

Quarterly Review

Chemicals & Materials Q1 2022



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Lincoln International Statement

Adhesives and sealants is a highly attractive market; while EBITDA margins are typically below 20%, companies in this space continuously trade in the double-digits (based on EV / EBITDA multiple). Bolstering solutions mix towards adhesives and sealants has been a highlight of a number of strategies in the space in re-positioning themselves as specialty materials providers. The high level of performance required by adhesives and sealants makes it a critical input into high-growth categories. Operating synergies are more obtainable in this segment of the chemicals and materials market, which also helps to support strong EV / EBITDA multiples in competitive processes. Because of the importance of the adhesives and sealants applications, the category is highly recession resistant and is projected to grow through a variety of potential macroeconomic scenarios. The sector is still in the early innings of more fully transitioning to Environmental, Social and Governance (ESG)-focused solutions and there will be particular opportunity for those players who are able to align with the circular economy and provide highly effective, eco-friendly solutions.



Re-Visiting the Highly Active Adhesives and Sealants Market

by James Dailey, Director in Lincoln International's global chemicals team

With the once-every-four years World Adhesive & Sealant Conference now completed, it would only be appropriate to provide a brief refresher on the attractive adhesive and sealants subsector within chemicals and materials. Adhesives and sealants are critical to a wide variety of industries, including building and construction, electronics, consumer, transportation, medical and industrials. Adhesives serve to bind materials together and balance structural load. Sealants serve to provide greater flexibility and protection from elements (e.g., air, water). The two are tied together through similar production cycles and source materials. On an airplane, for example, adhesives are used to bond together textiles and fabrics for seating applications, while sealants are used to provide insulation and protect from fire. Adhesives and sealants are mission critical as a failure in performance will have compounding ramifications for the product or brand associated with the end application.

The global adhesives and sealants market is estimated to be north of \$60 billion and is expected to grow in excess of GDP given the increasingly advanced applications (frequently replacing traditional fastening products) and the alignment with industry megatrends. One example of broader market share gain over traditional fastening products is in the consumer segment with non-sewing adhesives that provide higher efficiency and more flexible designs than can be achieved via sewing. Another example of market share gain is via replacing more typical mechanical bonding, enabling lightweighting, more durable qualities and weight bearing in building and construction applications. Major tailwinds supporting adhesives and sealants growth include electrification, e-commerce, mobility, clean energy and hygiene and health.

Key Macro Trends for Adhesives & Sealants



The adhesives and sealants market can be further thought of between four primary technologies: (i) water-based, (ii) solvent-based and (iii) hot-melt adhesives and sealants. The selection of adhesive or sealant depends on many factors, including the type of substrate, application type or resistance (e.g., environmental, temperature) required. At a high level, solvent-based adhesives utilize solvents as a vehicle for the resin, while water-based adhesives utilize water. Hot-melt adhesives provide short opening and setting times for application, making them particularly attractive to the packaging industry. To be a full service provider within the industry, it is important to have extensive capabilities deep within the adhesive subsets.

Water-based adhesives are formed from water, polymers and additives. They are activated as the water evaporates or as it is absorbed by the substrate. Subsets with water-based adhesives include polyvinyl acetate (PVA), vinyl acetate ethylene (VAE) and acrylic-based emulsion adhesives. PVA adhesives are ideal for porous materials, such as textiles, paper, wood and tissues, while VAE adhesives are better suited for porous applications and possess better flexibility and resistance to water with superior properties. Acrylic-based emulsion adhesives are created from homogeneously emulsifying vinyl acetate or acrylic synthetic resin polymers in water. The benefits of acrylic-based emulsion adhesives help to balance peel, shear and tack.

Solvent-based adhesives are produced through a mix of solvents and thermoplastics or cross-linked polymers. They have advantages over water-based adhesives when it comes to application (e.g., aerosol spray, brush, coating or roll) and typically provide a heightened level of resistance to external, environmental factors on different substrates. The primary appeal tends to be their strong resistance to chemical exposure and high temperatures. Two common classifications of solvent-based adhesives are wet bonding adhesives and dry bonding (or contact) adhesives. Wet bonding adhesives harden once the solvent evaporates. It is critical that the substrates are bonded while the adhesive is still in the liquid form. Dry bonding adhesives can be applied without the use of clamping and the bond will build over time as the polymers of the adhesives films comingle.

Hot-melt adhesives are polymer based and are typically applied as a film or as a line of beads that convert to solid form once the material sets. The benefits of hot melt adhesives include a fast set time because they do not use water or solvents, making them ideal for industrial applications. Ethylene-vinyl acetate (EVA) is a particular copolymer, hot-melt adhesive that can be used in a range of formulations and applications given they bond to many different cellulosic materials (typically the broadest range of substrates among hot-melt adhesives). Another popular hot-melt type is polyolefin adhesives, which provide higher heat resistance and bond strengths when compared to EVAs.

Major Adhesives & Sealants Players



The adhesives and sealants market is increasingly shifting towards more ESG-friendly solutions. The EPA and REACH are both driving adhesive and sealant solutions to no or low VOC levels. With the demand for environmentally friendly construction increasing, adhesives and sealants that are sustainable with renewable and recycled applications are becoming increasingly important. These solutions will require greater levels of industry partnership than in the past, with one such example being H.B. Fuller's 2021 partnership with Covestro to deliver more sustainable adhesive solutions. While care must be taken when reformulating a solution, there is a clear path to a greener future for adhesives and sealants as the value chain transforms from operating in the frame of a linear economy to that of a circular economy.

From the mergers and acquisitions (M&A) side, the adhesives and sealants market has been highly active with multiples continuing to increase. A new high watermark was set with Arkema's (Bostik's) acquisition of Ashland's performance adhesives business unit, which was a multiple of 20.1x the TTM June 2021 EBITDA (as per the Ashland press release) or 17.4x Pro-Forma 2021 EBITDA (if the Arkema announcement is your preference). In any event, if future synergies and tax benefits are folded in, the multiple would be down to an implied 8.7 times by 2026. Double-digit multiples in the industry are not a new phenomenon, as H.B. Fuller paid 11.1x for Wisdom Adhesives, a provider of adhesives for the packaging, assembly and paper converting markets, back in January 2017 (though projected down to 7.2x post-synergies). In the interim, there have been a number of highly successful private equity theses deployed in the space, perhaps most notably with Arsenal Capital's Meridian Adhesives investment. Despite the level of activity over the last several years, the industry is still fairly fragmented at the lower end with additional activity certain to come in the near term.

Select Adhesives & Sealants M&A Transactions (2017 - Q1 2022)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Announced	Shanghai Zhiguan Polymer Materials	Arkema	China	France	-	-	-
Announced	Permoseal	Arkema	South Africa	France	-	-	-
Mar-22	Adhesives and Versatic Acids Business of Hexion	American Securities	US	US	\$3,333	1.15x	8.5x
Feb-22	Performance Adhesives Business of Ashland	Arkema	US	France	1,650	4.58x	20.1x
Jan-22	Apollo Chemicals	H.B. Fuller	UK	US	193	-	-
Dec-21	Adhesives Business of Tri-Tex	Meridian Adhesives	Canada	US	-	-	-
Dec-21	American Sealants	Meridian Adhesives	US	US	-	-	-
Dec-21	Bird Song Adhesives	Applied Products	US	US	-	-	-
Nov-21	RML-UCO	Artemis Capital Partners	US	US	-	-	-
Nov-21	Hamatite Business of Yokohama Group	Sika	Japan	Switzerland	-	-	-
Oct-21	Unichem	Key Polymer	US	US	-	-	-
Oct-21	American Chemical	Applied Products	US	US	-	-	-
Sep-21	DURAZIV	Saint-Gobain	Romania	France	-	-	-
Sep-21	Prime Blend	Meridian Adhesives	US	US	-	-	-
Aug-21	Techsil Holdings	Diploma	UK	UK	-	-	-

Select Adhesives & Sealants M&A Transactions (2017 - Q1 2022) (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Aug-21	Bexel Internacional	Sika	Mexico	Switzerland	-	-	-
Jun-21	Seam Seal International	Westbridge Capital	US	Canada	-	-	-
Jun-21	Edge Adhesives	Arkema	US	Australia	-	-	-
May-17	Biolink Gesellschaft für Verbindungstechnologie	Saint-Gobain	Germany	France	-	-	-
May-21	J-Chemical	Mitsubishi Gas Chemical	Japan	Japan	-	-	-
May-21	Adhezion	Applied Products	US	US	-	-	-
May-21	Alpha Systems	Patrick Industries	US	US	-	-	-
May-21	Frontier Products	Meridian Adhesives	US	US	-	-	-
Apr-21	Adtek	Dynea Asia Pacific Holding	Malaysia	Singapore	\$40	-	-
Mar-21	Flooring Adhesives Business of DriTac Flooring Products	Sika	US	Switzerland	-	-	-
Mar-21	Applied Products	Arsenal Capital Partners	US	US	-	-	-
Mar-21	BDK Industrial Products	ATP Adhesive Systems	UK	Germany	-	-	-
Mar-21	P R Epoxy Systems	Vebro Polymers	UK	UK	-	-	-
Feb-21	Poliplás Selantes e Adesivos	Arkema	Brazil	Brazil	-	-	-
Dec-20	Pipeline Performance Products Business of Shawcor	Seal for Life Industries	US	US	92	1.06x	-
Nov-20	Advanced Materials Solution of Huntsman's India Operations	Pidilite Industries	India	India	283	5.25x	15.0x
Nov-20	Consumer Sealants Business of Momentive Performance Materials	Henkel	US	Germany	204	1.82x	-
Oct-20	Leeson Polyurethanes	Innovative Chemical Products Group	UK	US	-	-	-
Aug-20	Fixatti	Arkema	Switzerland	France	-	-	-
Jul-20	Admil Adhesives	DuluxGroup	Australia	New Zealand	-	-	-
Feb-20	ITAC Limited	HD Sharman Group	UK	UK	-	-	-
Jan-20	Chemical Alliance	Follmann	Russia	Germany	-	-	-
Jan-20	Scheugenpflug	Atlas Copco	Germany	Sweden	-	-	-
Dec-19	HarperLove	HBM Holdings	US	US	-	-	-
Nov-19	Intumescent Chemicals	Fire Curtains Group	UK	UK	-	-	-
Nov-19	Spectra Group Photopolymers	Formlabs	US	US	-	-	-
Oct-19	Crevo-Hengxin	Sika	China	Switzerland	-	-	-
Aug-19	Epoxies	Meridian Adhesives	US	US	-	-	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Adhesives & Sealants M&A Transactions (2017 - Q1 2022) (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Jul-19	Seal for Life Industries	Arsenal Capital Partners	US	US	\$328	2.73x	-
Jul-19	PolyCom Industries/Eco Dispersions	Meridian Adhesives	US	US	-	-	-
Jun-19	Light Curable Adhesive Business of MS Adell	Sekisui Fuller	Japan	Japan	-	-	-
Dec-18	Quimicryl	ParexGroup	Brazil	France	-	-	-
Sep-18	W.F. Taylor	Meridian Adhesives	US	US	-	-	-
Sep-18	Uniseal	LG Chem	US	South Korea	133	2.25x	-
May-18	Evans Adhesive	Meridian Adhesives	US	US	-	-	-
May-18	Epoxy Technology	Meridian Adhesives	US	US	-	-	-
May-18	Adhesives Technology	Meridian Adhesives	US	US	-	-	-
May-18	Choice Adhesives and Slocum Adhesives	Merit Capital Partners	US	US	-	-	-
Apr-18	Sealock	Follmann	UK	Germany	-	-	-
Dec-17	ATB Indústria e Comércio de Adesivos	Saint-Gobain	Brazil	France	-	-	-
Nov-17	Super-Tek	Parex	US	US	-	-	-
Nov-17	Adecol Ind. Química	H.B. Fuller	Brazil	US	46	1.25x	8.0x
Oct-17	Royal Adhesives & Sealants	H.B. Fuller	US	US	1,575	2.42x	11.4x
Oct-17	Hylomar	PHD Industrial	UK	UK	-	-	-
Oct-17	STRUCTIL	Hexcel	France	US	-	-	-
Aug-17	ABC Sealants	Sika	Turkey	Switzerland	-	-	-
Jul-17	Tilemaster Adhesives	Kerakoll	UK	Italy	-	-	-
Jun-17	MITOL	Soudal	Slovenia	Belgium	-	-	-
Feb-17	GlueBoss Adhesive	SciGrip Adhesives	US	UK	-	-	-
Feb-17	Adespec Adesivos Especiais	Saint-Gobain	Brazil	France	-	-	-
Jan-17	Wisdom Adhesives	H.B. Fuller	US	US	122	1.22x	11.1x

Source: Capital IQ, Mergermarket, Pitchbook and company data

Market Intelligence

Q1 2022 saw relatively choppy performance across the chemicals and materials sector as the conflict in Eastern Europe, continued tight supply chain dynamics and ongoing COVID-19 pandemic impacted the sector. Lincoln's chemicals and materials index, as well as the S&P 500, finished lower quarter-over-quarter. The Fed is focused on reining in inflation despite sluggish growth as unemployment rates remain low, with the combined impact likely to have an overall dampening effect.

Input prices (with a few exceptions – fertilizer as one major outlier) are beginning to come down from 2021 highs, though it is unlikely that the supply chain tightness eases in the near-term. Amidst the geopolitical uncertainty, Brent crude touched a high of \$123 per barrel and prices are expected to remain above \$100 through Q2 2022. The supply of gas, in particular, to Europe is critical to support chemical production activities that feed virtually the entire economy. While a shift towards alternative sources is underway and will be long ranging, the near-term focus continues to remain on supporting continued production. In the most immediate term, the exiting of activities and investments in certain parts of Eastern Europe amidst the unrest in Ukraine will cause one-time losses for many chemical majors, while further shifting the investment focus (and providing a continued boost to the trend of on-shoring).

Overall, 2022 is still expected to see production increases of 3.8%, fueled by record backlogs and a still, overall growing global economy. Supply chain and logistics issues are expected to improve (though perhaps not fully remedy) as the year progresses. The focus area remains on what the "new normal" will look like for the global supply chain and the premium that companies may need to pay to ensure surety of supply.

Source: Chemi.com, Chemical Engineering News, American Chemistry Council, U.S. Energy Information Administration

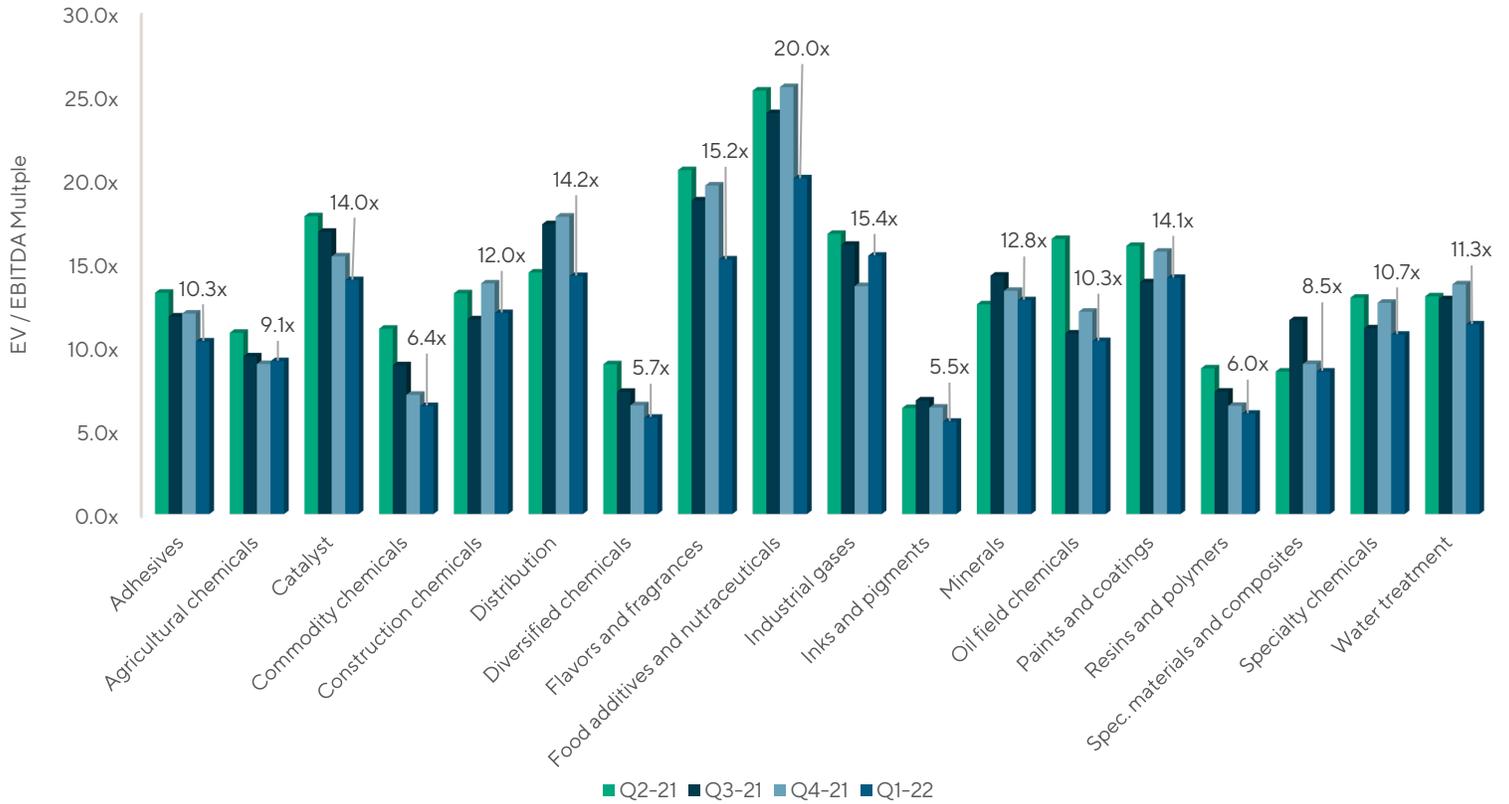
Public Company Valuation Statistics as of 03/31/22

Sector	Number of Companies	Quarterly Stock Performance	% of 52 Week High	EV / LTM		P / E Multiple	Net Debt / LTM EBITDA	Q1 2022 LTM Growth		Q1 2022 LTM Margin	
				Revenue	EBITDA			Revenue	EBITDA	Gross	EBITDA
Adhesives	5	(16.7%)	71.3%	2.13x	12.0x	21.7x	1.5x	3.7%	7.7%	38.6%	15.4%
Agricultural Chemicals	11	21.6%	94.3%	2.21x	10.6x	18.9x	1.4x	0.9%	1.5%	33.4%	24.8%
Catalyst	4	(3.2%)	70.7%	0.92x	7.9x	17.9x	0.9x	5.1%	4.6%	18.6%	4.7%
Commodity Chemicals	16	(1.9%)	81.5%	1.40x	8.0x	10.6x	1.1x	(0.9%)	(0.6%)	25.8%	19.4%
Construction Chemicals	13	(13.2%)	80.4%	1.88x	12.3x	16.1x	1.5x	4.5%	6.8%	30.7%	13.6%
Distribution	6	1.7%	89.2%	1.35x	17.4x	24.6x	2.5x	1.9%	3.8%	23.1%	9.3%
Diversified Chemicals	15	(7.3%)	81.7%	1.07x	6.9x	10.9x	1.4x	1.1%	4.4%	24.8%	16.9%
Flavors & Fragrances	9	(12.8%)	79.0%	3.30x	14.0x	34.8x	1.8x	5.2%	8.6%	40.9%	19.7%
Food Additives & Nutraceuticals	6	(14.3%)	82.9%	7.19x	24.7x	48.2x	0.9x	4.9%	7.6%	47.8%	22.1%
Industrial Gases	6	(10.1%)	83.1%	4.64x	17.1x	33.5x	1.6x	4.6%	8.2%	34.1%	22.9%
Inks & Pigments	5	(9.9%)	77.5%	0.48x	5.9x	10.7x	0.6x	5.4%	9.6%	20.7%	9.5%
Minerals	11	6.9%	83.2%	3.54x	18.2x	30.0x	1.6x	2.5%	6.7%	26.2%	24.7%
Oilfield Chemicals	3	24.5%	82.2%	1.25x	15.8x	19.2x	4.0x	9.2%	35.1%	21.6%	4.9%
Paints & Coatings	10	(22.4%)	71.8%	2.53x	15.9x	29.8x	2.5x	5.3%	15.3%	37.1%	12.4%
Resins & Polymers	10	(8.0%)	77.1%	1.14x	8.0x	10.7x	1.5x	(1.5%)	1.0%	24.3%	15.9%
Spec. Materials & Composites	8	(11.1%)	74.4%	1.15x	9.6x	12.4x	2.4x	3.2%	7.4%	20.6%	11.7%
Specialty Chemicals	17	(12.2%)	80.9%	2.03x	11.7x	23.4x	1.6x	4.2%	9.8%	31.7%	17.6%
Water Treatment	4	(17.0%)	77.4%	1.57x	11.4x	27.9x	2.7x	5.0%	9.8%	26.3%	16.1%
Median				1.75x	10.6x	18.9x	1.6x	4.0%	7.1%	29.3%	16.5%

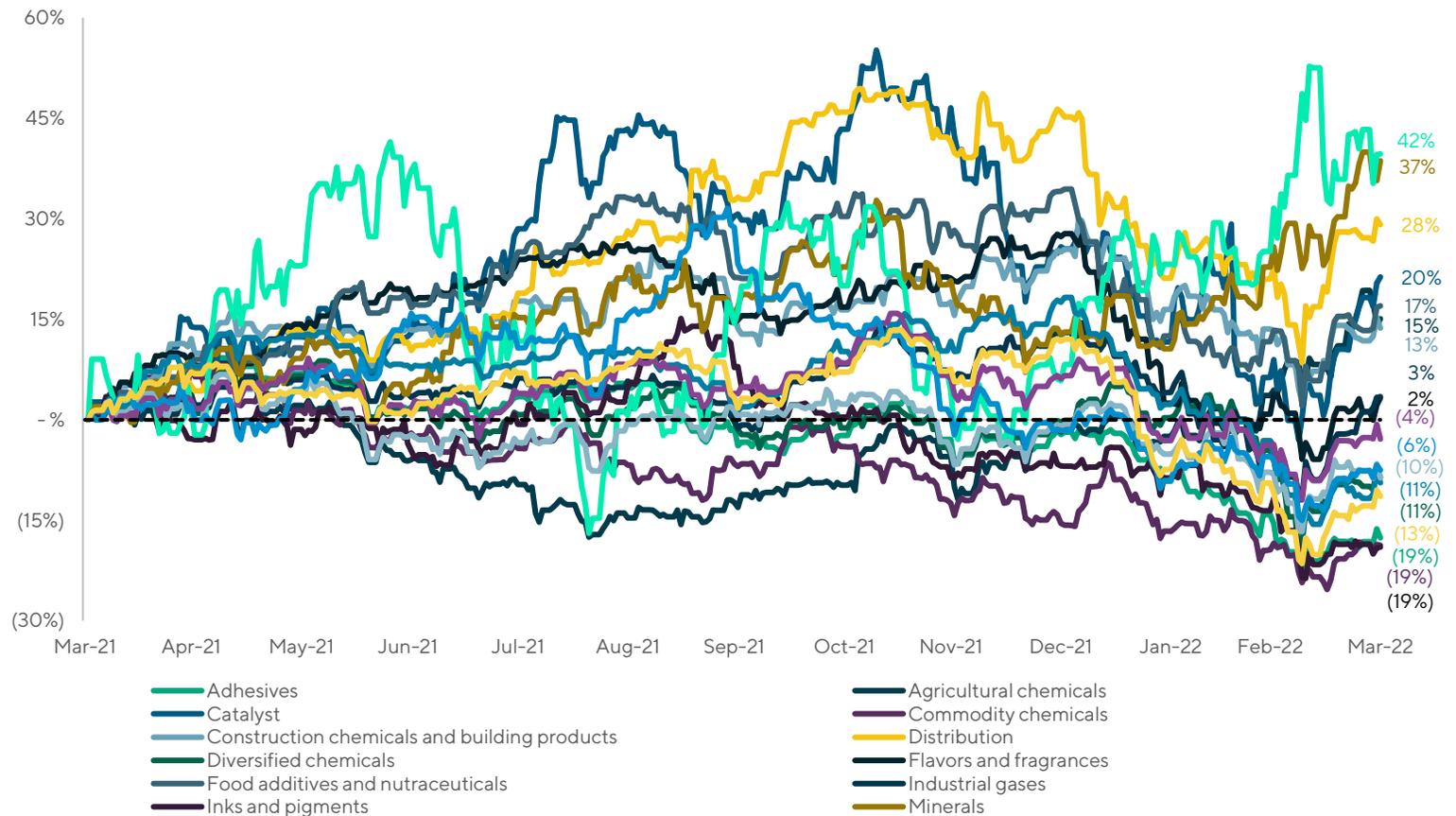
Source: Capital IQ, ThomsonONE, American Chemistry Council, Wall Street research and company data

Chemicals & Materials Market Update

Enterprise Value / LTM EBITDA



Stock Market Performance



Select Q1 2022 M&A Transactions

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Announced	Eksplozivi Rudex	Zhongbao Resources International	Serbia	Hong Kong	-	-	-
Announced	Pure BioPlastics	CBD Global Sciences	US	US	-	-	-
Announced	Hall Technologies	Omya	US	Switzerland	-	-	-
Announced	Cosmetic ingredients - CR&D Srl of B&C	Sharon Laboratories	Italy	Israel	-	-	-
Announced	Société Française d'Aromatiques R. Romani	Symrise	France	Germany	-	-	-
Announced	Trimo	Recticel	Slovenia	Belgium	\$181	-	9.5x
Announced	Formulated Polymers	Ascend	India	US	-	-	-
Announced	Marrone Bio Innovations	Bioceres Crop Solutions	US	Argentina	264	5.96x	-
Announced	Porcelain Enamel and Glass Coatings Business of Prince	KPS Capital Partners	US	US	-	-	-
Announced	Consumer Paints Business of Yenkin-Majestic Paint	True Value Company	US	US	-	-	-
Announced	Eurofilms Extrusion	Trioworld Industrier	UK	Sweden	-	-	-
Announced	Lithium Werks	Reliance New Energy Solar	Netherlands	India	-	-	-
Announced	Lenmar Wood Finishes & Coatings	Gemini Coatings	US	US	-	-	-
Announced	Environmental Science Professional Business of Bayer	Cinven	US	UK	2,600	-	-
Announced	Texplast	ALPLA Werke Alwin Lehner	Germany	Austria	-	-	-
Announced	Jorf Fertilizers	Koch Industries	Morocco	US	-	-	-
Announced	Renewable Energy Group	Chevron	US	US	2,778	0.86x	8.6x
Announced	Assets of Pipelife France	Tessengerlo Group	France	Belgium	-	-	-
Announced	Wing Pet Food	Symrise	China	Germany	-	-	-
Announced	Shanghai Zhiguan Polymer Materials	Arkema	China	France	-	-	-
Announced	Mobility and Materials Business of DuPont	Celanese	US	US	11,000	3.14x	13.8x
Announced	U. S. Amines	AdvanSix	US	US	100	-	-
Announced	Sookwangtti	Jahwa Electronics	South Korea	South Korea	32	-	-
Announced	Starcin	Saint-Gobain	Luxembourg	France	-	-	-
Announced	Quelaris Internacional	IMCD	Panama	Netherlands	-	-	-
Announced	Polyorganic Tecnologia	IMCD	Brazil	Netherlands	-	-	-
Announced	Asia-Pacific Hair Professional Business of Shiseido	Henkel	Japan	Netherlands	133	-	-
Announced	Tunckaya Kimyevi Maddeler	Azelis	Turkey	Belgium	-	-	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Q1 2022 M&A Transactions (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Announced	Edition Eight	Zeon Corporation	US	Japan	-	-	-
Announced	OCTAL	Alfa	Oman	Mexico	\$620	-	-
Announced	Megara	Corex Plastics	Australia	Australia	-	-	-
Announced	PolyFerm Canada	TerraVerdae Bioworks	Canada	Canada	-	-	-
Announced	Catalite	Azelis	Thailand	Belgium	-	-	-
Announced	Manuchar	Lone Star Funds	Belgium	US	-	-	-
Announced	Plastic Molding Technology	Tide Rock Holdings	US	US	-	-	-
Announced	Rubberecycle	LTR Intermediate Holdings	US	US	-	-	-
Announced	Titanobel	Incitec Pivot	France	Australia	103	-	7.8x
Announced	Suzhou Junda Vehicle Technology	Hainan Yang Family Investment	China	China	166	-	-
Announced	Schaffelaarbos	Symrise	Netherlands	Germany	-	-	-
Announced	Xinjiang Yuxiang Huyang Chemical	Xinjiang Xuefeng Sci-Tech	China	China	-	-	-
Announced	Caldic	GTM	Netherlands	Costa Rica	-	-	-
Apr-22	Ngoc Nghia Industry	Indorama	Vietnam	Thailand	93	-	-
Mar-22	Asfaltos Chova	BMI Group Holdings	Spain	UK	-	-	-
Mar-22	Auto Glass Business of Central Glass	Atlas Holdings	US	US	-	-	-
Mar-22	Incendin	STRACO	Belgium	Belgium	-	-	-
Mar-22	Strazaplastika	DS Smith Plastics Bilzen	Croatia	Belgium	-	-	-
Mar-22	Rincon Lithium Project	Rio Tinto	Argentina	Australia	825	-	-
Mar-22	Fertilizantes Heringer	Eurochem	Brazil	Switzerland	340	0.57x	3.4x
Mar-22	Tide Industrial	Marco Rubber & Plastics	US	US	-	-	-
Mar-22	Unipex Group	Barentz	France	Netherlands	-	-	-
Mar-22	Water Engineering	Nolan Capital	US	US	-	-	-
Mar-22	Arisan Chemicals	Vinmar International	Turkey	US	-	-	-
Mar-22	Pexco	Odyssey Investment Partners	US	US	-	-	-
Mar-22	Empire Precision Plastics	Kouza Capital	US	US	-	-	-
Mar-22	Whitfield Chemical Group	Azelis	UK	Belgium	-	-	-
Mar-22	Kraton	DL Chemical	US	South Korea	2,568	1.50x	8.8x

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Q1 2022 M&A Transactions (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Mar-22	AcoustaProducts	Avon Group Manufacturing	UK	UK	-	-	-
Mar-22	Coremetech	Innovative Emissions Control	US	US	-	-	-
Mar-22	Agrarian Organics	CGS International	UK	US	-	-	-
Mar-22	Pafra Adhesives	Gluecom	UK	Belgium	-	-	-
Mar-22	Assets of The Foam Company	GNG Group	UK	UK	-	-	-
Mar-22	Debros	LeBaronBrown Specialities	Canada	US	-	-	-
Mar-22	Distribuciones Industriales Variadas	Barentz	Guatemala	Netherlands	-	-	-
Mar-22	Apropet	Nexus Group	Colombia	Peru	-	-	-
Mar-22	Prima Inter-Chem	Omya	Malaysia	Switzerland	-	-	-
Mar-22	Milcut	Blachford	US	US	-	-	-
Mar-22	Melet Plastics	Blachford	US	Canada	-	-	-
Mar-22	Primasil Silicones	Quadion	UK	US	-	-	-
Mar-22	MAX Analytical Technologies	Thermo Fisher Scientific	US	US	-	-	-
Mar-22	Tucson Rubber	CECO Environmental	US	US	\$24	2.00x	-
Mar-22	PM Plastics	China Huaneng Group	US	China	-	-	-
Mar-22	Ha Bac Hung Phat Chemical	China Huaneng Group	Vietnam	China	-	-	-
Mar-22	Belchim Crop Protection	Certis	Belgium	Netherlands	-	-	-
Mar-22	Weltonhurst	Mergon Technologies	UK	Ireland	-	-	-
Mar-22	Y.S. Ashkenazi Agencies	Brenntag	Israel	Germany	-	-	-
Mar-22	Evenlode Foods	IMCD	UK	Netherlands	-	-	-
Mar-22	Petroplast	Induplast	Spain	Italy	-	-	-
Mar-22	Sable Marco	Sika	Canada	Canada	-	-	-
Mar-22	Talus Mineral / Biotron Laboratories	Aceto	US	US	-	-	-
Mar-22	Minova Business of Orica	Aurelius	Australia	Germany	129	-	-
Mar-22	Intertech Plastics	TriMas	US	US	-	-	-
Mar-22	Exxelor Polymer Resins Business of Esso Deutschland	The Compound Company	Germany	Netherlands	-	-	-
Mar-22	JEEN International Corporation / Botanicals Plus	Vantage Specialty Chemicals	US	US	-	-	-
Mar-22	Hywax	AWAX	Germany	Italy	-	-	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Q1 2022 M&A Transactions (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Feb-22	DAAM Galvanizing	AZZ	Canada	US	\$36	-	-
Feb-22	Peak Pipe Systems	SIMONA Aktiengesellschaft	UK	Germany	-	-	-
Feb-22	Performance Adhesives Business of Ashland	Arkema	US	France	1,650	4.58x	20.1x
Feb-22	Coating Specialists and Inspection Services	RMA Group	US	US	-	-	-
Feb-22	Sterne	Exsto	France	France	-	-	-
Feb-22	Exelead	Merck	US	Germany	780	-	-
Feb-22	NOWO Products	Perlon	Poland	Germany	-	-	-
Feb-22	Lucite International Japan	Midorikawa Chemical	Japan	Japan	-	-	-
Feb-22	UCY Polymers	Indorama	Czech Republic	Thailand	9	-	-
Feb-22	Norpartners	Entec Group	Norway	Norway	-	-	-
Feb-22	Buckeye Lumberton	Bast Fibre Technologies	US	Canada	-	-	-
Feb-22	MCT	Polyram	Germany	Israel	27	-	-
Feb-22	Alpkem	OQEMA	Slovenia	Slovenia	-	-	-
Feb-22	Khimji Paints	Hempel	Oman	Denmark	-	-	-
Feb-22	Aquasurtech	Sherwin-Williams	Canada	US	-	-	-
Feb-22	Bio-Shine	FEMSA	US	US	-	-	-
Feb-22	GlobalTech Plastics	Molded Dimensions	US	US	-	-	-
Feb-22	Plastiques Cellulaires Polyform	Polymos	Canada	Canada	-	-	-
Feb-22	PepSep	Bruker	Denmark	US	-	-	-
Feb-22	Foam Concepts	Foam Fabricators	US	US	-	-	-
Feb-22	StyLight Thermoplastic Composite Materials Business	Ensinger International	Germany	Germany	-	-	-
Feb-22	PSB	Agroservice	Switzerland	Italy	-	-	-
Feb-22	Business Assets of ProFlow	CES Energy Solutions	US	US	-	-	-
Feb-22	ATP Adhesive Systems	Arsenal Capital	Switzerland	US	-	-	-
Feb-22	Elkem Salten Energy Recovery Plant	Sinochem	Norway	Norway	-	-	-
Feb-22	Colorificio Migliavacca 1919	American Colors	Italy	US	-	-	-
Feb-22	Assets of Unión Químico Farmacéutica	Esteve Química	Spain	Spain	-	-	-
Feb-22	Spinnaker Coating	LINTEC	US	US	40	0.31x	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Q1 2022 M&A Transactions (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Feb-22	Global Epoxy Business of Hexion	Westlake	Netherlands	US	\$1,200	0.80x	-
Feb-22	Advanced Glass Technologies Business of Johnson Matthey	Fenzi Holdings	UK	Italy	237	-	-
Jan-22	Polyscope Polymers	Vertellus	Netherlands	US	-	-	-
Jan-22	Goex Powder	Estes Energetics	US	US	-	-	-
Jan-22	Nemco Resources	Groupe Crevier	Canada	Canada	-	-	-
Jan-22	MyChem	Maravai LifeSciences Holdings	US	US	240	-	-
Jan-22	Höfer Chemie	Bencis	Saarland	Amsterdam	-	-	-
Jan-22	Activa	Endura	Italy	Italy	-	-	-
Jan-22	Columbus Chemical Industries	China Huaneng Group	US	China	-	-	-
Jan-22	Biagro	Simbiose Agro	Argentina	Brazil	-	-	-
Jan-22	G.S.D.I	GIMV	France	Belgium	-	-	-
Jan-22	Chemical Tankers Inc.	Hafnia	UK	Bermuda	-	-	-
Jan-22	HSO Herbert Schmidt	Element Solutions	Germany	US	20	-	-
Jan-22	Apollo Chemicals	H.B. Fuller	UK	US	193	-	-
Jan-22	Bionema Bioinsecticides—NemaTrident and UniSpore	Syngenta	UK	Switzerland	-	-	-
Jan-22	Gemite	W. R. Meadows	Canada	US	-	-	-
Jan-22	ScandStick / Linerless	Grupo CCRR	Sweden	Brazil	-	-	-
Jan-22	Dutchland Plastics	Tank Holdings	US	US	-	-	-
Jan-22	Nitrosul Explosivos	Austin Powder	Brazil	US	-	-	-
Jan-22	Cromology	Nippon Paint	France	Australia	1,322	1.83x	18.0x
Jan-22	Deer Park Refining Limited Partnership	Petróleos Mexicanos	US	Mexico	1,192	-	-
Jan-22	Polytechnisch Bedrijf Bvba	Holcim	Belgium	Switzerland	-	-	-
Jan-22	Specialty-Chemicals Ludwigshafen	Solenis	Germany	Germany	-	-	-
Jan-22	Chemisphere Corporation	Chemsolv	US	US	-	-	-
Jan-22	Eagle Alcohol	Alto Ingredients	US	US	29	0.84x	-
Jan-22	Chemcel	Barentz	Mexico	Netherlands	-	-	-
Jan-22	Trinity Specialty Compounding	Benvic	US	US	-	-	-
Jan-22	Precision Plastics	Titus International	US	UK	-	-	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

Select Q1 2022 M&A Transactions (cont'd)

(\$ in millions)

Closing Date / Status	Target Company	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM	
						Revenue	EBITDA
Jan-22	Juniper Acquisitions	International Process Plants and Equipment	US	US	-	-	-
Jan-22	Fourny	H.B. Fuller	Belgium	US	\$18	2.00x	7.6x
Jan-22	Chemsolv	OpenGate Capital	US	US	-	-	-
Jan-22	Di-Methylolpropionic Acid Business of GEO	Perstorp	US	Sweden	-	-	-
Jan-22	Allied Plastics	All-State Industries	US	US	-	-	-
Jan-22	Biojet	Exxon Mobil	Norway	US	-	-	-
Jan-22	General Chemical & Supply	Fomento Económico Mexicano	US	US	-	-	-
Jan-22	Innoleo	Biosynthetic Technologies	US	US	-	-	-
Jan-22	S.A.P.I.C.I.	DIC	Italy	Italy	-	-	-
Jan-22	Resins Business of SMAC	Mapei SpA	France	Italy	-	-	-
Jan-22	Tag Automotive	The Taurus Group	Spain	Spain	-	-	-
Jan-22	Tecnufar Iberica	Oquema	Spain	Germany	-	-	-
Jan-22	Plastic Components	Rosti Group	US	Sweden	-	-	-
Jan-22	Terracon Corporation	ChargePoint Technology	US	UK	-	-	-
Jan-22	Lirsa	Arrigoni	Italy	Italy	-	-	-
Jan-22	Faradion	Reliance New Energy Solar	UK	India	128	-	-
Jan-22	Autoroll	Indutrade	UK	Sweden	-	-	-
Jan-22	Andronaco Industries	EagleTree Capital	US	US	-	-	-
Jan-22	Callahan Chemical	Tilley-Phoenix	US	US	-	-	-
Jan-22	Hylon-Koburn Chemicals	Imperial Dade	US	US	-	-	-
Jan-22	Heathland	Trinseo	Netherlands	US	34	-	-
Jan-22	Pigments Business of Clariant	Heubach	Switzerland	Switzerland	951	-	11.4x
Jan-22	Flint Hills Resources Propylene Business	Invista	US	US	-	-	-

Source: Capital IQ, Mergermarket, Pitchbook and company data

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