

CHEMICALS & MATERIALS

Quarterly Review



Q3 2024



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LINCOLN INTERNATIONAL STATEMENT

The need for continued innovation and macro tailwinds make the agrochemicals segment an attractive one for private capital. Continued shifts from the majors creates opportunities in terms of dislocation and platform building. The outcome from the ADAMA process merits close monitoring in the near-term as a highly attractive opportunity though facing short-term headwinds in terms of inventory de-stocking in conjunction with crop commodity prices coming in. This is an area where a level of patience (and leverage breathing room) can be highly beneficial in ensuring the right support for a successful outcome. We would particularly highlight the high-growth and need, for biostimulants and plant growth regulators as areas to focus in on.

AgChem Article Overview

by Lincoln International's global chemicals and materials team

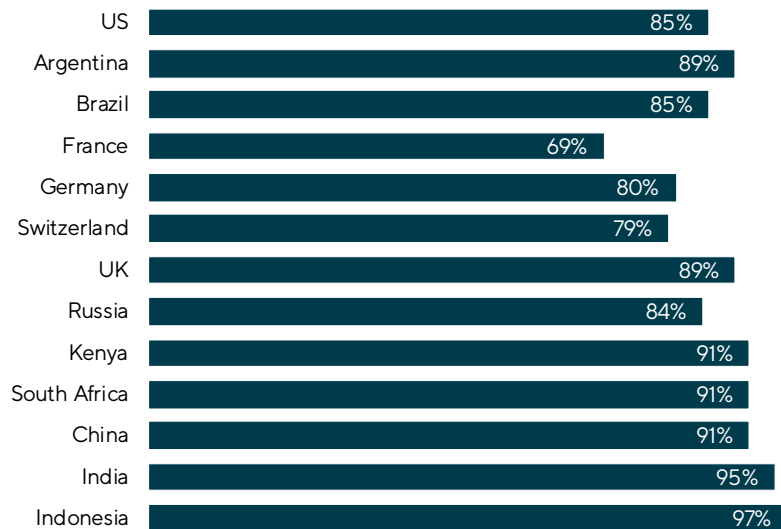
The global agrochemicals market is estimated to be close to \$400 billion today, with fertilizers the largest share. For purposes of this article, we will focus on the non-fertilizer segments of the agrochemicals market given their higher growth potential and less commoditized nature. The primary categories after fertilizers can be thought of as (i) crop protection chemicals, (ii) plant growth regulators and (iii) agricultural seeds. The crop protection market is estimated at close to \$80 billion and is driven by food security and changing agronomic conditions. The seedmarket is estimated around \$50 billions with significant growth expected from the genetically modified seed market over the next decade. The largest seed categories being corn and soybeans. Plant growth regulators are a smaller portion of the market today (approximately \$3 billion), though is the highest anticipated growth category based on their outsized boost to performance in relation to their cost.

The agrochemicals market benefits from multiple key themes that are highly underwritable, including (i) global population growth, (ii) arable land limits, (iii) significant yield gaps still existing and (iv) a heightened focus on efficacy of solutions given global shifts in climate.

In terms of global population growth, with the world's population expected to grow from 7 billion to 9 billion by 2050, there will be a heightened focus on ensuring sufficient supply of food. This is nearly universally shared as one of the most important global challenges across countries, as can be seen in the below chart summarizing a survey from Edelman Berland's landmark The Agricultural Disconnect report.

THE CHALLENGE OF INCREASED FOOD PRODUCTION

(in millions)

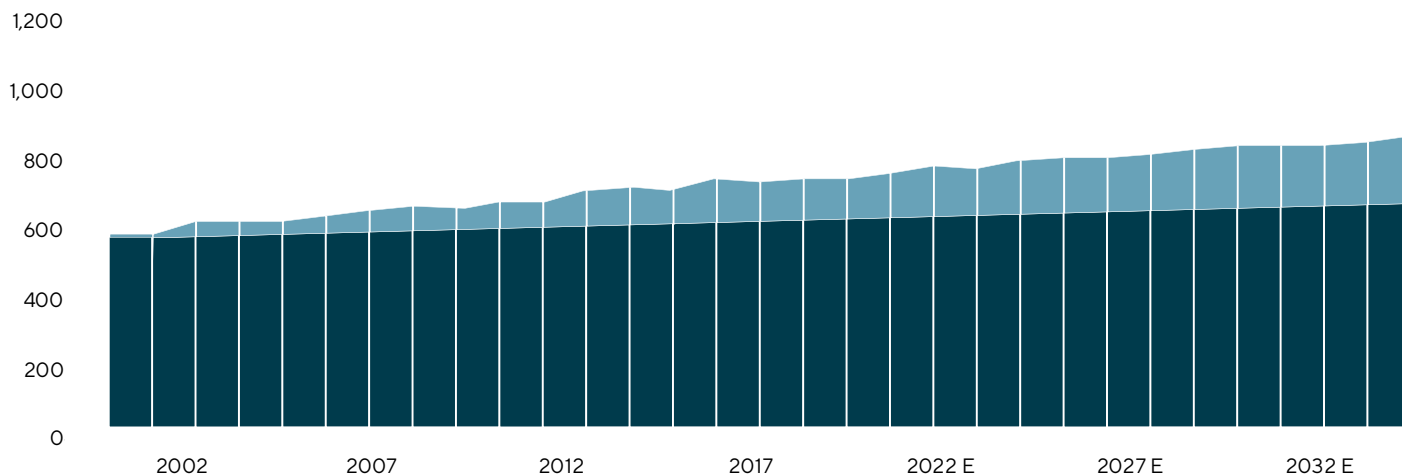


Arable land is limited to approximately 10% of the global land area. By certain estimates, the arable land globally has decreased by a third over the last 60 years due to global shifts in climate, erosion of soil and deforestation. The U.S. and India lead in terms of arable land mass with Russia, China and Brazil following up (as measured by size of arable land). This land set is not anticipated to further increase, which further increases the importance of agrochemical solutions. Increasing focus on precision agriculture and regenerative agriculture in particular can help to mitigate further reductions in particular.

Significant yield gaps underscore the opportunity and role agrochemicals can play in further improving production without further expanding the amount of land utilized for development. While not solely the domain of agrochemicals, they certainly have a meaningful role to play in closing the yield gaps, alongside soil management and strengthening of market accessibility. This is an area where next-level biostimulants and adjuvants have particularly important roles to play. Select adjuvants have shown the ability to more than double the yield per acre when properly deployed.

ADDITIONAL AREA NEEDED AT 2002 YIELD LEVEL (MIL HA)

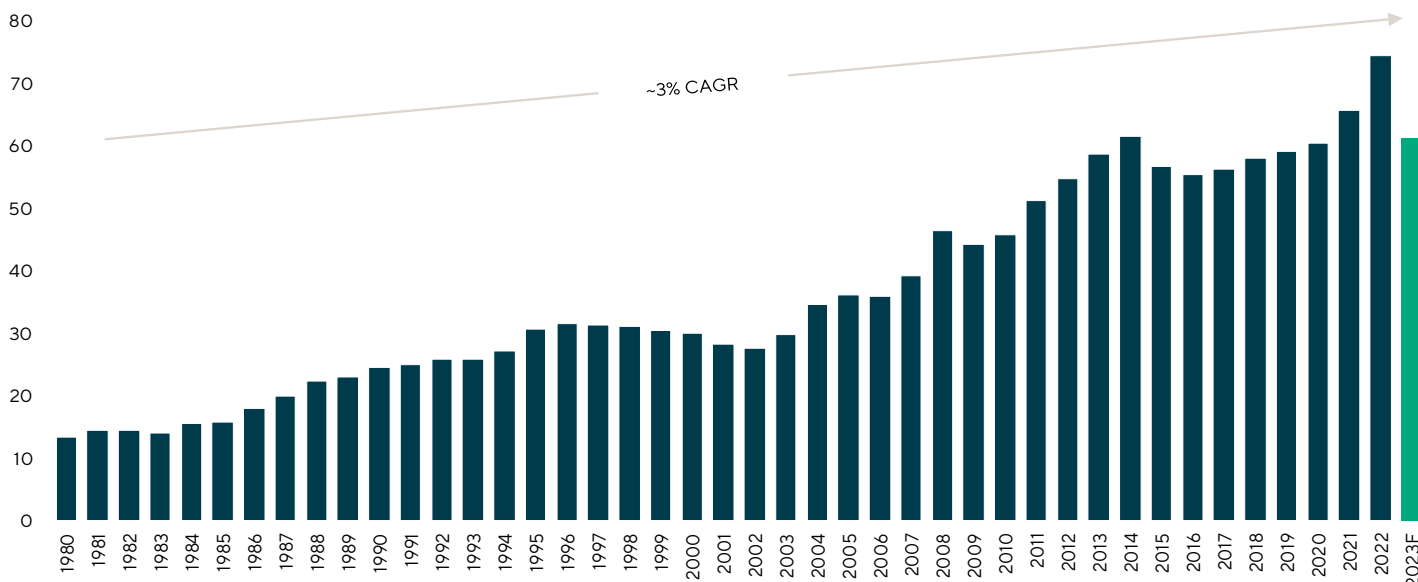
(in millions)



With sensitivity to the deployment of legacy pesticides, an increasing consideration for consumers and constituents, the ability of certain agrochemicals to boost efficacy of existing solutions is another way to increase productivity, while lessening the deployment of pesticides and insecticides. The ability for agrochemicals to either be mixed in to enhance a base formulation or applied in conjunction with the existing chemicals provides for a highly complementary solution set that does not disrupt the existing go to market paths.

The historical crop protection market trends provides a high-level view as to the year-to-year trends in the space. While the long-term growth trajectory is favorable, the year-to-year movements can be not fully linear. The patience in hold period, as well as leverage headspace is important for this sector. In 2009, the market was not immune from the great recession, though still held up reasonably well in comparison to other chemical sub-sectors. In 2015, the market pulled back due to overstuffed inventory channels and Brazil-specific dynamics (e.g., introduction of a new set of genetically modified crops). In 2022 and 2023, the segment saw the build up of inventory during the supply chain crisis before the unwinding in 2023 and into the first half of 2024 in certain segments.

HISTORICAL CROP PROTECTION MARKET: CONTINUED GROWTH TRENDS



Sources: American Chemistry Council, Bloomberg, JP Morgan, Morningstar, Plus500, Rappaport Reiches, The Wallstreet Journal

While the agrochemicals market features a number of majors (depending on sub-segment), there is ample opportunity to differentiate with new formulations particularly on the crop protection chemicals and plant growth regulators side. Players of note include BASF, Bayer, Corteva, FMC, Sumitomo, Syngenta and Verdesian.



The agrochemicals market represents an attractive segment within chemicals for private capital given the clear macro tailwinds and need for continued innovation. There is also an opportunity to win with service and responsiveness that plays well in navigating the competitive universe of well-capitalized players. For companies continuing to scale, attention should be paid to go-to market strategy by region globally with North America being in many cases distributor driven, while Central America is principally push-and-pull and Latin America is dominated by the large farmer contingent. The mix of commodity vs. specialty crops and row crops vs. permanent crops can also drive different purchasing habits. The sector remains ripe for opportunity in terms of capital deployment and further roll-up with a natural strategic exit option frequently existing.

Market Intelligence

From a macro perspective, Q3 2024 began to show signs of the turning wave (to the positive). At long last, the Fed cut interest rates by 50 basis points, launching its first cycle of easing since the pandemic. The decision to cut rates boosted dividend-focused stocks, with the utilities sector ending the quarter as the S&P 500's top performer, gaining 18%. Sectors dominated by small-cap and value stocks, like Industrials, also performed well. Meanwhile, the AI stock craze that inflated returns in the first half of 2024 is fading. The tech-heavy Nasdaq underperformed the broader market, while NVIDIA and the other "Magnificent 7" stocks collectively lost around \$1.3 trillion in market value at one point in August. A key feature of Q3 was the re-emergence of a negative correlation between bonds and equities, helping to smooth volatility. Many investors, seeing signs of economic stabilization, are now confident that the central bank has controlled inflation without pushing the U.S. into recession.

Compared to the rest of the public market, the Chemicals & Materials sector performed well in Q3. Lincoln's Chemicals Index ended the quarter up 12.2% compared to the prior quarter, beating the S&P 500's growth rate of 5.5%. Data from the American Chemistry Council supports this cautious optimism, with the 13-week moving average of chemical railcar loadings, a leading indicator, up 4.5%² on September 28th. Chemical companies performed particularly well in August, with construction chemical spending rising by 2.3% (7.4% higher than the prior year). In the same month, the U.S. produced 8.9 billion pounds of major plastic resins, an increase of 6.9% compared to the prior month. However,

the chemicals market slightly contracted in September; while supplier inventories remained steady, North American demand showed signs of softening. The Institute for Supply Management (ISM) Manufacturing PMI® report indicated declines in production, new orders, employment and order backlogs for chemical companies in September. This September downturn is a cautionary signal for the remainder of the year.

Given the recent rate cuts, the spotlight now turns to the M&A markets. Several key strategic companies are considering divesting portions of their businesses. The German chemical giant BASF is preparing its agricultural chemicals business for an initial public offering (IPO) over the next few years as part of a larger restructuring effort. This segment, which produces crop protection products like herbicides and fungicides, reported about approximately \$11 billion in sales last year. If valued in line with its publicly traded peers, the business could be worth more than approximately \$22 billion³. At the same time, Japanese chemical producer Mitsubishi Chemical Group is looking to sell its pharmaceutical unit for approximately \$4 billion, though the company has made the requisite statement that they may not decide to proceed with the sale. On the sponsor side, buyout firm Carlyle is revitalizing its IPO plans for the chemical firm Nouryon, with a target date hope of 2025. Private equity firms are preparing for a more favorable exit environment after a period that has seen deal-making stunted by destocking, inflation, higher interest rates and valuation pressures.

Sources: American Chemistry Council, Bloomberg, JP Morgan, Morningstar, Plus500, Rappaport Reiches, The Wallstreet Journal

(1) Apple, Microsoft, Google parent Alphabet, Amazon, Nvidia, Meta Platforms and Tesla

(2) Y/Y (13-week MA)

(3) Calculated using 2023 average 1.08 exchange rate

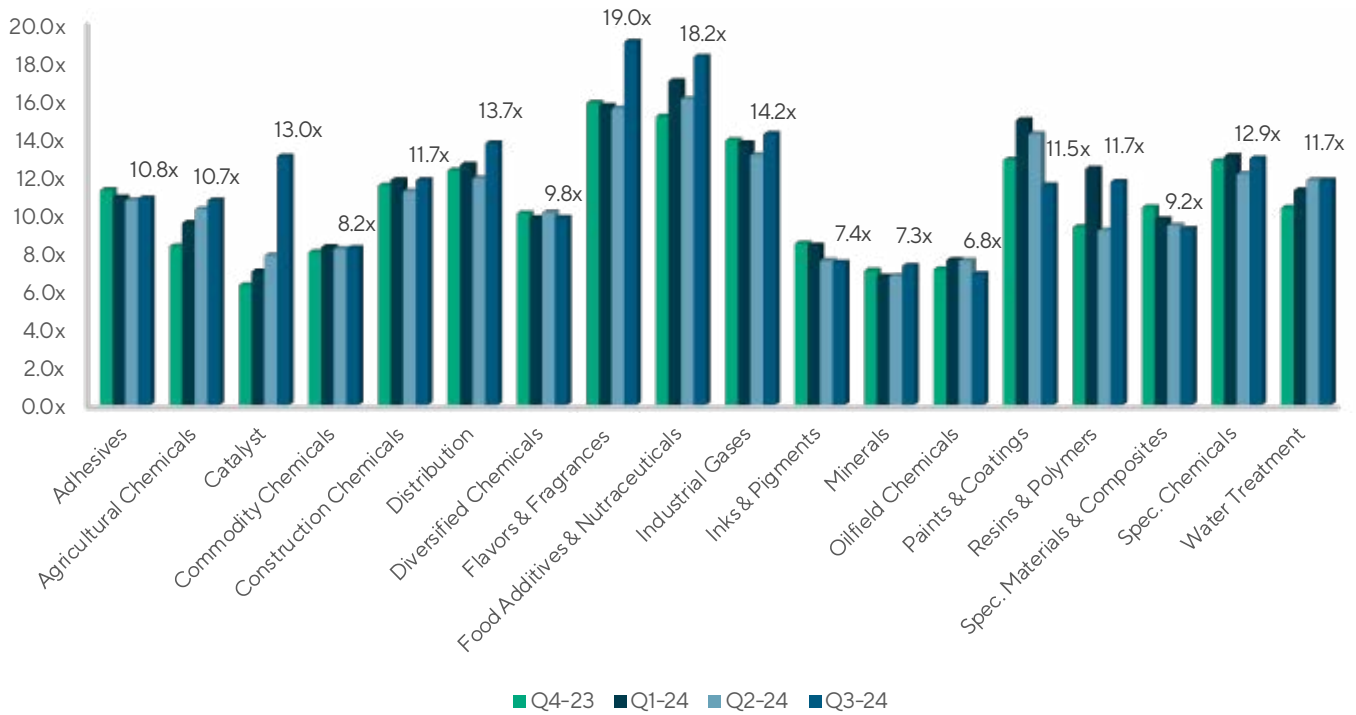
PUBLIC COMPANY VALUATION STATISTICS AS 09/30/24

Sector	Number of Companies	Quarterly Stock Performance	% of 52 Week High	EV / LTM		P / E Multiple	Net Debt / LTM EBITDA	Q3 2024 LTM Growth		Q3 2024 LTM Margin	
				Revenue	EBITDA			Revenue	EBITDA	Gross	EBITDA
Adhesives	4	22.4%	95.2%	2.06x	10.8x	24.3x	1.7x	3.8%	6.5%	38.3%	19.1%
Agricultural Chemicals	14	(17.8%)	83.2%	1.96x	10.7x	16.7x	1.2x	5.8%	14.0%	23.3%	14.8%
Catalyst	3	(45.2%)	59.1%	0.87x	13.0x	26.1x	0.7x	5.0%	13.4%	1.3%	(2.2%)
Commodity Chemicals	13	5.1%	82.0%	1.32x	8.2x	18.5x	2.4x	4.8%	17.7%	21.7%	14.6%
Construction Chemicals	11	50.3%	92.2%	2.46x	11.7x	20.9x	2.4x	5.3%	8.4%	32.9%	18.2%
Distribution	5	40.9%	85.2%	1.69x	13.7x	23.6x	2.8x	6.0%	10.5%	22.4%	10.3%
Diversified Chemicals	16	(7.7%)	83.5%	1.29x	9.8x	19.9x	1.8x	6.6%	20.5%	23.6%	12.1%
Flavors & Fragrances	9	37.2%	94.1%	3.07x	19.0x	25.0x	-0.9x	4.8%	9.2%	39.1%	15.6%
Food Additives & Nutraceuticals	3	(0.8%)	83.9%	4.61x	18.2x	23.0x	1.7x	7.8%	7.8%	42.5%	24.4%
Industrial Gases	6	27.3%	90.9%	4.25x	14.2x	24.1x	2.2x	7.9%	9.5%	39.6%	26.1%
Inks & Pigments	5	37.4%	91.6%	0.68x	7.4x	12.3x	0.5x	3.3%	8.7%	11.1%	6.2%
Minerals	8	(38.0%)	68.0%	1.85x	7.3x	21.8x	1.5x	12.9%	30.6%	20.9%	18.2%
Oilfield Chemicals	4	49.7%	75.3%	1.31x	6.8x	17.4x	0.9x	(1.0%)	11.0%	24.1%	15.7%
Paints & Coatings	8	23.0%	91.5%	2.89x	11.5x	21.2x	1.7x	5.3%	6.5%	34.0%	14.0%
Resins & Polymers	9	(1.0%)	85.2%	1.09x	11.7x	14.9x	6.2x	5.4%	28.5%	16.3%	7.2%
Spec. Materials & Composites	8	(1.0%)	86.2%	1.56x	9.2x	21.6x	2.3x	5.1%	12.8%	25.1%	14.4%
Spec. Chemicals	10	(7.3%)	82.8%	2.34x	12.9x	25.6x	2.4x	7.6%	12.5%	31.1%	17.3%
Water Treatment	4	24.4%	92.5%	2.31x	11.7x	21.1x	1.7x	5.3%	4.9%	28.0%	17.3%
Mean		9.6%	84.3%	2.00x	11.2x	20.5x	1.9x	5.8%	14.3%	26.4%	14.6%

(1) P/E multiple excluded due to high degree of recent volatility

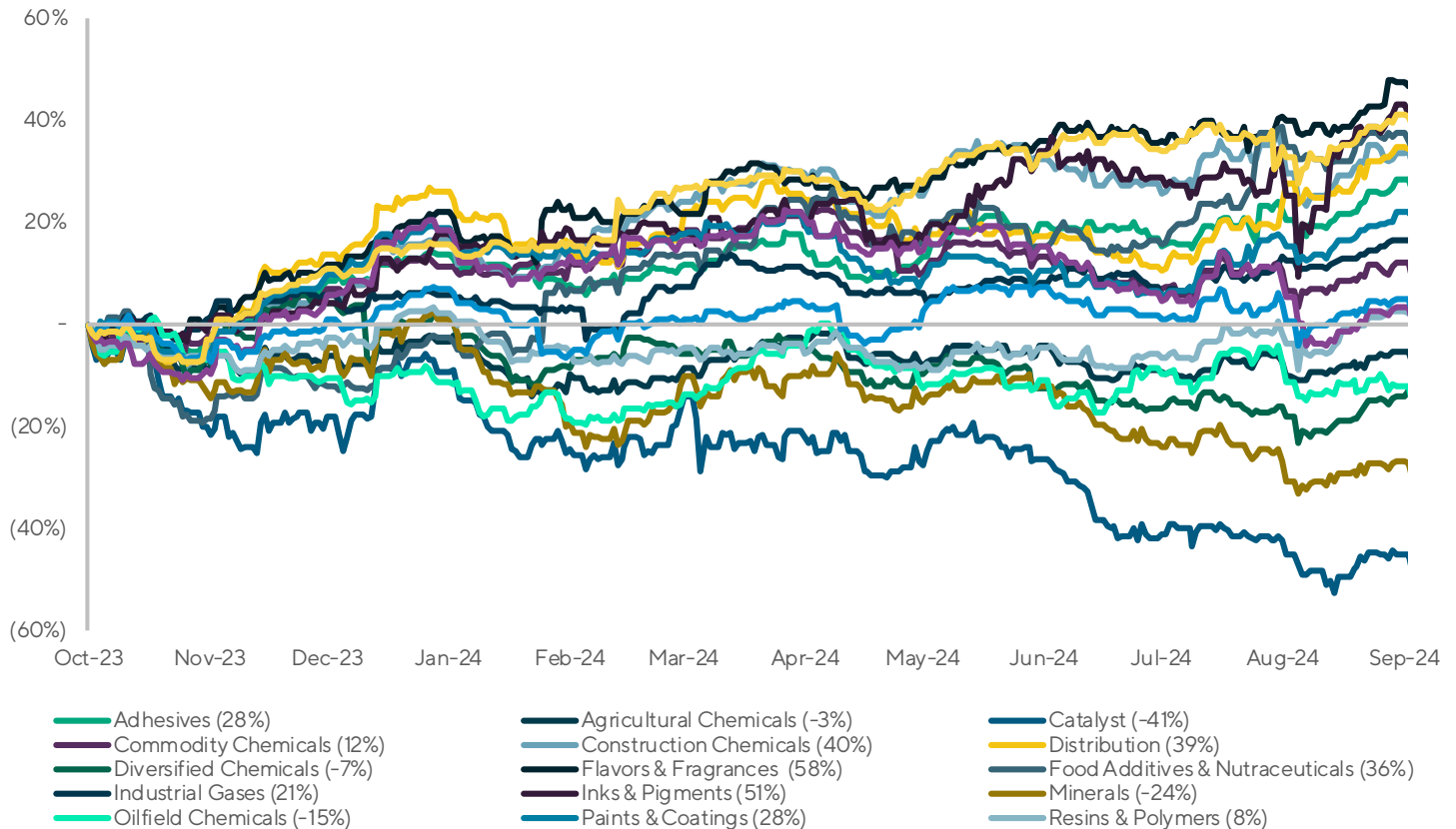
Chemicals & Materials Market Update

ENTERPRISE VALUE / LTM EBITDA



Note: The above multiples are based on the mean for the past four quarters for each corresponding sub-sector

1-YEAR STOCK PERFORMANCE BY CHEMICALS SUB-SECTOR



Note: Calculated based on an average of publicly traded companies in the sector

SELECT Q3 2024 M&A TRANSACTIONS

(USD in millions)

Closing Date/ Status	Target	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM		EBITDA Margin
						Revenue	EBITDA	
Announced	P&O Chemical	OCI Company	South Korea	South Korea	\$79	-	-	-
Announced	ADB Sealant	Applied DB	Thailand	Thailand	-	-	-	-
Announced	Hortimex	Azelis	Poland	Belgium	-	-	-	-
Announced	UW Interco	Apogee Enterprises	US	US	240	-	-	-
Announced	San-Dia Polymers	Nantong JiangTian Chemica	China	China	40	0.31x	-	-
Announced	Wake Stone Corporation	Vulcan Materials	US	US	-	-	-	-
Announced	PPG's Silicas Products Business	Qemetica	US	Poland	310	-	-	-
Announced	Daewon Chemical	BGFecomaterials	South Korea	South Korea	100	1.22x	-	-
Announced	Samsung SDI Wuxi	Wuxi Hengxin Optoelectronic Materials	China	China	524	0.69x	-	-
Announced	OCI Methanol	Methanex Corporation	Netherlands	Canada	2,021	-	7.5x	-
Announced	Weiburger Graphics	Stahl	Germany	Netherlands	-	-	-	-
Announced	Organ Eco Tech High Molecular Polymer Business	Exion Group Company	South Korea	South Korea	-	-	-	-
Announced	Proquiel Químicos	Manuchar	Chile	Belgium	-	-	-	-
Announced	Latin Resources	Pilbara Minerals	Australia	Australia	387	-	-	-
Announced	Ovriver Group	Saint-Gobain	Mexico	France	815	-	13.1x	-
Announced	Magee Plastics	Trelleborg	US	Germany	-	-	-	-
Announced	USALCO	The Jordan Company	US	US	-	-	-	-
Announced	PfP Industries	SNF	US	France	-	-	-	-
Announced	Carver Sand & Gravel	Heidelberg Materials	US	US	-	-	-	-
Announced	Parker Hannifin Corporation Composites & Fuel Containment	SK Capital Partners	US	US	-	-	-	-
Announced	Impag	DPE Investment	Switzerland	Germany	-	-	-	-
Announced	Flocculants Business of BASF	Solenis	Germany	US	-	-	-	-
Announced	Two Chemical Firms of CSRC	Longxing Chemical	China	China	-	-	-	-
Announced	Delta Tecnic	Investindustrial	Spain	Luxembourg	-	-	-	-
Announced	Imd	Fine Semitech	South Korea	South Korea	16	2.52x	-	-
Announced	Highway Materials	Heidelberg Materials	US	US	-	-	-	-
Announced	Specialty Solutions Business of FMC	Envu	US	US	350	-	-	-
Sep-24	Arora Matthey	Ravindra Heraeus	India	India	-	-	-	-
Sep-24	Calcium Products	HBM Holdings	US	US	-	-	-	-
Sep-24	Gotham Refining Chemical	Water Engineering	US	US	-	-	-	-

Sources: American Chemistry Council, Bloomberg, JP Morgan, Morningstar, Plus500, Rappaport Reiches, The Wallstreet Journal

SELECT Q3 2024 M&A TRANSACTIONS (CONT.)

(USD in millions)

Closing Date/ Status	Target	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM		EBITDA Margin
						Revenue	EBITDA	
Sep-24	CGP Materials	HanWool Materials Science	South Korea	South Korea	-	-	-	-
Sep-24	Clearwater Industries	EAI Water	US	US	-	-	-	-
Sep-24	G.M. Cataforesi	Argos Surface Technologies	Italy	Italy	-	-	-	-
Sep-24	Lakeside Painting	Painters USA	US	US	-	-	-	-
Sep-24	Fluids Systems Segment of Newpark Resources	SCF Partners	US	US	\$109	-	-	-
Sep-24	Grupa Azoty Polymer Production Assets	Orlen	Poland	Poland	-	-	-	-
Sep-24	Clean Solutions Group	Wind Point Partners	US	US	-	-	-	-
Sep-24	Fairystone Fabrics	Shawmut Infinite	US	US	-	-	-	-
Sep-24	PolymerExpert	Société La Biochimie Appliquée	France	France	-	-	-	-
Sep-24	Industrial Water Technologies	Rochester Midland Corporation	US	US	-	-	-	-
Sep-24	Pony Leather Corporation	HsinLi Chemical Industrial	Taiwan	Taiwan	25	-	-	-
Sep-24	Tecnipaint Pintura	Aercal Aerospace	Spain	Spain	-	-	-	-
Sep-24	ATL	ADDEV Materials	US	France	-	-	-	-
Sep-24	Norit UK Reactivation Business	Kemira	UK	Finland	-	-	-	-
Sep-24	Flavours and Essences UK	Turpaz Industries	UK	Israel	29	-	-	-
Aug-24	Evonik Superabsorbents	ICIG	Germany	Luxembourg	-	-	-	-
Aug-24	Advanced Industrial Coatings	Crawford United Corporation	US	US	-	-	-	-
Aug-24	Ashland's Nutraceuticals Business	Turnspire Capital Partners	US	US	-	-	-	-
Aug-24	Iowa Fertilizer Company	Koch	US	US	3,600	-	-	-
Aug-24	Graphics	Mill Rock Packaging Partners	US	US	-	-	-	-
Aug-24	RMS Pro Finishes	Painters Supply & Equipment	US	US	-	-	-	-
Aug-24	Abelel	T. Hasegawa	US	US	48	5.78x	-	-
Aug-24	Plant Health Care	PI Industries	US	India	40	3.56x	-	-
Aug-24	Omkar	Adani Wilmar	India	India	7	4.03x	-	-
Aug-24	Assets of Wright-Mix Material Solutions	Jennmar Corporation	US	US	-	-	-	-
Aug-24	Ultra-Pak	Paladin Holdings	US	US	-	-	-	-
Aug-24	HS Butyl	H.B. Fuller	UK	US	-	-	-	-
Aug-24	US Polysoprene Chemical Facility	U.S. Medical Glove Company	US	US	-	-	-	-
Aug-24	Li-Metal Lithium Metal Business	Arcadium Lithium	Canada	Ireland	11	-	-	-
Aug-24	Vinaldom	Sika	Dominican Republic	Switzerland	-	-	-	-

Sources: American Chemistry Council, Bloomberg, JP Morgan, Morningstar, Plus500, Rappaport Reiches, The Wallstreet Journal

SELECT Q3 2024 M&A TRANSACTIONS (CONT.)

(USD in millions)

Closing Date/ Status	Target	Acquiring Company	Target Location	Acquirer Location	Enterprise Value	EV / LTM		EBITDA Margin
						Revenue	EBITDA	
Aug-24	Monarch Chemicals	Brenntag	UK	Germany	-	-	-	-
Aug-24	Delta Petroleum Company	PSC Group	US	US	-	-	-	-
Jul-24	Custom Ag Formulators	ICL Group	US	Israel	\$60	-	-	-
Jul-24	Millennitek	Pelican Energy Partners	US	US	-	-	-	-
Jul-24	Pigments Business of Merck	GNMI	Germany	China	-	-	-	-
Jul-24	Delta Fluid Technology	Technikraft	UK	UK	-	-	-	-
Jul-24	IPC	NCI Gestion	France	France	-	-	-	-
Jul-24	LA-CO Industries	MPE Partners	US	US	-	-	-	-
Jul-24	Benzaco	LSC Environmental Products	US	US	-	-	-	-
Jul-24	MCIP	Milestone Capital	US	US	-	-	-	-
Jul-24	Louisiana Pigment	Kronos Worldwide	US	US	385	-	-	-
Jul-24	Anitox	Iluma Alliance	US	US	-	-	-	-
Jul-24	Welch Fluorocarbon Inc.	UFP Technologies	US	US	41	2.71x	11.5x	23.5%
Jul-24	Jysk Kemi	Christeyns	Denmark	Belgium	-	-	-	-
Jul-24	True Blue Chemicals	Christeyns	Australia	Belgium	-	-	-	-
Jul-24	Allegrini	Christeyns	Italy	Belgium	-	-	-	-
Jul-24	Liquid Fertilizer Assets of Yara	FassAgro	Norway	Brazil	-	-	-	-
Jul-24	Norflex	Revolution Sustainable Solutions	US	US	-	-	-	-
Jul-24	Assets and Operations of Industrial Chemicals Corporation	Brenntag	US	Germany	-	-	-	-
Jul-24	CoverFlexx	Axalta	US	US	295	3.78x	-	-
Jul-24	STR Tecoil	TotalEnergies	Finland	France	-	-	-	-
Jul-24	RG Dispertants	Arclin	Canada	US	-	-	-	-

Sources: American Chemistry Council, Bloomberg, JP Morgan, Morningstar, Plus500, Rappaport Reiches, The Wallstreet Journal

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We are trusted investment banking advisors to business owners and senior executives of leading private equity firms and their portfolio companies and to public and privately held companies around the world. Our services include mergers and acquisitions advisory, private funds and capital markets advisory, and valuations and fairness opinions. As one tightly integrated team of over 1,000 professionals in more than 25 offices across 15 countries, we offer an unobstructed perspective on the global private capital markets, backed by superb execution and a deep commitment to client success. With extensive industry knowledge and relationships, timely market intelligence and strategic insights, we forge deep, productive client relationships that endure for decades. Connect with us to learn more at www.lincolninternational.com.

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