

CHEMICAL INSIGHTS



Looking Ahead: Door Remains Open for Chemicals Middle Market M&A in 2019

Through the first nine months of 2018, the public equities markets, particularly in chemicals, appeared to be trending toward a slightly positive year-end performance as oil pricing experienced a lengthy stretch of stability, the chemicals industry embraced growth at or slightly above GDP levels (3%+ annualized run-rate), and M&A activity remained robust. However, the general decline in public equities in Q4 2018 threw a wrench into year-end performance, and the chemicals industry proved not immune. The S&P experienced a 14% decline in Q4 to finish down 6% for the year; meanwhile, the chemicals industry, as measured by the Grace Matthews Chemicals Index, experienced a decline of 16% in Q4, placing the industry firmly into correction territory for Q4 and the year.

Layering this year-end correction in public markets on top of major unresolved macroeconomic issues, such as slowing growth in Asia, potential tariff wars with China, and Brexit, has caused a noticeable degree of market anxiety. Tightening market conditions were a large factor in the Fed announcing a December interest rate hike and a reduction of projected interest rate hikes in 2019, as two are now planned instead of three. Within the chemicals industry, an oil price decline and the year-long repeated raw material cost increases (Q4 2017 - Q3 2018) have further compounded questions about what lies ahead, and we are frequently receiving the question, "What does this mean for M&A in 2019?"

The concerns driving this question are valid, and while M&A activity in 2019 may not reach 2018 levels, the fundamentals of the chemicals industry remain quite healthy, particularly in the US, where the American Chemical Council projects volumes to grow above the rate of GDP in 2019¹. Grace Matthews has not seen any pull-back in our project volume, performance of our clients continues to be strong, and sentiment among business owners (private, PE-held, and public corporations) remains consistently positive. With capital abundant and readily available, both from PE firms well versed in the chemicals industry and from debt providers, we expect the strong M&A activity levels from 2018 to have at least some carryover into 2019. In terms of M&A activity for strategics, barring a takeover driven by an opportunistic value play, we believe the recent gyrations and resulting uncertainty in public equities will likely result in few, if any, "mega-mergers" for 2019; however, we do expect carve-outs to continue at a strong pace, as publicly traded companies can create incremental shareholder value by identifying non-core assets, monetizing them, and redeploying those proceeds into core and targeted growth areas of their business.

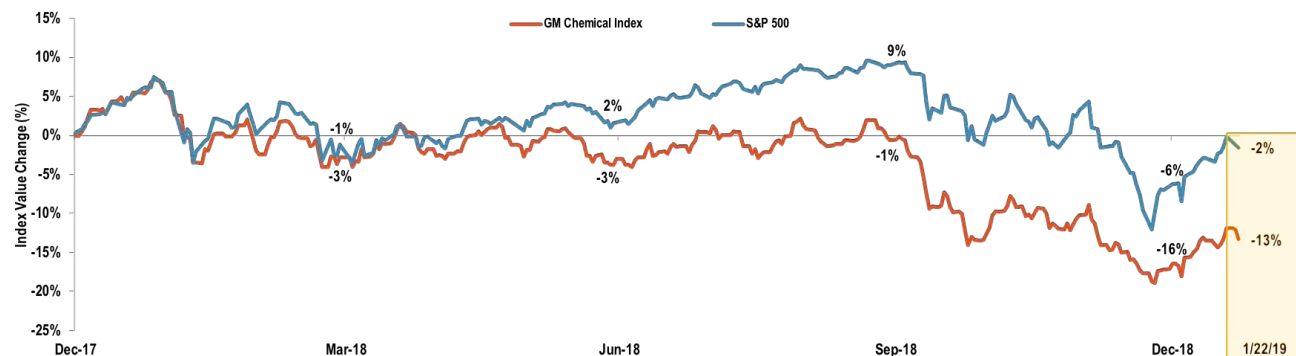
While market volatility and uncertainty may steer 2019 towards being a "good, but not great" year, the fundamentals of the chemicals industry and broader US economy range from solid to strong. Overall, the door remains open for middle market M&A activity in the chemicals industry.

¹ ACC Projections

Chemicals Industry Public Equities Performance and Noticeable Trends in 2018

To gauge public equities performance within the broader chemicals industry as well as within various sectors, Grace Matthews utilizes the Grace Matthews Chemicals Index, which tracks 94 publicly traded companies across a variety of chemicals and materials sectors. The chart below provides a by-quarter comparison of the GM Chemicals Index compared to the S&P 500.

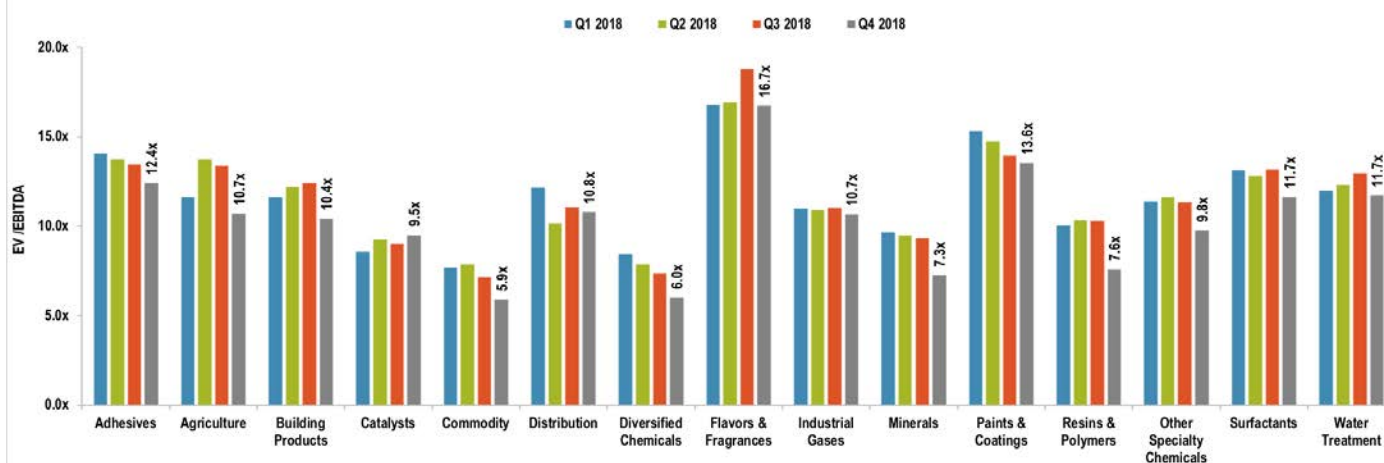
Figure 1: Grace Matthews Chemicals Index Compared to S&P 500



Source: Grace Matthews, Capital IQ

As shown above, stock performance of publicly owned chemical companies was down in 2018, as the GM Chemicals Index fell from just above break-even in September 2018 to down 16% for the year. In the first six months of 2018, the GM Chemicals Index showed a decline of 3% versus the S&P 500's increase of 1.7%. By the end of Q3, the GM Chemicals Index finished at a decline of 1% versus the S&P 500's increase of 9.0%. As of January 22, 2019, the GM Chemical Index and S&P 500 declined by 13% and 2%, respectively, since the beginning of 2018. EV/EBITDA multiples followed stock price performance trends—the chart below presents quarterly EV/EBITDA valuation trends of the Chemicals Index by sector.

Figure 2: 2018 Grace Matthews Chemicals Index Multiples, by Sector



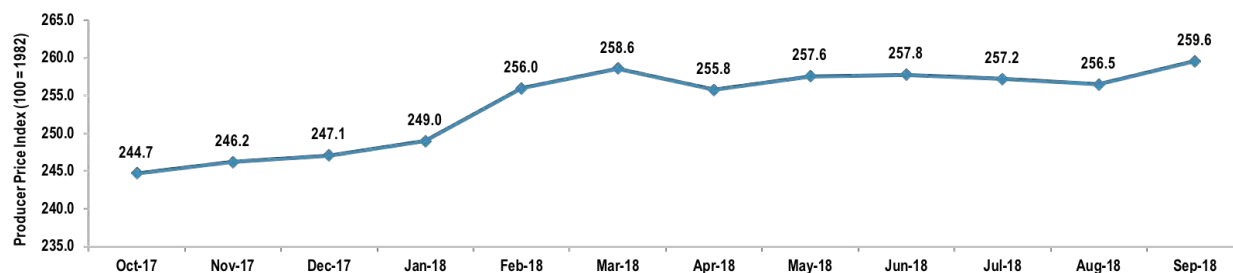
Source: Capital IQ

Nearly every sector tracked by Grace Matthews showed a decline over 2018 to current multiples. With an average EV/EBITDA multiple of 16.7x as of December 31, 2018, Flavors & Fragrances continues to outpace other sectors from a trading multiple perspective. The Adhesives and Paints & Coatings indices trade at an average of 12.4x and 13.6x multiples, respectively.

Two noticeable trends preceded or coincided with the Q4 correction: a nearly year-long period of rising raw material input costs, which forced companies to constantly play catch-up and eroded margins, and the sharp drop in crude oil pricing, which exacerbated anxiety of investors yet may actually end up providing some raw material relief for chemicals companies later in 2019.

For at least twelve months prior to Q4 2018, the raw material environment in the chemicals industry had been a steadily rising one, a statement echoed in earnings calls throughout the industry and further supported by the Producer Price Index for Chemicals for Oct 2017 through Sep 2018. This index, which is tracked by the St. Louis branch of the Federal Reserve, provides a high-level snapshot of the industry's RM price environment.

Figure 3: Producer Price Index, Chemical Materials

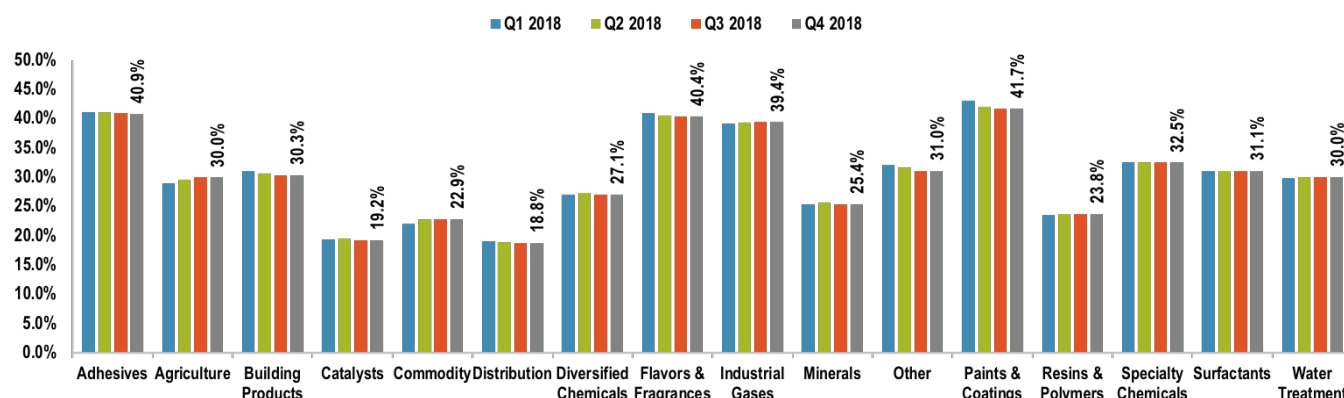


Source: Federal Reserve

As raw material costs continued to increase throughout the summer of 2018, many downstream chemical companies saw their margins eroded by an inability to quickly pass pricing onto their own customers. Gross margin declines were widespread throughout the industry, with ten of the sixteen sectors of the GM Index reporting lower margins in Q4 relative to the average of the first three quarters of 2018.

Meanwhile, for the first nine months of 2018, West Texas Intermediate (WTI), a grade of crude oil used as a benchmark in oil pricing, remained fairly steady in the \$60-\$75 band, and oil pricing volatility had been at its lowest average level relative to the previous four years. Prior to the 2014 oil price crash, the price of crude oil and price of raw materials for the chemicals industry were strongly correlated; while the relationship between crude and RM price has been somewhat decoupled since then, crude oil remains a key input and is viewed as an indicator for pricing of other feedstocks, and volatility in oil pricing directly impacts not only the petrochemicals segment but also the near and medium-term outlooks of companies further downstream. The most recent oil pricing collapse experienced throughout Q4 2018, as WTI dropped from a high of \$76.41 on Oct 3 to a low of \$42.53 on Christmas Eve, swept away the stability of the preceding months just as the industry prepared for the year ahead. Chemicals companies were forced to re-examine budgets with expectations of WTI in the \$50-\$60/bbl range as opposed to \$60-\$75/bbl. This decline is not entirely bad news, as the recent drop in oil prices may help reverse the raw material price increases of 2018 and may result in lower raw material prices heading into the first half of 2019. This may provide formulators and chemical manufacturers with margin stabilization or even improvement, as they may be able to hold pricing in a falling raw material environment and thus could be positioned to expand margins.

Figure 4: 2018 Grace Matthews Chemical Index Gross Margins, by Sector



Source: Grace Matthews, Capital IQ

Despite the substantial declines in the public markets in Q4 2018, lingering pricing adjustments as raw material swings flow through the value chain, and continued expectations of margin movements, the fundamentals of the broader chemicals industry remain robust based on strong overall volumes and demand. Chemicals rail traffic rose 4% in North America during 2018. As of this release, WTI pricing has rebounded to the \$50-\$55/bbl range. Most importantly, the chemicals

industry continues to expect growth above the rate of GDP, with the American Chemical Council projecting US volumes to grow 3.6% in 2019. This compares favorably to 3.1% growth in 2018 and is driven by “strong conditions in key end markets” and “advantaged energy and feedstock supply.”

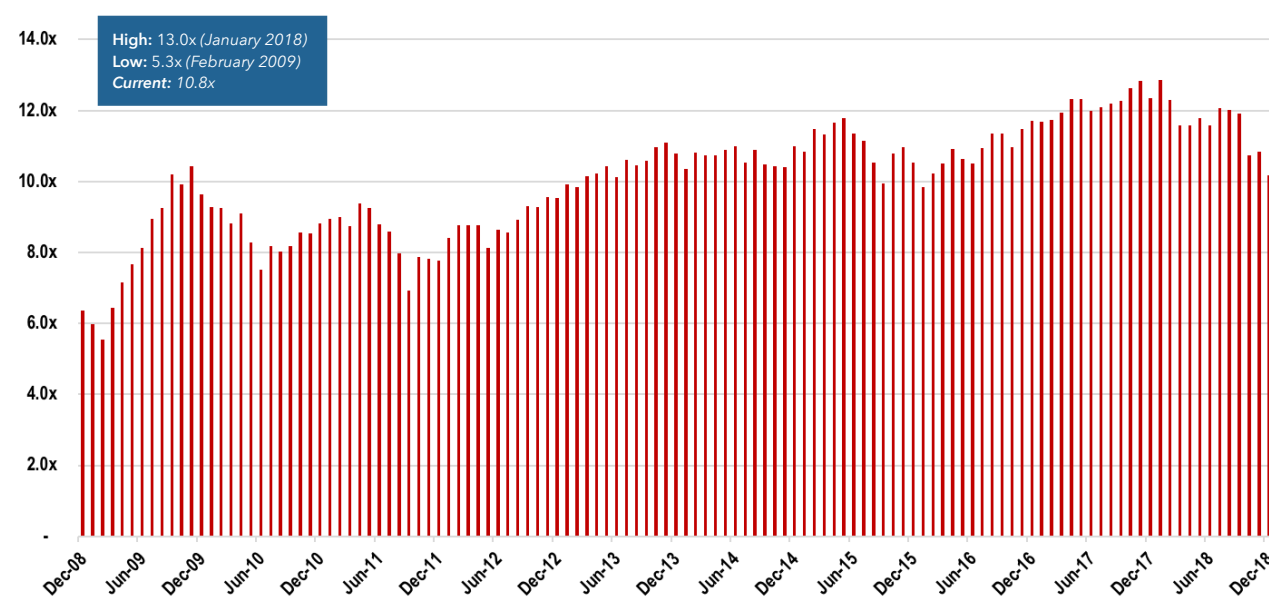
As tariffs, Brexit, political uncertainty, and slowing global growth add to the pressure faced by global players, economic indicators suggest chemicals companies based in or predominantly focused on the US may outpace their international peers due to slightly more favorable economic and regulatory conditions. The US unemployment rate hit a 49-year low in November 2018 of 3.7%, and the Federal Reserve forecasts similar levels for 2019. On the back of expected US GDP growth of 3% in 2018, the Fed forecasts another 2.3% for 2019, and the strong US dollar witnessed throughout 2018 is expected to remain so for the near-term. As such, US-based middle market chemicals companies may have fewer obstacles to navigate as they seek growth and expansion in the year ahead.

2019: Balancing Strong Industry Fundamentals and Abundant Capital with Macro Concerns

In terms of middle market chemicals M&A, we believe 2019 will be dictated by the balance between the macroeconomic concerns and market volatility previously discussed and the combination of strong industry fundamentals, abundant available capital, and US economic conditions providing a more favorable environment for success relative to conditions abroad. Fundamentally, both strategic buyers and private equity firms still face enormous pressure to grow and to deploy capital, respectively.

Returning to the question concerning what lies ahead, early signs point to the chemicals industry moving past trepidations from the public equities correction of Q4 2018, the challenging raw material environment faced throughout 2018, and the large drop in oil pricing. When considering M&A activity, business owners and investors alike will need to acknowledge market challenges and risks and price these into valuations. From the public markets side, there exists the possibility that downtrodden public equities may serve as potential takeover targets, yet we expect the scale and fit-focused mega-mergers of recent years, such as Sherwin Williams-Valspar and Dow-DuPont, to take a backseat to carve-out activities as corporations seek to continue improving focus on core assets. On the privately held and PE-held front, we expect conditions to continue favoring shareholder exits, though macroeconomic conditions may begin to temper valuations relative to recent years. As such, 2019 appears poised for another active M&A year, though whether the level of activity will exceed recent years remains challenging to predict.

Grace Matthews Chemical Index: Enterprise Value / EBITDA (Last 10 Years)



The *Grace Matthews Chemical Index* tracks the Enterprise Value / EBITDA ratios (“EV/EBITDA multiples” or “EBITDA multiples”) of 94 publicly traded chemical companies that span multiple sub-sectors and geographies. The Index aggregates the latest reported financial data and stock prices, and tracks valuation trends and operating metrics across different industry sectors. Index averages are equally weighted, as opposed to weighting by market capitalization.

Select Chemical Industry Transactions

Transaction values in \$US millions					
Date	Acquirer / Target	Target Description	Enterprise Value	EV / Sales*	EV / EBITDA*
Jan-19	Evonik / Structured Polymers	Manufactures polymer materials			
Jan-19	Celanese / Linde (Synthesis Gas Production Unit)	Manufactures synthesis gases			
Jan-19	American Vanguard / Argovant and Defensive	Supplies crop protection products and micronutrients (Brazil)			
Jan-19	Sika / CVC (Parex Group)	Provides construction solutions (France)	\$2,549	2.1x	
Jan-19	PPG / Hemmelrath Lackfabrik	Manufactures and supplies hydro primers (Germany)			
Jan-19	American Vanguard / DowDuPont (Quizalofop Business)	Produces herbicides			
Jan-19	PolyOne / Fiber-Line	Develops custom fiber products	\$120		
Dec-18	Covington Partners / Grand Traverse Plastics	Manufactures plastic and metal components			
Dec-18	Brenntag / Pachem Distribution	Distributes specialty chemicals and ingredients (Canada)			
Dec-18	Azelis / Deafarma	Distributes active pharmaceutical ingredients (Italy)			
Dec-18	RPM (Rust-Oleum) / Siamons International	Develops mold and mildew control products (Canada)			
Dec-18	Akzo Nobel / JV Swire Paints	Manufactures decoratives paints (Hong Kong)			
Dec-18	Arsenal Capital Partners (Meridian Adhesives) / Evans Adhesives	Manufactures industrial adhesives			
Dec-18	ProChem Energy Services / Greenwell Energy Solutions (Specialty Production Chemical Division)	Manufactures specialty production chemicals			
Dec-18	Bain Capital (Italmatch Chemicals) / BWA Water Additives	Provides water treatment technology and chemicals solutions (UK)			
Dec-18	Chemicals-Focused Investor Group / Integrated Advantage Group	Develops oil and gas fracking chemicals and provides water treatment, fluid transportation, and laboratory services			
Dec-18	Wynnchurch Capital / Buchanan Rubber	Manufactures and sells industrial hoses and couplings (Canada)			
Dec-18	Hexcel / ARC Technologies	Manufactures microwave absorber materials	\$160		
Nov-18	HIG Capital (Vantage Specialty Chemicals) / Leuna-Tenside GmbH	Manufactures industrial chemicals (Germany)			
Nov-18	Sun Capital Partners / VantaCore Partners	Supplies mineral aggregates	\$205		
Nov-18	Golden Gate Capital / Merit Capital Partners (Active Minerals International)	Mines and supplies air-float kaolin and gel quality attapulgit			
Nov-18	Ineos / Ashland (Composites Business and the Butanediol (BDO) Manufacturing Facility)	Manufactures polyester resins, vinyl ester resins, and gel coats (Germany)	\$1,100	1.0x	
Nov-18	Arcosa / HIG Capital (ACG Materials)	Mines and distributes industrial minerals	\$315	2.1x	9.8x
Nov-18	TorQuest Partners / Bartek Ingredients	Manufactures and distributes specialty food chemicals (Canada)			
Nov-18	Platinum Equity / Lonza (Water Care Business)	Provides water treatment chemicals	\$630		
Nov-18	Akzo Nobel / Colourland Paints	Manufactures and distributes paints and coatings (Malaysia)			
Oct-18	Arsenal Capital Partners (CPS) / Edgewater Capital (FAR Chemical)	Produces specialty organic chemicals			
Oct-18	The Jordan Company (DuBois Chemicals) / IPAC Chemicals	Manufactures and distributes water treatment chemicals (Canada)			
Oct-18	Arsenal Capital Partners / MPE Partners (Polytek Development)	Manufactures liquid mold rubbers, liquid casting plastics, and other specialty molding solutions			
Oct-18	KKR / Norwest Equity (Minnesota Rubber & Plastics)	Manufactures molded plastics and rubber components			

* EV = Enterprise Value (equity value, plus funded debt, minority interests and preferred shares, less cash and cash equivalents)

Grace Matthews: Select Chemicals and Materials Transactions

 <p>has been acquired by</p>  <p>GOLDEN GATE CAPITAL</p>	 <p>and its subsidiaries</p>  <p>GENESIS</p> <p>have been recapitalized by a chemicals-focused investor group</p>	 <p>has been acquired by</p> 	<p>MFG Chemical, Inc.</p>  <p>has been recapitalized by</p> 
 <p>has been acquired by</p> 	 <p>AAKASH CHEMICALS</p> <p>THE SKY IS THE LIMIT</p> <p>has been recapitalized by</p> 	 <p>has been acquired by The Jordan Company's portfolio company</p> 	 <p>has sold its subsidiary CiDRA Chemical Management Inc. (CMI) to</p> 
 <p>has been acquired by</p>  <p>GOLDNER HAWN JOHNSON MORRISON</p>	 <p>has sold its Automated Fueling Stations business</p>  <p>to</p>	 <p>has been acquired by</p> 	 <p>has been acquired by</p>  <p>AMERICAN SECURITIES</p>
 <p>has sold its pressurized polyurethane foam adhesives business to</p> 	 <p>The Chemical Company</p> <p>has sold its global Polyolefin Catalysts business to</p> 	 <p>has acquired</p> 	 <p>has sold its global automotive interior rigid thermoplastics coatings business to</p> 
 <p>has sold its Baytown Operations to</p>  <p>The Substance Inside</p>	 <p>has been acquired by</p> 	 <p>a division of</p>  <p>has been acquired by</p> 	<p>DELOSCAPITAL</p> <p>sold its portfolio company</p>  <p>to</p> 

Grace Matthews Overview

Grace Matthews is recognized globally as a leader in transaction advisory services for manufacturers and distributors throughout the chemical and material value chain. 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 and divestitures for private companies, private equity holdings, and multinational corporations; buy-side work for large public companies, major multinationals, and sponsor-backed chemical platforms; leveraged transactions and recapitalizations, strategic advisory analysis, and transaction fairness opinions. Areas of expertise include:

- Adhesives, Sealants, Tapes
- Catalysts, Petrochemicals
- Construction Chemicals, Building Products
- Contract Manufacturing, Custom Synthesis
- Distribution, Equipment, Infrastructure
- Food Ingredients, Flavors, Fragrances
- High Purity, Electronic Chemicals
- Industrial Minerals, Inorganic Chemicals
- Intermediates, Industrial Chemicals
- Lubricants, Lube Additives
- Oilfield & Water Treatment Chemicals
- Paints, Coatings, Inks
- Personal Care, Soaps, Medical Materials
- Plastics, Colorants, Additives
- Tolling, Private Label Products
- Additional Chemical Sectors

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) is an investment banking group providing merger, acquisition, and corporate finance advisory services for chemical 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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