%	11.8x
Mean Value			15.2%	11.5%	10.7x
Median Value			14.4%	8.7%	11.3x

\*Eliminates outlier values - Total Enterprise Value / EBITDA multiples greater than 15 and less than 4



## Grace Matthews Chemicals and Materials Practice: Select Transactions

 <p>has been acquired by</p> 	 <p>has been acquired by</p> 	 <p>has been acquired by</p> 	 <p>has sold certain assets to</p> 
 <p>has acquired select assets of the Capture business from</p> 	 <p>has acquired the assets of</p> 	 <p>has been acquired by</p> 	 <p>has been acquired by</p> 
 <p>has sold its Resilient Floor Coatings Business to</p> 	 <p>has acquired</p> 	 <p>has sold its portfolio company</p> 	 <p>has acquired</p> 
 <p>has acquired</p> 	 <p>has acquired the stock of</p> 	 <p>has acquired</p> 	 <p>has acquired</p> 
 <p>has acquired the assets of</p> 	 <p>has sold its specialty chemical subsidiary</p> 	 <p>has licensed exclusive fields of Intelimer technology from</p> 	 <p>has acquired</p> 

## Grace Matthews Chemicals and Materials Overview

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Grace Matthews chemical group is recognized globally as a leader in transaction advisory services for manufacturers and distributors of specialty, commodity, and formulated chemicals. Grace Matthews' clients include privately-held businesses, private equity funds, and large, multinational corporations.

Grace Matthews' practice is global in scope, and focuses on several areas: sell-side transactions for private companies, private equity holdings, and divestitures for multi-national corporations; buy-side work, typically for large, public companies or major multi-nationals and sponsor-backed chemical platforms; leveraged transactions involving raising debt and/or equity capital, strategic advisory analysis, and transaction fairness opinions. Areas of expertise include:

- Paints, Industrial Coatings, Inks
- Adhesives, Sealants, Tapes
- Plastics, Polymers, Resins
- Colorants, Additives
- Construction Materials
- Contract Packaging
- Biomaterials
- Agricultural Chemicals
- Inorganics, Ceramics, Catalysts
- Personal Care, Soaps, Cleaners
- Fine Chemicals
- Water Treatment Chemicals
- Oil & Gas Process Chemicals
- Industrial Minerals

Grace Matthews is a privately-held investment bank with successful chemical industry transactions dating back to the early 1990s. Grace Matthews principals have completed over 100 transactions involving global corporations such as AkzoNobel, 3M, Lubrizol, BASF, DuPont, Sherwin-Williams, PPG Industries, Ashland, Ceradyne, DSM, ICI, Borregaard, Air Products, Landec Corporation, The Home Depot, Hexion Specialty Chemicals, ITW, PolyOne, Weatherford, and Evonik, to name a few.

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Grace Matthews, Inc. ([www.gracematthews.com](http://www.gracematthews.com)) is a middle market investment banking group providing merger, acquisition, and corporate finance advisory services for industrial companies both in the U.S. and internationally. Grace Matthews is global in scope and well known for its strong track record of success dating back to the early 1990s.

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