

CHEMICALS & PLASTICS NEWSLETTER

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To all of our clients and prospects, it's been great meeting with you in person again; we look forward to continuing our discussions throughout 2022. We hope that you find the newsletter to be a useful tool for your day-to-day activities, and we're happy to provide customized data requests as well. Please don't hesitate to reach out. In this issue of PNC's *Chemicals & Plastics Newsletter*, we highlight the third quarter 2022 market activity and provide insight into the trends that defined the quarter.

RECENT HEADLINES

There are a lot of things to keep an eye on as we head into the final quarter of 2022. For the global chemical industry, one of the most meaningful items on that watchlist will be natural gas supply in Europe. For some market participants, the impacts are very direct, but even in cases where natural gas is not a feedstock or a means of electricity, securing supply of key raw materials could be a challenge, and market disruptions have the very real potential to influence demand.

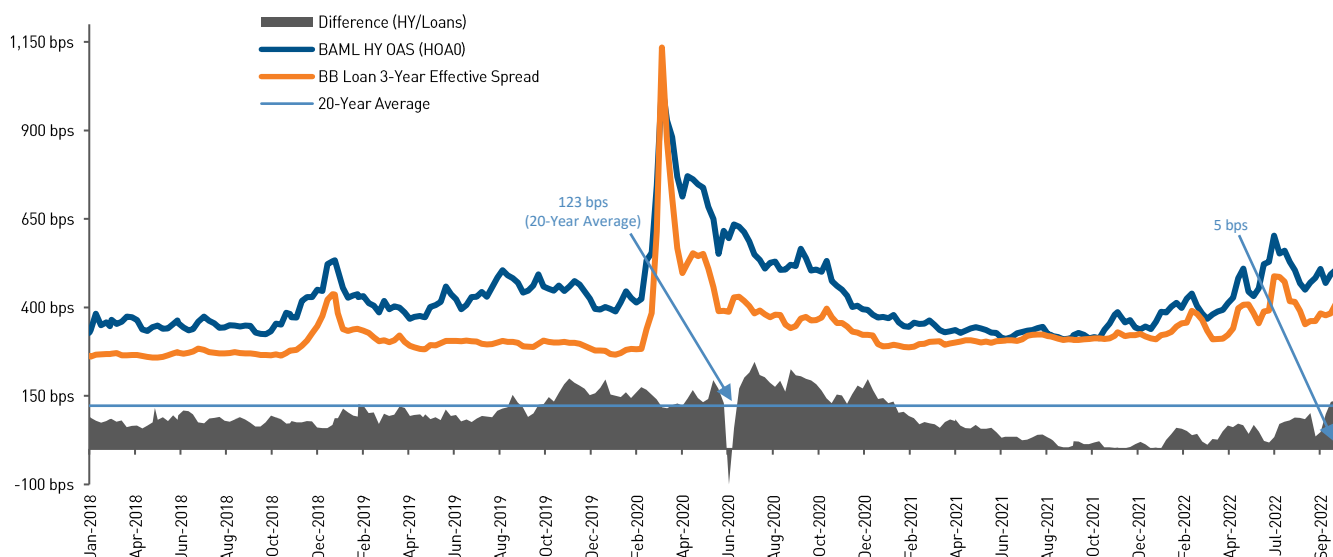
The country that stands to be impacted most in this is Germany, which is also home to the world's largest petrochemical facility. Germany has implemented a three-stage emergency gas plan (one being the lowest, three being the highest), which has been in phase two since June 23. At this point, it doesn't appear that a return to phase one is likely, so the natural question becomes "What triggers phase three and what are the impacts?" Phase three, or the emergency level, is to be declared "where there is exceptionally high gas demand, significant disruption of gas supply or other significant deterioration of the gas supply and all relevant market-based measures have been implemented, but the gas supply is insufficient to meet the remaining gas demand so that non-market based measures need to be additionally introduced..."¹ The main difference from phase two is that market forces will no longer rule, and the state will intervene to ensure gas supply and grid stability at the emergency level with a focus on ensuring supply to private households.

Germany has been taking measures to avoid a crisis rising to the emergency level, including extending the closing dates of coal-fired energy plants despite the country's push to move away from coal. Even with these energy measures, European competitiveness in the global chemicals industry will be challenged as gas prices rise relative to U.S. competition. Those in the U.S. could still be impacted as domestic producers increase exports to capture arbitrage opportunities in Europe and countries like Germany look to gobble up natural gas from other regions. While no one can know exactly where the war in Ukraine will lead, a lack of natural gas supply to the European continent stands to have some very real impacts as we head into the winter months.

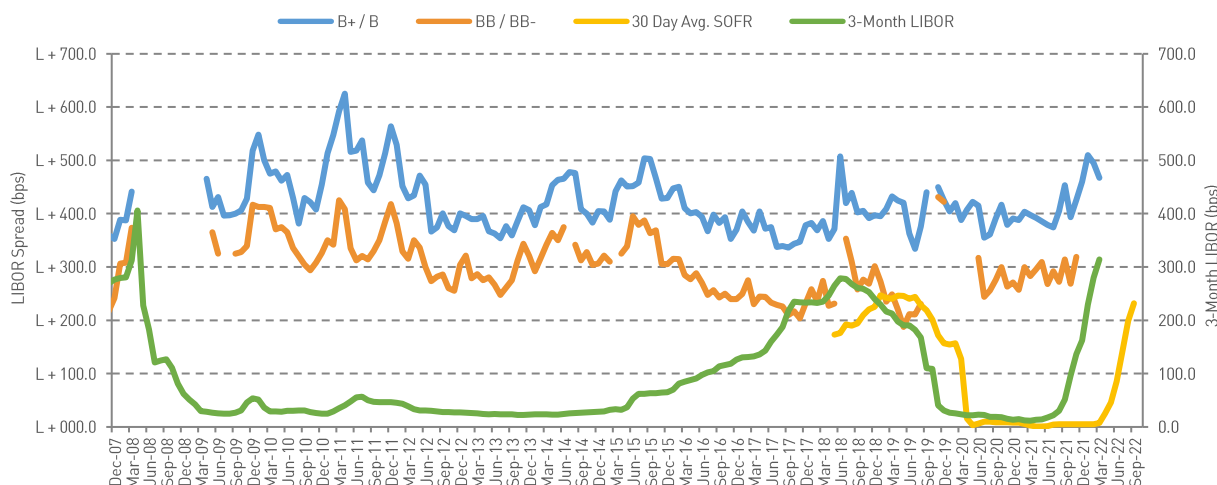
PRICING AND VOLUME UPDATE

- As a further illustration of the downturn in September, outflows from U.S. retail loan funds have escalated. For the week ended Sept. 28, investors pulled a net \$1.9 billion from loan-focused mutual funds and ETFs. It was the largest outflow since the week ended June 15, when \$2 billion exited the market, and extends the current negative run to 6 weeks for a total of roughly \$6.9 billion over that span.
- Prolonged volatile financial market conditions prompted by fears of slowed economic growth and rising inflation again curbed U.S. high-yield bond issuance. Pro forma volume for the full month was projected at \$9 billion, or the lower end of the range for overall September totals, LCD data show. For reference, in 2021, the month wrapped with borrowers clearing a combined \$43.8 billion in new paper.

HY Spread Less BB Loans



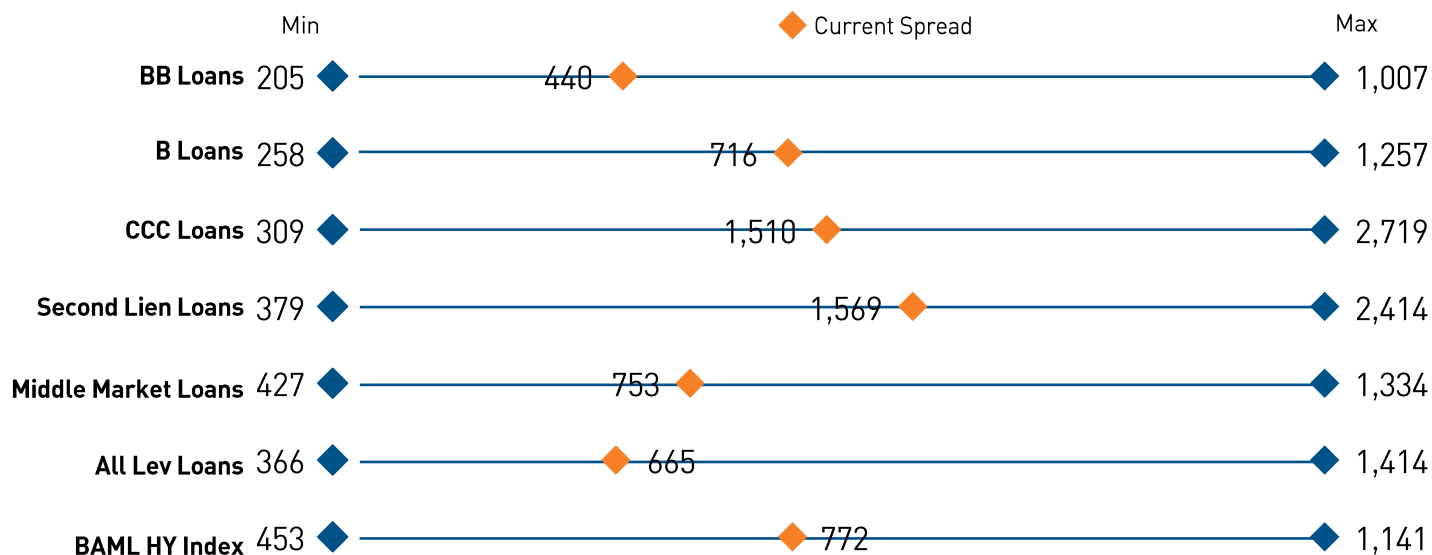
Institutional Loan LIBOR Spreads



Sources: LCD, FRED

PRICING AND VOLUME UPDATE *(Continued)*

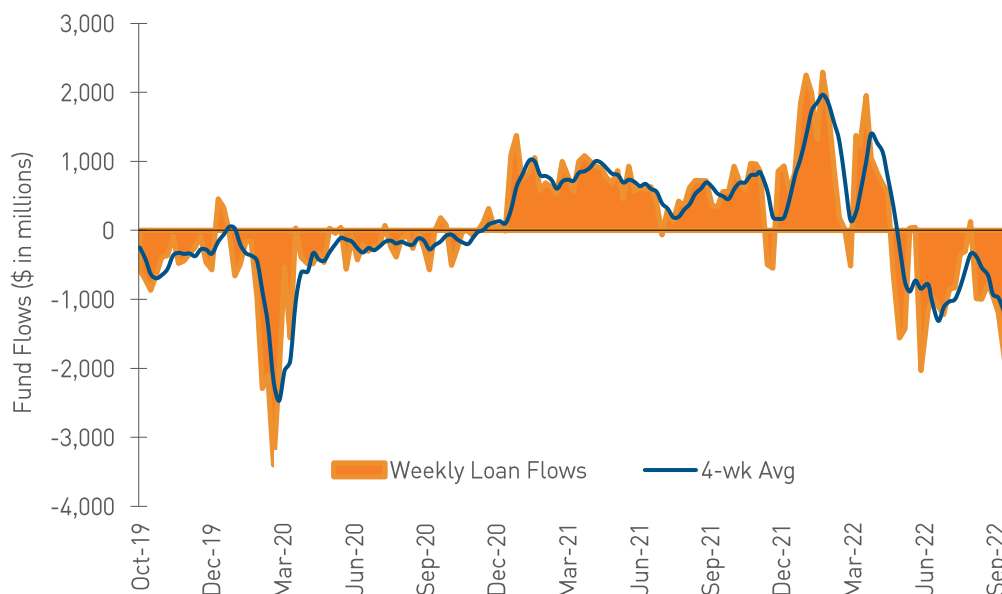
Average Secondary Loan Spreads Over LIBOR (2013 to Current)



Loan spreads assume a 3-year life.
Graph not to scale.

Source: LCD

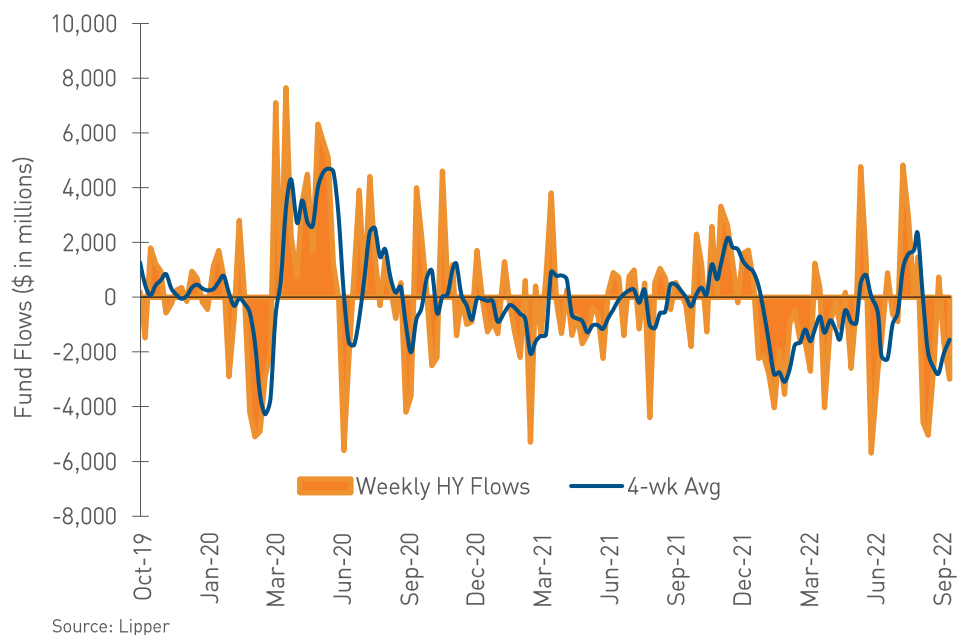
Loan Fund Flows



Source: Lipper

PRICING AND VOLUME UPDATE *(Continued)*

HY Fund Flows



THIRD QUARTER LENDING ACTIVITY

Date	Company	Tranche Size (Ms)	Tranche Type	Spread	Term (Years)	Rating
9/23/2022	Tokai Carbon Co Ltd	SAR 10,000	364-Day	-	1	- / -
9/22/2022	Itafos Inc	€ 200	TL	TSOFR+425	3	- / -
		€ 200	Revolver	TSOFR+225	3	- / -
9/20/2022	Robertet SA	€ 190	TL	-	5	- / -
9/17/2022	Mitsubishi Chemical Group Corp	€ 30,000	Revolver	-	1	- / -
9/16/2022	Nippon Sanso Holdings Corp	€ 25,000	364-Day	-	1	- / -
9/14/2022	Nutrien	\$2,000	364-Day	-	1	Baa2 / -
8/30/2022	Sherwin-Williams Co	\$2,250	Revolver	TSOFR+125	5	Baa2 / -
8/29/2022	Avient Corp	\$575	TLB	TSOFR+325	7	Ba2 / -
8/24/2022	SASA Polyester Sanayi AS	€ 583	TL	-	11	- / -
8/17/2022	Sumitomo Chemical Co Ltd	€ 40,000	Revolver	-	2	- / -
8/11/2022	Minerals Technologies Inc	€ 850	TLA	TSOFR+150	5	Ba3 / -
		\$850	Revolver	TSOFR+150	5	Ba3 / -
8/2/2022	Ameropa AG	\$347	Revolver	-	N/A	- / -
8/1/2022	Evonik Industries AG	JPY 250	Schuldschein	-	4	Baa2 / -
		JPY 250	Schuldschein	-	3	Baa2 / -
		JPY 250	Schuldschein	-	7	Baa2 / -
7/29/2022	MaxamCorp SAU	\$527	TL	-	5	- / -
		\$527	Revolver	-	5	- / -
7/27/2022	Mitsui Chemicals Inc	\$23,550	TL	-	10	- / -
7/26/2022	Showa Denko KK	€ 35,000	TL	-	7	- / -
7/22/2022	Koninklijke DSM NV	\$3,000	Other Loan	-	1	A3 / -
7/15/2022	Corbion NV	JPY 450	Revolver	-	5	- / -
7/13/2022	Advanced Petrochemical Co KSA	JPY 6,094	Other	-	13	- / -

Source: LoanConnector

THIRD QUARTER BOND ACTIVITY

Date	Company	Tranche Size (Ms)	Tranche Type	Spread	Term (Years)	Rating
8/8/2022	Sherwin-Williams Co	\$600	4.050%	T+85	2	Baa2 / BBB
8/8/2022	Sherwin-Williams Co	\$400	4.250%	T+110	3	Baa2 / BBB
7/26/2022	Avient Corp	\$725	7.125%	T+436	8	Ba3 / BB-
7/7/2022	Celanese US Holdings LLC	\$2,000	5.900%	T+288	2	Baa3 / BBB *-
7/7/2022	Celanese US Holdings LLC	\$1,750	6.050%	T+300	3	Baa3 / BBB *-
7/7/2022	Celanese US Holdings LLC	\$2,000	6.165%	T+313	5	Baa3 / BBB *-
7/7/2022	Celanese US Holdings LLC	\$750	6.330%	T+325	7	Baa3 / BBB *-
7/7/2022	Celanese US Holdings LLC	\$1,000	6.379%	T+338	10	Baa3 / BBB *-
7/7/2022	LG Chem Ltd	\$300	4.375%	T+140	3	A3 / BBB+

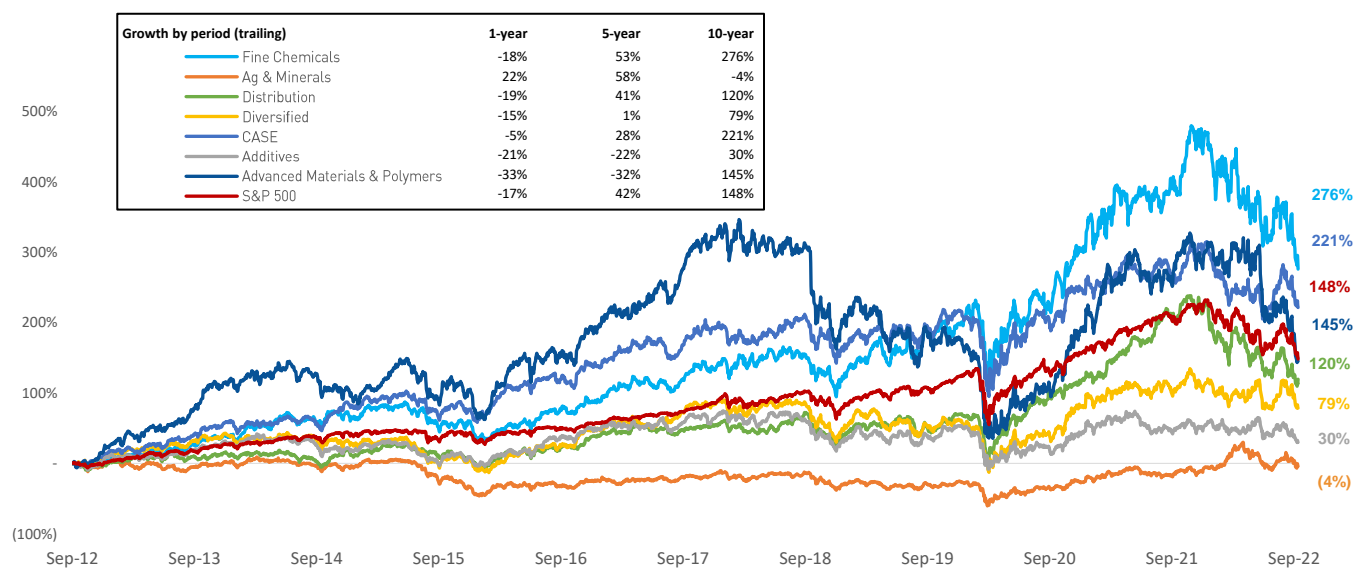
Source: PNC Debt Capital Markets

PUBLIC TRADING DATA

		Stock	Market	Enterprise	LTM			EV / LTM	Consensus 2022E		Net	Net Debt /	LTM FCF
Company	Ticker	Price	Cap.	Value	Revenue	EBITDA	EBITDA %	EBITDA	EBITDA	EV/EBITDA	Debt	LTM EBITDA	Conversion
Fine Chemicals (Pharma, F&B, Electronic Chem.)													
Balchem	BCPC	\$121.58	\$3,905	\$4,275	\$877	\$193	22.0%	22.1x	\$218	19.6x	\$369	1.9x	77.0%
Cabot Microelectronics	CCMP	-	-	-	\$1,263	\$366	29.0%	-	-	na	\$673	1.8x	87.9%
Element Solutions	ESI	\$16.27	\$3,992	\$5,683	\$2,620	\$503	19.2%	11.3x	\$563	10.1x	\$1,674	3.3x	89.9%
Entegris	ENTG	\$83.02	\$12,367	\$15,584	\$2,557	\$771	30.2%	20.2x	\$1,044	14.9x	\$3,217	4.2x	58.8%
International Flavors & Fragrances	IFF	\$90.83	\$23,157	\$35,569	\$12,635	\$2,627	20.8%	13.5x	\$2,566	13.9x	\$12,293	4.7x	82.3%
Sensient	SXT	\$69.34	\$2,915	\$3,415	\$1,412	\$247	17.5%	13.8x	\$252	13.5x	\$500	2.0x	72.6%
Fine Chemicals Median			\$3,948	\$4,979	\$1,984	\$434	21.4%	13.7x	\$408	13.9x		2.7x	79.6%
Ag & Minerals													
AgroFresh	AGFS	\$1.50	\$79	\$456	\$171	\$61	35.7%	7.5x	\$65	7.1x	\$215	3.5x	92.8%
American Vanguard	AVD	\$18.70	\$577	\$681	\$604	\$71	11.7%	9.7x	\$75	9.1x	\$104	1.5x	85.7%
CF Industries Holdings	CF	\$96.25	\$19,179	\$22,932	\$10,159	\$5,987	58.9%	3.8x	\$6,258	3.7x	\$828	0.1x	92.3%
Compass Minerals International	CMP	\$38.53	\$1,317	\$2,155	\$1,176	\$166	14.2%	12.9x	\$188	11.5x	\$839	5.0x	37.7%
CVR Partners	UAN	\$114.43	\$1,209	\$1,604	\$801	\$428	53.4%	3.8x	na	na	\$395	0.9x	93.2%
FMC	FMC	\$105.70	\$13,314	\$16,766	\$5,411	\$1,384	25.6%	12.1x	\$1,402	12.0x	\$3,433	2.5x	90.8%
LSB Industries	LXU	\$14.25	\$1,264	\$1,562	\$801	\$360	44.9%	4.3x	\$432	3.6x	\$297	0.8x	89.8%
Minerals Technologies	MTX	\$49.41	\$1,611	\$2,458	\$2,026	\$354	17.5%	6.9x	\$369	6.7x	\$814	2.3x	75.6%
Mosaic	MOS	\$48.33	\$16,687	\$20,139	\$16,555	\$5,575	33.7%	3.6x	\$7,460	2.7x	\$3,295	0.6x	77.5%
Nutrien	TSX:NTR	\$83.91	\$45,220	\$55,573	\$34,612	\$10,992	31.8%	5.1x	\$14,741	3.8x	\$10,992	1.0x	83.6%
Ag & Minerals Median			\$1,464	\$2,306	\$1,601	\$394	32.7%	6.0x	\$432	6.7x		1.2x	87.7%
Distribution													
Azelis	ENXTBR:AZE	\$22.36	\$5,228	\$6,243	\$3,697	\$406	11.0%	15.4x	\$445	14.0x	\$1,035	2.6x	94.7%
Brenntag	XTRA:BNR	\$61.17	\$9,451	\$12,029	\$18,162	\$1,446	8.0%	8.3x	\$1,773	6.8x	\$2,647	1.8x	84.0%
Hawkins Inc.	HWKN	\$38.99	\$819	\$982	\$840	\$102	12.1%	9.7x	\$93	10.6x	\$163	1.6x	62.6%
IMCD	ENXTAM:IMCD	\$120.22	\$6,846	\$7,963	\$4,277	\$504	11.8%	15.8x	\$527	15.1x	\$1,189	2.4x	98.2%
Univar	UNVR	\$22.74	\$3,793	\$6,254	\$10,885	\$1,083	9.9%	5.8x	\$1,055	5.9x	\$2,461	2.3x	87.4%
Distribution Median			\$5,319	\$7,108	\$7,581	\$793	10.9%	9.0x	\$791	8.7x		2.1x	85.7%
Diversified													
Albemarle	ALB	\$264.44	\$30,974	\$33,853	\$4,332	\$1,350	31.2%	25.1x	\$3,399	10.0x	\$2,664	2.0x	NM
Ashland	ASH	\$94.97	\$5,142	\$5,933	\$2,350	\$521	22.2%	11.4x	\$592	10.0x	\$791	1.5x	81.2%
Chemours	CC	\$24.65	\$3,824	\$6,487	\$6,933	\$1,320	19.0%	4.9x	\$1,503	4.3x	\$2,662	2.0x	75.9%
CSW Industrials	CSWI	\$119.80	\$1,848	\$2,193	\$665	\$143	21.5%	15.3x	\$125	17.5x	\$329	2.3x	88.4%
Eastman	EMN	\$71.05	\$8,726	\$13,533	\$10,912	\$2,286	20.9%	5.9x	\$2,037	6.6x	\$4,723	2.1x	73.6%
Ecolab	ECL	\$144.42	\$41,158	\$50,245	\$13,533	\$2,728	20.2%	18.4x	\$2,831	17.7x	\$9,062	3.3x	73.8%
Huntsman	HUN	\$24.54	\$4,943	\$6,485	\$9,343	\$1,376	14.7%	4.7x	\$1,360	4.8x	\$1,338	1.0x	77.8%
Ingevity	NGVT	\$60.63	\$2,307	\$3,404	\$1,516	\$435	28.7%	7.8x	\$457	7.4x	\$1,097	2.5x	72.4%
Koppers	KOP	\$20.78	\$434	\$1,322	\$1,792	\$165	9.2%	8.0x	\$229	5.8x	\$884	5.4x	27.4%
Olin Corp	OLN	\$42.88	\$6,226	\$9,069	\$9,848	\$2,832	28.8%	3.2x	\$2,549	3.6x	\$2,843	1.0x	92.3%
Ecovyst (fka PQ)	ECVT	\$8.44	\$1,154	\$1,902	\$743	\$175	23.5%	10.9x	\$272	7.0x	\$748	4.3x	66.9%
Schweitzer-Mauduit	SWM	\$0.27	\$427	\$720	\$1,069	\$233	21.8%	3.1x	na	na	\$316	1.4x	92.6%
Tredegar	TG	\$9.44	\$318	\$406	\$941	\$82	8.7%	4.9x	na	na	\$88	1.1x	64.1%
Diversified Median			\$3,824	\$5,933	\$2,350	\$521	21.5%	7.8x	\$1,360	7.0x		2.0x	74.9%
CASE (Coatings, Adhesives, and Sealants)													
Axalta	AXTA	\$21.06	\$4,645	\$7,955	\$4,635	\$728	15.7%	10.9x	\$832	9.6x	\$3,264	4.5x	81.7%
Carlisle	CSL	\$280.41	\$14,461	\$17,037	\$6,035	\$1,287	21.3%	13.2x	\$1,606	10.6x	\$2,577	2.0x	87.4%
Chase Corporation	CCF	\$83.57	\$787	\$671	\$316	\$77	24.3%	8.8x	na	na	(\$116)	(1.5x)	95.0%
HB Fuller	FUL	\$60.10	\$3,204	\$5,100	\$3,688	\$485	13.1%	10.5x	\$544	9.4x	\$1,896	3.9x	75.8%
PPG Industries	PPG	\$110.69	\$26,012	\$32,968	\$17,561	\$2,142	12.2%	15.4x	\$2,600	12.7x	\$6,847	3.2x	77.0%
Quaker Houghton	KWR	\$144.38	\$2,589	\$3,410	\$1,863	\$231	12.4%	14.7x	\$252	13.5x	\$821	3.5x	87.2%
RPM International	RPM	\$83.31	\$10,750	\$13,534	\$6,708	\$808	12.1%	16.7x	\$863	15.7x	\$2,783	3.4x	72.5%
Sherwin-Williams	SHW	\$204.75	\$52,773	\$64,968	\$20,780	\$3,043	14.6%	21.4x	\$3,581	18.1x	\$12,195	4.0x	85.0%
CASE Median			\$7,697	\$10,745	\$5,335	\$768	13.9%	14.0x	\$863	12.7x		3.5x	83.3%
Additives													
Cabot	CBT	\$63.89	\$3,597	\$4,947	\$4,113	\$654	15.9%	7.6x	\$723	6.8x	\$1,202	1.8x	69.3%
Innospec	IOSP	\$85.67	\$2,124	\$2,102	\$1,729	\$204	11.8%	10.3x	\$227	9.3x	(\$22)	(0.1x)	81.8%
NewMarket	NEU	\$300.83	\$3,012	\$3,911	\$2,585	\$371	14.4%	10.5x	na	na	\$898	2.4x	83.2%
Orion Engineered Carbons	OEC	\$13.35	\$812	\$1,654	\$1,811	\$266	14.7%	6.2x	\$330	5.0x	\$842	3.2x	0.3%
Stapan Company	SCL	\$93.67	\$2,089	\$2,487	\$2,640	\$300	11.4%	8.3x	\$315	7.9x	\$398	1.3x	16.9%
Tronox	TROX	\$12.25	\$1,892	\$4,433	\$3,664	\$938	25.6%	4.7x	\$1,055	4.2x	\$2,490	2.7x	62.0%
Venator	VNTR	\$0.88	\$95	\$994	\$2,393	\$165	6.9%	6.0x	\$219	4.5x	\$894	5.4x	52.7%
Additives Median			\$2,089	\$2,487	\$2,585	\$300	14.4%	7.6x	\$323	5.9x		2.4x	62.0%
Advanced Materials & Polymers													
Advansix	ASIX	\$32.10	\$899	\$1,159	\$1,933	\$328	17.0%	3.5x	\$359	3.2x	\$260	0.8x	78.3%
Avient (fka PolyOne)	AVNT	\$30.30	\$2,755	\$4,046	\$5,018	\$589	11.7%	6.9x	\$595	6.8x	\$1,275	2.2x	84.3%
Celanese	CE	\$90.34	\$9,788	\$13,438	\$9,565	\$2,529	26.4%	5.3x	\$2,768	4.9x	\$3,305	1.3x	79.2%
Hexcel	HXL	\$51.72	\$4,350	\$5,063	\$1,478	\$273	18.5%	18.5x	\$313	16.2x	\$713	2.6x	79.3%
Rayonier Advanced Materials	RYAM	\$3.15	\$202	\$975	\$1,499	\$104	7.0%	9.4x	\$152	6.4x	\$774	7.4x	(29.4%)
Trinseo	TSE	\$18.32	\$641	\$2,781	\$5,380	\$492	9.2%	5.6x	\$468	5.9x	\$2,140	4.3x	70.9%
Westlake Chemical	WLK	\$86.88	\$11,117	\$15,732	\$15,101	\$4,911	32.5%	3.2x	\$4,882	3.2x	\$4,045	0.8x	82.1%
Advanced Mat. & Poly. Median			\$2,755	\$4,046	\$5,018	\$492	17.0%	5.6x	\$468	5.9x		2.2x	79.2%
Overall Median			\$3,401	\$4,690	\$2,630	\$488	19.1%	9.1x	\$553	7.9x		2.1x	79.3%

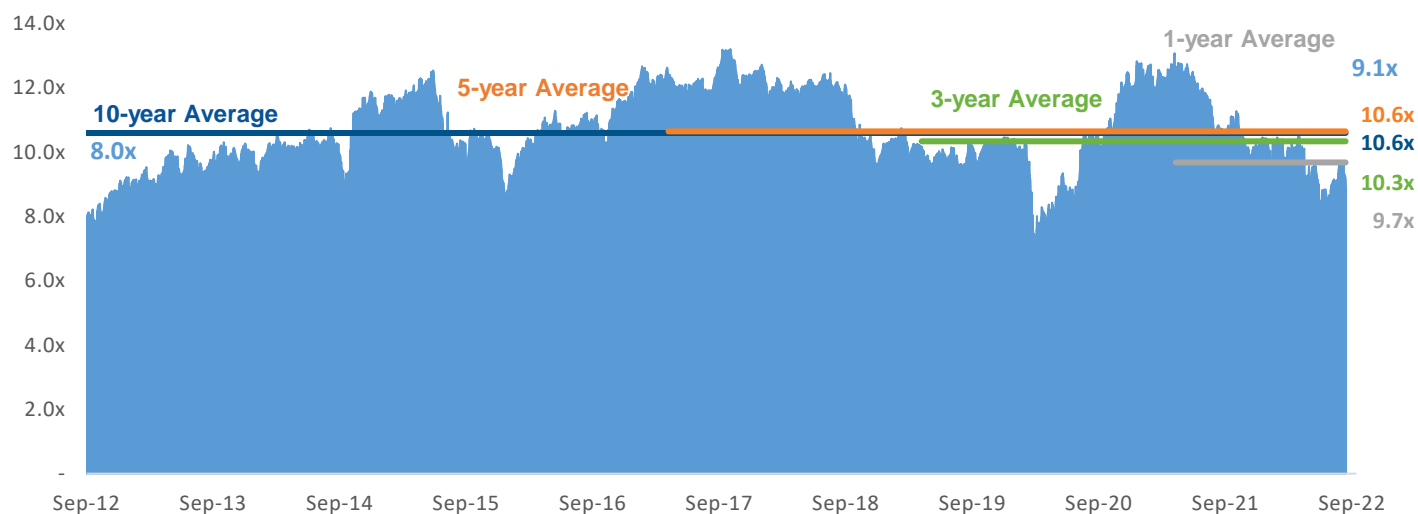
Source: S&P Capital IQ

SEGMENT PERFORMANCE



Segment Enterprise Value/LTM EBITDA Performance (10-Year)

Average as of:	1-year	3-year	5-year	10-year
September 30, 2017	11.8x	11.1x	10.5x	9.1x
September 30, 2012	7.7x	8.0x	7.6x	7.9x



Source: S&P Capital IQ

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/29/22	ADOB Fertilizers	Nouryon (The Carlyle Group)	-	-	<ul style="list-style-type: none"> Nouryon has agreed to acquire ADOB Fertilizers, a Poland-based supplier of chelated micronutrients, foliars and other specialty fertilizers. Enables Nouryon to expand its product portfolio and broaden its offerings for customers in the crop nutrition market.
9/26/22	Rosier SA (98.09% stake from Borealis AG)	YILFERT Holding (YILDIRIM Group)	\$35M	-	<ul style="list-style-type: none"> YILFERT Holding has agreed to acquire a 98.09% stake in Rosier SA, a Belgium-based mineral fertilizer producer. YILDIRIM has announced its intention to launch a squeeze-out offer for the remaining Rosier's shares at a price of EUR 20 per share in accordance with the Belgian Royal Decree on Public Squeeze-Out Offers.
9/22/22	Symborg	Corteva, Inc.	-	-	<ul style="list-style-type: none"> Corteva, Inc. has agreed to acquire Symborg, a Spain-based developer of bio stimulant and fertilizer products. Represents a significant next step in Corteva's strategy to accelerate the development of a best-in-class biologicals portfolio.
9/22/22	REMAQ	Orlen Group	-	-	<ul style="list-style-type: none"> Orlen Group has agreed to acquire REMAQ, a Czech Republic-based company that produces high-quality recycled granules of polypropylene, polyethylene and polystyrene. Represents an element of Orlen's strategic plan to invest in environmentally friendly projects to manage plastic waste. The transaction will help the ORLEN Group achieve almost 10% of the 2030 strategic target for recycling capacity. Plastic waste will be used to make new petrochemical products for applications in the construction, automotive and packaging industries.
9/20/22	Humic Growth Solutions	Paine Schwartz Partners	-	-	<ul style="list-style-type: none"> Paine Schwartz Partners has made a strategic investment in Humic Growth Solutions, a Florida-based company that produces humic and fulvic acid products across six manufacturing locations for domestic use and export to more than 40 countries worldwide, with production capacity to meet global agricultural market demand. Humic Growth Solutions is differentiated by its patented, uniquely water soluble granulation technology, which provides tangible benefits with respect to application flexibility, ease of use and logistics versus competitive powders or liquids, and has a broad pipeline of additional product innovations.
9/19/22	Green Tree Plastics LLC	Unknown buyer	-	-	<ul style="list-style-type: none"> An unknown buyer has agreed to acquire Green Tree Plastics LLC, an Indiana-based plastics recycler. Green Tree partners with groups from around the country to collect plastic caps used for feedstock to make new products through a program called the ABC Promise Partnership. ABC stands for A Bench for Caps. Green Tree was originally going to close but was swamped with interest from other manufacturers of plastic lumber once word of the planned closure was revealed.
9/18/22	Klabi Fragrances (81% stake)	Turpaz	\$30M	-	<ul style="list-style-type: none"> Turpaz has agreed to acquire Klabi Fragrances, a New Jersey-based custom fragrance, natural oil blends and extracts company. Strengthens Turpaz's activities, presence and position as a major player in the field of fragrances in North America. Represents Turpaz's fourth acquisition since the beginning of 2022 and seventh acquisition since becoming a public company in May 2021.
9/16/22	Cap Couleurs	Hempel	-	-	<ul style="list-style-type: none"> Hempel has agreed to acquire Cap Couleurs, a France-based chain of paint stores. Complements Hempel's existing network of 10 Renaulac stores in France. Hempel's Double Impact strategy will be realized through both acquisitions and organic growth, as well as ambitious investments in sustainability, innovation and digitalization.
9/15/22	Thermal Management Materials business of Nanoramic Laboratories	Henkel AG & Co. KGaA	-	-	<ul style="list-style-type: none"> Henkel AG & Co. KGaA has acquired Nanoramic Laboratories' Thermal Management Materials business, a Massachusetts-based product portfolio that is marketed under the brand Thermexit. The Thermexit portfolio includes patented, high-performance thermal interface gap pads based on an innovative nano-filler technology. This technology provides unique materials with extremely high thermal conductivity and excellent stability. Strengthens Henkel's position in the growing thermal interface material (TIM) market and expands its offerings for applications in high-growing market segments that require specialized know-how with regard to heat management in electronics, including 5G infrastructure, semiconductors, and power conversion for industrial and automotive electronics.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/15/22	Seal IT Services (15% stake)	Astral Limited	\$40.5M	7.5x	<ul style="list-style-type: none"> Astral Limited has acquired an additional 15% stake in Seal IT Services, a United Kingdom-based manufacturer of sealants and adhesives. With this acquisition, the total equity stake of Astral in Seal IT Services Limited has increased from 80% to 95%.
9/14/22	Compass Minerals (17% stake)	Koch Minerals & Trading (Koch Industries)	-	-	<ul style="list-style-type: none"> Koch Minerals & Trading has agreed to make a \$252 million investment in Compass Minerals through the purchase of Compass Minerals common stock to support phase-one development of its previously identified 2.4 mMT lithium carbonate equivalent (LCE) Great Salt Lake resource and debt reduction. Approximately \$200 million of the proceeds from the investment are expected to be used to advance the first phase of the company's sustainable lithium development project. This figure represents approximately 75% of total phase-one funding needs, according to the company's FEL-1 level project cost estimates, including the full funding required through calendar year 2024 toward the construction of a commercial scale, direct lithium extraction (DLE) and lithium conversion plant at the company's Ogden, Utah, solar evaporation facility. After the transaction closes, KM&T will own approximately 17% of Compass Minerals' outstanding shares of common stock and will have the ability to appoint two additional members to the Compass Minerals board of directors.
9/13/22	NBD Nanotechnologies, Inc.	Henkel AG & Co. KGaA	-	-	<ul style="list-style-type: none"> Henkel AG & Co. KGaA has acquired NBD Nanotechnologies, Inc., a Massachusetts-based company that develops surface properties such as repellency for plastics or optical coatings for displays. Aims to strengthen the position of Henkel's Adhesive Technologies business unit in the area of functional coatings.
9/13/22	Natura PCR, LLC (Avangard Innovative LP)	Waste Management, Inc.	-	-	<ul style="list-style-type: none"> Waste Management, Inc. (WM) has agreed to acquire Avangard Innovative's U.S. business, Natura PCR, a Texas-based film recycling operation. Positions WM to grow and scale rapidly in the emerging PCR space.
9/12/22	Shubhalakshmi Polyesters; Shubhlaxmi Polytex	Reliance Industries Ltd	\$200M	-	<ul style="list-style-type: none"> Reliance Industries Ltd has acquired Shubhalakshmi Polyesters and Shubhlaxmi Polytex, two India-based polyester chips and yarn manufacturers. The acquisitions are part of the company's strategy to expand its downstream polyester business.
9/12/22	Kemira Oyj's colorant dye business	ChromaScape, LLC (Heartwood Partners)	-	-	<ul style="list-style-type: none"> ChromaScape, LLC has agreed to acquire Kemira Oyj's colorants dye business, a product line whose colorants include basic and direct dyes, organic pigments and special colorants that are used in numerous paper and packaging applications, such as tissue, carboard, newspaper, and high-end packaging solutions for jewelry, cosmetics and food stuffs. Allows ChromaScape to expand their position in the paper dye market.
9/12/22	Air Liquide Industrial Merchant business in Saudi Arabia	Abdullah Hashim Industrial Gases & Equipment Co. Ltd. (Air Products)	-	-	<ul style="list-style-type: none"> Abdullah Hashim Industrial Gases & Equipment Co. Ltd. – Air Products' merchant industrial gas joint venture in the Kingdom of Saudi Arabia – has acquired Air Liquide's industrial merchant gases business, a Saudi Arabia-based business that is involved in liquid bulk, packaged gases and specialty gases. Supports Air Products' continued growth strategy for the region and builds on decades of experience working with customers in the Middle East.
9/12/22	Surfactant business and associated assets of PerformanX Specialty Chemicals, LLC	Stepan Company	-	-	<ul style="list-style-type: none"> Stepan Company has agreed to acquire the surfactant business and associated assets of PerformanX Specialty Chemicals, LLC, an Ohio-based specialty chemical company. Represents a strong strategic fit within Stepan's Surfactants business and provides attractive market diversification opportunities for their alkoxylation product line.
9/12/22	Vesismín Health	Schülke Group	-	-	<ul style="list-style-type: none"> Schülke Group has acquired Vesismín Health, a Spain-based expert in disinfection solutions for the hospital sector. Expands Schülke Group's presence and product portfolio in Southern Europe – mainly in Spain, France and Portugal – and creates synergies in its Research & Development and Supply areas.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/9/22	Energy cane production assets of GranBio group	Nufarm Limited	\$25M	-	<ul style="list-style-type: none"> Nufarm Limited has acquired GranBio group's energy cane production assets. These Brazil-based assets include germplasm, breeding materials and related know-how, products in various stages of development, and customer contracts. Nuseed, a division of Nufarm, plans to develop energy cane as a renewable, advanced agricultural feedstock for supply to downstream energy partners. The acquisition and related exclusive long-term technology access and license agreement gives GranBio rights in the second-generation field. The agreement represents a tangible example of Nufarm's growth strategy in action — investing in sustainable innovative technologies that help growers get more from their land.
9/9/22	Design Polymerics	Meridian Adhesives (American Securities)	-	-	<ul style="list-style-type: none"> Meridian Adhesives has acquired Design Polymerics, a California-based manufacturer of sealants, adhesives, insulation mastics and indoor air quality products. Extends Meridian's footprint into new markets and is the first of a new series of deals to come with Meridian's new ownership under American Securities.
9/8/22	Singleton Birch	Mississippi Lime Company (HBM Holdings)	-	-	<ul style="list-style-type: none"> Mississippi Lime Company (MLC) has acquired Singleton Birch, a United Kingdom-based independent supplier of lime products. Represents a part of MLC's strategy to drive growth, innovation and sustainability through geographic expansion and new products and technologies that proactively address customers' changing needs.
9/8/22	Syclus B.V. (50% stake)	CropEnergies AG	\$3.6M	-	<ul style="list-style-type: none"> CropEnergies AG has acquired a 50% stake in Syclus B.V., a Netherlands-based start-up that is a manufacturer of renewable ethylene. The goal is to build an industrial scale plant for the production of renewable ethylene from renewable ethanol.
9/8/22	Meridian Adhesives (Arsenal Capital Partners)	American Securities	-	-	<ul style="list-style-type: none"> American Securities has acquired Meridian Adhesives, a Texas-based manufacturer of adhesives and sealants for electronics, infrastructure and industrial end markets. The Company sells a broad portfolio of chemistries and focuses on niche applications that require custom solutions and complex formulations. Meridian Adhesives was created by Arsenal Capital Partners through the combination of 14 companies over 3 years.
9/7/22	Techmer PM (majority stake from SK Capital)	Gryphon Investors	-	-	<ul style="list-style-type: none"> Gryphon Investors has acquired a majority stake in Techmer PM, a Tennessee-based designer and producer of engineered materials, and color and additive masterbatch solutions, for the plastics and fiber industries. The transaction represents a successful initial phase of investment for SK Capital, which will remain a significant investor alongside Techmer founder John Manuck, and the Company's management team. The combined knowledge and expertise of the new and continuing investors will support the future profitable growth of Techmer.
9/7/22	VanDeMark Chemical (Comvest Partners)	SK Capital Partners	-	-	<ul style="list-style-type: none"> SK Capital Partners has made an investment in VanDeMark Chemical, a New York-based worldwide leader in the production of high-end specialty chemical intermediates and derivatives for a diverse set of end markets, including life sciences, electronics, polymers, coatings, personal care, and flavor & fragrances. SK Capital's investment, in partnership with existing co-owner Comvest Partners, will serve as a catalyst for a new strategic direction as the company seeks to deepen and expand its presence in fine chemistries for the global life science market.
9/6/22	ChemQuest Chemicals, LLC (Edgewater Capital Management, LLC)	Seatex LLC (Cotton Creek Capital)	-	-	<ul style="list-style-type: none"> Seatex LLC has acquired ChemQuest Chemicals, LLC, a Texas-based custom chemical manufacturer that provides full-service toll manufacturing services. Provides Seatech with enhanced production capabilities, increased capacity and a complementary customer base, representing a diverse set of end-markets.
9/6/22	Quest Ingredients Limited (Quest Vitamins Limited)	Fuerst Day Lawson (Highlander Partners)	-	-	<ul style="list-style-type: none"> Fuerst Day Lawson (FDL) has acquired Quest Ingredients Limited, a United Kingdom-based manufacturer of high-quality proprietary food flavors, animal feed flavors and active botanical extracts for the food and beverage, pharmaceutical and agricultural sectors. Supports FDL's stated strategic objective of expanding in its core markets and customer base in Europe and the U.S.
9/6/22	Alwag	Greiner Packaging (Greiner Group AG)	-	-	<ul style="list-style-type: none"> Greiner Packaging has acquired Alwag, a Serbia-based producer of PET flakes. Greiner has renamed the company Greiner Recycling d.o.o. Represents Greiner's ongoing efforts to boost transition toward a circular economy and represents a sustainable form of backward integration, designed to ensure a dependable supply of the raw materials needed to fulfill this ambition.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/2/22	RheinPerChemie GmbH (Evonik Industries AG)	Calibre Chemicals Private Limited (Everstone Capital)	-	-	<ul style="list-style-type: none"> Calibre Chemicals has agreed to acquire RheinPerChemie, a Germany-based specialty chemical company that is a prominent manufacturer of ammonium and sodium persulphates in Europe. Accelerates organizational learning to provide best-in-class products and services to customers and enhance customer centricity for all of Calibre's business lines in Europe. Teams across the two continents would work together to expand their electrochemistry capability and capacities to further improve existing products and manufacture new products.
9/1/22	Saint-Gobain's Crystals Business	Edgewater Capital Partners; SK Capital Partners	-	-	<ul style="list-style-type: none"> SK Capital Partners and Edgewater Capital Partners have acquired Saint-Gobain's Crystals Business, an Ohio-based worldwide technology leader and provider of single scintillation crystals for radiation detection applications, as well as sapphire and garnet substrates for photonics and power electronics applications. Seeks to build on Saint-Gobain's scientific foundation and reputation while establishing a leading independent market participant.
9/1/22	BiOWiSH Technologies, Inc	SABIC Agri-Nutrients Company	-	-	<ul style="list-style-type: none"> SABIC Agri-Nutrients Company has closed an investment deal with BiOWiSH Technologies, Inc, an Ohio-based provider of biotechnology solutions for the agriculture, aquaculture and environmental management industries. The investment is in connection with SABIC AN's and BiOWiSH's desire to broaden and accelerate product commercialization of SABIC AN Bio-Enhanced Urea powered by BiOWiSH.
8/31/22	Quats business of Clariant	Global Amines Company Pte. Ltd. (50/50 JV of Clariant and Wilmar)	\$113M	-	<ul style="list-style-type: none"> Global Amines Company Pte. Ltd. has acquired Clariant's quats business consisting of quaternary ammonium compounds, a group of chemicals used for a variety of purposes, including as preservatives, surfactants, and antistatic agents. The transfer will be an asset sale of the sites in Germany, Indonesia and Brazil, and will provide for tolling agreements where needed. This divestment is a further step in Clariant's portfolio transformation to focus operations purely on specialty chemicals.
8/31/22	Cascade Poly Pipe & Conduit; Northwest Polymers	Atkore Inc.	-	-	<ul style="list-style-type: none"> Atkore Inc. has acquired Cascade Poly Pipe & Conduit, an Oregon-based company that extrudes smooth-wall HDPE conduit from recycled materials and Northwest Polymers, an Oregon-based company that turns recyclable post-industrial waste plastic into pellets for decking and fencing manufacturers and more recently for conduit to house fiber for broadband. Represent Atkore's fifth and sixth deals of fiscal year 2022 and align with a strategy to deliver differentiated and sustainable solutions.
8/30/22	Bergstrom Nutrition	Balchem	-	-	<ul style="list-style-type: none"> Balchem has acquired Bergstrom Nutrition, a Washington-based manufacturer of methylsulfonylmethane (MSM). Provides a synergistic scientific advantage in Balchem's key strategic therapeutic focus areas such as longevity and performance and is a strong fit with Balchem's specialty, science-backed mineral products.
8/29/22	Assets of XG Sciences Inc	NanoXplore Inc	-	-	<ul style="list-style-type: none"> NanoXplore Inc has agreed to acquire a significant portion of the assets of XG Sciences Inc, a Michigan-based graphene developer and manufacturer. Expands NanoXplore's presence in the battery material space and significantly increases its intellectual property related to graphene and graphene-enhanced battery materials.
8/29/22	Tesil Fibres	PET Baltija (INVL Baltic Sea Growth Fund)	-	-	<ul style="list-style-type: none"> PET Baltija has agreed to acquire Tesil Fibres, a Czech Republic-based leading PET fiber producer. This vertical integration transaction will subsequently increase PET Baltija's current revenues by more than 50% while also making it an international company. Once closed, this transaction will become one of the largest investments by a Latvian company in the Czech Republic to date.
8/26/22	Benvic Compounds (Investindustrial)	International Chemical Investors Group	-	-	<ul style="list-style-type: none"> International Chemical Investors Group has agreed to acquire Benvic Compounds, a France-based developer of thermoplastic solutions based on polyvinyl chloride (PVC), as well as engineering polymers and bio-polymer compounds. Benvic Compounds will become ICI's second polymers platform, next to chlorovinyls/Vynova.
8/26/22	Mitsui Phenols Singapore (Mitsui Chemicals)	Ineos	\$330M	-	<ul style="list-style-type: none"> Ineos has agreed to acquire Mitsui Phenols Singapore, a Singapore-based manufacturer of phenol, acetone and bisphenol A. Provides a good fit with Ineos' existing portfolio in the phenol chain as well as the expertise of Ineos Phenol, and presents significant integration opportunities with its manufacturing sites in Germany, Belgium and the U.S.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/26/22	000 VitOMEK; 1000 Belfidagro (Linus Agro Group)	Undisclosed	\$7.5M	-	<ul style="list-style-type: none"> An undisclosed buyer has acquired 000 VitOMEK and 1000 Belfidagro, two manufacturers of feed additives and premixes for farm animals and poultry located in Russia and Belarus, respectively. Sale of the companies has been conducted due to the ongoing Russia/Ukraine war.
8/25/22	Meridian Flavors	FlavorSum (The Riverside Company)	-	-	<ul style="list-style-type: none"> FlavorSum has acquired Meridian Flavors, a Missouri-based flavor manufacturer specializing in natural, non-GMO and organic flavors. Fits FlavorSum's strategy to expand resources that support the needs of small, mid-sized and emerging food & beverage companies.
8/24/22	Gujarat Polyfilms	Aquafil	-	-	<ul style="list-style-type: none"> Aquafil has agreed to acquire Gujarat Polyfilms, an India-based producer of nylon-6 polymer and textile fibers. Aims to ensure polymer production capacity in the Asian market, while also continuing the globalization process of fibers for fabrics. In addition, the geographical positioning and competitiveness of local cost factors will allow further planning of possible expansions of Aquafil's operations in Asia.
8/23/22	Kiilto's Russian operations	Bergauf	-	-	<ul style="list-style-type: none"> Bergauf has acquired the Russian operations of Kiilto, a Finland-based transport, chemicals and logistics company. After a transition period and the divestment is completed, Kiilto will not continue any operations nor will the Kiilto brand be used in Russia.
8/19/22	Advanced Emissions Solutions, Inc (Alta Fundamental Advisers SP LLC; Blackwell Partners LLC Series A; Star V Partners LLC)	Arq Limited	\$121M	NM	<ul style="list-style-type: none"> Arq Limited has entered into a definitive merger agreement with Advanced Emissions Solutions, Inc, a Colorado-based provider of powder activated carbon and technology used in emissions control solutions for coal-fired power generation, and industrial and municipal water purification markets. ADES shareholders may elect to receive up to an aggregate of \$10.0 million of cash proceeds in the merger (at a price of \$0.52 per share) and will retain at least 47.4% of the outstanding shares of the combined company that could increase up to 49.5% based upon 100% equity elections by ADES Investors. Concurrent with the merger, there will be a committed equity placement of \$20 million from current Arq investors and members of Arq management. The merger creates a North American-based, integrated environmental technology company with access to diverse growth markets and a competitively advantaged position supported by patent-protected intellectual property and products. Access to Arq's unique carbon feedstock will allow ADES to produce higher-value activated carbon at the company's Red River plant.
8/18/22	Dongsung Chemical	UPM	-	-	<ul style="list-style-type: none"> UPM and Dongsung Chemical have announced a strategic biochemicals partnership that will accelerate the introduction of renewable, sustainable forest-sourced materials into the Asian market and reduce fossil resource consumption. Dongsung Chemical has signed a Letter of Intent for this strategic partnership to develop a renewable polyurethane product based on UPM Biochemicals' biobased mono-ethylene glycols (MEG), UPM BioPura™.
8/17/22	Chemical Business of Mecaro Co.	Merck KGaA	\$112M	-	<ul style="list-style-type: none"> Merck KGaA has agreed to acquire Mecaro's chemical business, a South Korea-based manufacturer of semiconductor chemical components. Supports "Level Up" growth ambition of the Electronics business of Merck KGaA, to further expand its regional capabilities and global capacity.
8/17/22	Faxon Quimica (60% stake)	SKion Water International	-	-	<ul style="list-style-type: none"> SKion Water International has acquired a 60% stake of Faxon Quimica, a Brazil-based developer and producer of chemicals for industrial and municipal wastewater and water treatment. Provides SKion Water with a more complete offer of solutions to its customers and will leverage the growth of Faxon's operations in Brazil and Latin America.
8/17/22	Lannate product line of Corteva Agriscience	Tessenderlo Kerley, Inc (Tessenderlo Group)	-	-	<ul style="list-style-type: none"> Tessenderlo Kerley has acquired the product line Lannate from Corteva Agriscience, an insecticide that gives fast-acting control of adults, nymphs, larvae and eggs of many pest species — including aphids, cabbage looper, European corn borer and many others — in crops such as broccoli, cabbage and sweet corn. Expands the portfolio of Tessenderlo Kerley's NovaSource business unit.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/16/22	ADM	LG Chem	-	-	<ul style="list-style-type: none"> • LG Chem and ADM have formed two joint ventures to make lactic acid and polylactic acid (PLA). • Manufacturing facilities for the JVs will be in Decatur, Ill. • The first JV, GreenWise Lactic, will make up to 330 million pounds of high-purity corn-based lactic acid annually. ADM will be majority owner of GreenWise, and will contribute fermentation capacity from its Decatur bioproducts facility. • The second JV, LG Chem Illinois Biochem, will be majority-owned by LG Chem. It would build on the firm's expertise in bioplastics to construct a facility that will use product from GreenWise Lactic to make about 165 million pounds of PLA per year. The projects are expected to create more than 125 jobs.
8/12/22	Textile Effects Business of Huntsman Corporation	Archroma (SK Capital)	\$718M	-	<ul style="list-style-type: none"> • Archroma has agreed to acquire the textile effects business of Huntsman, a Texas-based manufacturer of differentiated organic chemical products. • The combined company will continue to lead the textile industry in sustainability, innovation and performance, offering fashion brands, automotive, technical and home textiles the best-in-class cost performance whilst respecting natural resources and the planet.
8/11/22	Clearon (Dalian Hui Yu Xin Technology Development Co., Ltd.)	Solenis (Platinum Equity)	-	-	<ul style="list-style-type: none"> • Solenis has agreed to acquire Clearon, a West Virginia-based producer of trichloroisocyanuric acid (trichlor) and dichloroisocyanuric acid (dichlor) at its South Charleston, W.Va., plant and converts these core chemistries into an array of finished goods at its tableting and packaging facility. • Helps Solenis fulfill a strategic growth initiative following their recent ownership change to Platinum Equity, driving value through their branded Pool Solutions sanitization product line while providing an enhanced customer experience through expanded offerings and cost-effective pool solutions.
8/11/22	DSD Duales System Holding GmbH & Co. KG (H.I.G. Capital)	Circular Resources Limited	-	-	<ul style="list-style-type: none"> • Circular Resources Limited has acquired DSD Duales System Holding GmbH & Co. KG, a Germany-based company that, through its subsidiaries, engages in disposal, recycling and marketing services. • The companies acquired include Der Grüne Punkt – Duales System Deutschland GmbH, which operates one of the leading dual systems for the collection and recycling of used sales packaging in Germany, as well as Systec Plastics GmbH with its production facility in Hörstel and Systec Plastics Eisfeld GmbH, which produce high-quality recyclates for the plastics and packaging industry from plastic waste collected in the German yellow bag and yellow garbage can. • Unlocks further synergies between mechanical and chemical recycling of plastic waste in Europe that will allow plastics currently being lost from the value chain to be brought back into the recycling loop.
8/9/22	Frontier yarn plants in Mayodan, North Carolina of Gildan (Gildan Activewear)	Milliken & Company, Inc.	-	-	<ul style="list-style-type: none"> • Milliken & Company, Inc. has acquired one of the Frontier yarn plants, located in North Carolina. • This plant acquisition expands Milliken's open-end yarn production for its protective fabrics, workwear, government and defense, industrial, and napery textile business units.
8/8/22	Additive Manufacturing Materials Business of Covestro AG	Stratasys Ltd.	\$82M	-	<ul style="list-style-type: none"> • Stratasys Ltd. has agreed to acquire the additive manufacturing materials business of Covestro, a Germany-based manufacturer of high-quality polymer materials and their components. • Offers the optimal conditions to support the further growth of Stratasys' former Additive Manufacturing Business in this field.
8/8/22	Molded Devices, Inc. (PNC Mezzanine Management Corp)	TruArc Partners	-	-	<ul style="list-style-type: none"> • TruArc Partners has acquired Molded Devices, Inc., an Arizona-based company that engages in plastic and rubber processing solutions to original equipment manufacturers. • TruArc has the capital available to help Molded Devices continue to grow both internally and through deals.
8/8/22	Biolchim Group (NB Renaissance and Chequers Capital)	J.M. Huber	-	-	<ul style="list-style-type: none"> • J.M. Huber has agreed to acquire Biolchim Group, an Italy-based specialty plant nutrition and biostimulants maker. • Enables expanded customer and product access into key agricultural regions globally. • Upon close of the sale, the Biolchim Group will become part of Huber Engineered Materials (HEM), a company within the Huber portfolio of businesses. The Biolchim Group will be a key part of the strategic foundation of the Huber AgroSolutions business unit of HEM that currently includes Miller Chemical & Fertilizer.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/8/22	All Assets of Adhesives Specialists, Inc.	EUKALIN Corporation	-	-	<ul style="list-style-type: none"> EUKALIN Corporation acquired 100% of the assets of Adhesives Specialists, a Pennsylvania-based manufacturer of both water-based and hotmelt adhesives. Helps EUKALIN respond to the growing needs of their North American customers and fits with their corporate philosophy. EUKALIN's goal is to strengthen their strategic presence and, after a short transition period, start manufacturing EUKALIN products using local raw materials. Represents EUKALIN's first acquisition outside of Germany.
8/5/22	Auserpolimeri (Eigenmann & Veronelli)	L. Brüggemann	-	-	<ul style="list-style-type: none"> L. Brüggemann has acquired Auserpolimeri, an Italy-based developer and manufacturer of chemically functionalized polyolefin-based polymers. Expands L. Brüggemann's polymer additives business.
8/4/22	Kriya Materials	Holland Capital	-	-	<ul style="list-style-type: none"> Holland Capital has invested an undisclosed amount in Kriya Materials, a Netherlands-based developer of advanced nanotechnology-based custom coating solutions. Holland Capital's financing will enable Kriya to further strengthen its activities in Asia and move into a new production site in South-Limburg.
8/3/22	Esters manufacturing facility in Greensboro, North Carolina of LANXESS Deutschland GmbH	The HallStar Company	-	-	<ul style="list-style-type: none"> The HallStar Company has agreed to acquire the esters manufacturing facility in Greensboro, N.C., of LANXESS Deutschland GmbH. The deal will include the ester manufacturing plant, select product lines and site personnel, and will expand both HallStar's manufacturing capacity and their product portfolio. Complements HallStar's position as a leader in the design, synthesis and manufacturing of specialty ester chemistry.
8/2/22	Jotun Paints LLC (Jotun A/S)	Atomstroykomplex	-	-	<ul style="list-style-type: none"> Atomstroykomplex has acquired Jotun Paints LLC, Jotun's Russian operations where they manufacture decorative paints, marine coatings, protective coatings and powder coatings. Jotun said that it has become more and more difficult to operate in the country under ongoing sanctions.
8/2/22	Ozark Materials (Ozark Holdings)	Ingevity Corporation	\$325M	-	<ul style="list-style-type: none"> Ingevity Corporation has agreed to acquire Ozark Materials, an Alabama-based producer of pavement marking materials, including thermoplastic pavement markings, waterborne traffic paints and preformed thermoplastics. Strengthens Ingevity's position in the paving construction industry while moving them one step downstream where they can better serve their end customers. Ingevity anticipates that Ozark Materials will generate revenues of approximately \$150 million and EBITDA margins of approximately 20% during calendar 2023, and expects the acquisition to be immediately accretive to Ingevity's earnings per share.
8/1/22	Evonik Industries' Amphoteric Surfactants and Specialty Esters Manufacturing Operations	Kensing, LLC (One Rock Capital Partners)	-	-	<ul style="list-style-type: none"> Kensing has agreed to acquire Evonik Industries' Amphoteric Surfactants and Specialty Esters Manufacturing Operations. Located in Hopewell, Va., the Business primarily serves the personal care market, with a focus on skin care, hair care and oral care applications. Compliments Kensing's existing product portfolio derived from plant-based feedstocks.
8/1/22	Ineos Styrolution India (61.19% stake) (Ineos Styrolution)	Shiva Performance Materials	\$144M	-	<ul style="list-style-type: none"> Shiva Performance Materials has agreed to acquire Ineos Styrolution India, an India-based manufacturer of engineering thermoplastics. Further strengthens Shiva's footprint in India and opens future growth potential to enhance the company's current position.
8/1/22	Valvoline's global products business	Aramco	\$2.7B	8.4x	<ul style="list-style-type: none"> Aramco has agreed to acquire Valvoline's global products business, an independent producer and distributor of premium branded automotive, commercial and industrial lubricants, and automotive chemicals. Aramco will benefit from VGP's robust manufacturing and distribution network, significant R&D capabilities, strong partnerships with major OEMs, and a 150-year legacy of global brand recognition as it pursues opportunities to extend the brand globally.
8/1/22	Assets of Flavor Advantage, LLC	Brookside Flavors & Ingredients LLC	-	-	<ul style="list-style-type: none"> Brookside Flavors & Ingredients LLC has acquired the assets of Flavor Advantage, LLC, a Florida-based maker of sweet flavorings. Expands Brookside's flavor portfolio and enables the company to grow faster with the resources they will gain through the acquisition.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
7/29/22	Polskie Gornictwo Naftowe i Gazownictwo (PGNiG)	PKN Orlen	-	-	<ul style="list-style-type: none"> Poland's gas utility Polskie Gornictwo Naftowe i Gazownictwo (PGNiG) and domestic petrochemical group PKN Orlen have signed a merger plan, the companies announced in separate regulatory filings on July 29. The merger will be by way of the acquisition of PGNiG by PKN Orlen. It will involve the transfer of all PGNiG's assets and liabilities to PKN Orlen in exchange for PKN Orlen's shares that will be issued to the shareholders of PGNiG.
7/29/22	Litian	IGM Resins (Astorg Asset Management)	-	-	<ul style="list-style-type: none"> IGM Resins has acquired Litian, a China-based manufacturer of energy curing resins. Fits IGM Resins' "Go, Grow, Green" strategy, enabling the company to further expand its global footprint, strengthening its supply chain and enhancing its position in energy curing solutions with a combined product portfolio.
7/28/22	Shanghai Secco Petrochemical Company Limited (China Petroleum & Chemical Corporation (SEHK:386); Sinopec Shanghai Gaoqiao Company)	INEOS Limited	\$7B	-	<ul style="list-style-type: none"> INEOS and SINOPEC have signed three significant petrochemical deals with an aggregate value of \$7 billion. The agreements will have a combined capacity of 7 million tons per annum, generating revenue of around \$10 billion. The three deals are: <ul style="list-style-type: none"> SECCO joint venture: INEOS will acquire 50% of Shanghai SECCO Petrochemical Company Limited ("SECCO"), a subsidiary of SINOPEC. SECCO has a capacity of 4.2 million tons of petrochemicals, including ethylene, propylene, polyethylene, polypropylene, styrene, polystyrene, acrylonitrile, butadiene, benzene and toluene. ABS joint venture: INEOS and SINOPEC will also establish a second 50:50 joint venture for ABS (acrylonitrile butadiene styrene), based on INEOS' world-leading proprietary ABS Technology. This will include the 600ktpa Ningbo facility currently under construction, plus a further 600ktpa of new capacity. HDPE joint venture: INEOS and SINOPEC will also establish a third 50:50 joint venture to build a new 500ktpa HDPE (high-density polyethylene) plant in Tianjin. In addition to the Tianjin plant, INEOS and SINOPEC shall build at least two additional 500ktpa HDPE plants in the future to produce INEOS pipe grade under license.
7/27/22	Colortech da Amazônia	Basell Poliolefinas (LyondellBasell)	-	-	<ul style="list-style-type: none"> Basell Poliolefinas has agreed to acquire Colortech da Amazônia, a Brazil-based company that produces masterbatches and compounds for thermoplastic resins. Falls in line with Basell Poliolefinas' current business and allows them to further grow in Brazil.
7/26/22	Guangdong TOD New Material Co., Ltd.	DIC Corporation	-	-	<ul style="list-style-type: none"> DIC Corporation has acquired Guangdong TOD New Material Co., Ltd., a China-based coating resins manufacturer. Aids DIC Corporation's continuous initiatives to increase the capacity of its coating resins business in Asia, with a particular emphasis on China.
7/26/22	Handsome Chemical Development Limited (51% stake) (Yip's Chemical Holdings Limited)	PAGAC Heisenberg Holding II Limited	\$666M	-	<ul style="list-style-type: none"> PAGAC Heisenberg Holding II Limited has agreed to acquire a 51% stake in Handsome Chemical Development Limited, a Hong Kong-based manufacturer of industrial organic solvents. Leveraging its strategic partnership with PAG, Handsome Chemical will enter the upstream raw material market of acetic acid, and will construct an acetic acid plant with an annual production capacity of 600,000 tons in Jingmen Chemical Recycling Industrial Park located in Hubei Province in China.
7/25/22	Zymergen Inc.	Ginkgo Bioworks Holdings, Inc.	\$539M	-	<ul style="list-style-type: none"> Ginkgo Bioworks Holdings, Inc. has agreed to acquire Zymergen Inc., a California-based company that designs, develops and commercializes microbes, molecules and materials for electronics, packaging, healthcare, agriculture and other industries. Looks to expedite the development of the innovative horizontal synthetic biology platform of Ginkgo.
7/21/22	Polimeros Especial	Arkema S.A.	-	-	<ul style="list-style-type: none"> Arkema S.A. has agreed to acquire Polimeros Especial, a Mexico-based producer of high-performance, waterborne resins for a broad range of applications in markets such as architectural and decorative paints, textiles, pressure-sensitive adhesives and construction. Represents a strategic fit in Arkema's strategy to expand its Coating Solutions segment in growing markets and in low-volatile organic compound solutions.
7/19/22	AmeriWater	Edgewater Capital Partners	-	-	<ul style="list-style-type: none"> Edgewater Capital Partners has acquired AmeriWater, an Ohio-based industry leader in the design, manufacture, installation and supply of water purification systems and services for the healthcare sector, including dialysis and sterile processing, as well as industrial applications. Through this acquisition, Edgewater executed on their water filtration thesis.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
7/19/22	Innovative Concrete Technology	Elvisridge Capital	-	-	<ul style="list-style-type: none"> Elvisridge Capital has acquired Innovative Concrete Technology Corporation, a Florida-based chemical manufacturer for the professional concrete coating and hardscapes market. Represents Elvisridge Capital's second acquisition in the decorative concrete and hardscape industry.
7/18/22	Nucera Solutions LLC (SK Capital Partners)	Chase Corporation	\$250M	11.9x	<ul style="list-style-type: none"> Chase Corporation has agreed to acquire Nucera Solutions, a Texas-based company that makes specialty resins and waxes for high-performance applications. Represents a transitional acquisition in advancing Chase's strategic growth priorities and allows Chase to gain additional scale and expand their presence across multiple new high-growth end markets.
7/18/22	Peute Recycling B.V.	SCG Packaging	\$79.5M	-	<ul style="list-style-type: none"> SCG Packaging has agreed to acquire Peute Recycling B.V., a Netherlands-based packaging materials recycling company. Enables SCGP to expand into the rapidly growing international packaging material recycling business and also represents an important pillar for SCGP's long-term strategic direction to strengthen all levels of their packaging business from raw material sources, upstream and downstream production through to the integrated packaging solutions.
7/18/22	EPICOR	Evoqua Water Technologies	-	-	<ul style="list-style-type: none"> Evoqua Water Technologies has acquired EPICOR, a New Jersey-based manufacturer of high-quality powdered ion exchange resins and resin/fiber mixtures for the power industry. Strengthen Evoqua's Integrated Solutions and Services segment's ability to better support and serve their power market customers.
7/15/22	Stein Fibers	Aterian Investment Partners	-	-	<ul style="list-style-type: none"> Aterian Investment Partners has acquired Stein Fibers, a New York-based manufacturer and distributor of polyester fiberfill and non-woven fibers to the North American furniture, bedding, automotive, filtration, construction and medical markets. Stein Fibers is the fourth investment from Aterian's Fund IV, an \$834 million investment vehicle.
7/12/22	Vencorex Holding (Perstorp Holding AB) (9.81% stake)	PTT Global Chemical	-	-	<ul style="list-style-type: none"> PTT Global Chemical has acquired a 9.81% stake in Vencorex Holding, a France-based manufacturer and distributor of solvent-based and solvent-free aliphatic polyisocyanates; self-emulsifiable polyisocyanates for waterborne polyurethanes; monomers; liquid chlorine, caustic soda and salt; and aromatic isocyanates. With the share acquisition from Perstorp Holding AB, PTTGC will gain 100% ownership of Vencorex. Boosts the presence of PTTGC in the downstream polyurethane business under its scheme to concentrate on value-added products to serve rising Asian demand. Vencorex is a key isocyanate manufacturer in Europe.
7/12/22	Trichodex	Fertiberia (Triton)	-	-	<ul style="list-style-type: none"> Fertiberia has acquired Trichodex, a Spain-based manufacturer of biotechnology products for agriculture. Forms part of Fertiberia's strategy to expand in the development of high added-value biofertilizers and bio stimulants.
7/12/22	Kabelis Group (70% stake)	Winfarm	-	-	<ul style="list-style-type: none"> Winfarm has agreed to acquire a 70% stake in Kabelis Group, a France-based company in the landscaping and green space development market. Captures many synergies enabling Winfarm to offer high-performance solutions in this fast-growing market.
7/7/22	APON	ALPLA	-	-	<ul style="list-style-type: none"> ALPLA has acquired APON, a Poland-based producer of plastic packaging for the pharma industry and the e-liquid sector. The acquisition continues the growth and expansion course of the ALPLApharma business division established in 2019.
7/7/22	Semillas Ceres	Syngenta	-	-	<ul style="list-style-type: none"> Syngenta has acquired Semillas Ceres, a Mexico-based seeds producer. Through the acquisition, Syngenta adds three research labs and one production plant.
7/7/22	LDPE business of Basell Orlen Polyolefins	PKN Orlen	-	-	<ul style="list-style-type: none"> PKN Orlen has acquired the LDPE business of Basell Orlen Polyolefins. BOP is a Polish 50/50 joint venture of PKN Orlen and LyondellBasell Industries. PKN Orlen will take over the assets with production capacity of approximately 100,000 tons of LDPE per year, as well as its sales and customer service in the Polish market.
7/6/22	Wheel Liquid Coatings Business of Lankwitzer Lackfabrik GmbH	Akzo Nobel	-	-	<ul style="list-style-type: none"> Akzo Nobel has agreed to acquire the wheel liquid coatings business of Lankwitzer Lackfabrik GmbH. Lankwitzer's Rims and Wheel business operates out of a manufacturing site in Leipzig, Germany. Its products are approved for use by car manufacturers such as Daimler, Audi, VW, Opel, Fiat and Renault. Complements Akzo's existing powder coatings portfolio and expands the range of products they supply.

THIRD QUARTER 2022 CHEMICALS TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
7/5/22	MATCO PLASTICS	EURASIACORP NV	-	-	<ul style="list-style-type: none"> EURASIACORP NV has acquired MATCO PLASTICS, a Belgium-based company involved in the recycling of plastic waste and the production of recycled resins. Further strengthens EURASIACORP's position as a distributor of plastics by extending its product offering for sustainable solutions.
7/5/22	Lubrication Specialties Inc.	Gold Eagle	-	-	<ul style="list-style-type: none"> Gold Eagle has acquired Lubrication Specialties Inc., an Ohio-based fuel and oil additives company. LSI makes several fuel and oil products for the automotive industry, including the Hot Shot's Secret brand line. The Hot Shot's Secret product line includes more than 50 additives, specialty oils, coolants and fluids sold in more than 30,000 retail stores nationwide. Expands Gold Eagle's product portfolio, and Gold Eagle has the resources necessary to expand Hot Shot's Secret into new distribution channels worldwide. More customers will gain access to LSI's products now that it's a single operating unit.
7/5/22	Akay Group	Oterra (EQT Partners)	-	-	<ul style="list-style-type: none"> Oterra has agreed to acquire Akay Group, an India-based natural ingredients manufacturer. Represents Oterra's fourth acquisition in only 14 months and strengthens its access to natural colors.
7/4/22	Yara International's stake in Dallol mining project in Ethiopia	XLR Enterprises Limited	-	-	<ul style="list-style-type: none"> XLR Enterprises Limited has agreed to acquire Yara International's stake in Dallol mining project in Ethiopia. The Dallol mining project comprises a planned sulphate of potash (SOP) mine in the Afar region in Ethiopia. Yara has been the majority shareholder in the project, with XLR Enterprises Limited and Liberty Metals and Mining Holdings, LLC as partners. The project has been on hold since 2019 while working on structural solutions for the next stage of development of the project. The divestment supports Yara's transformation by reallocating capital and risk appetite towards its strategic focus areas.
7/4/22	Aurora Manufacturing and Venture Polymers	Ravago	-	-	<ul style="list-style-type: none"> Ravago has acquired Aurora Manufacturing and Venture Polymers, two United Kingdom-based plastic recyclers. Aurora Manufacturing primarily produces and distributes recycled polyolefin flakes and pellets from post-consumer waste but is also active in other recycling markets. It is active in recycled polypropylene (R-PP), recycled high density polyethylene (R-HDPE), recycled low density polyethylene (R-LDPE), recycled nylon (R-nylon), recycled polystyrene (R-PS) and recycled acrylonitrile butadiene styrene (ABS). Venture Polymers produces and distributes R-PP, R-LDPE, R-HDPE, recycled medium density polyethylene (R-MDPE), R-ABS, R-PS, recycled polyvinyl chloride (R-PVC), recycled polyethylene terephthalate (R-PET), R-nylon, recycled polycarbonate (R-PC) and R-ABS. Fits Ravago's plan to further grow its operations in the UK.
7/4/22	Höfer Chemie	Bencis	-	-	<ul style="list-style-type: none"> Bencis has acquired Höfer Chemie, a Germany-based household and technical chemicals producer in the areas of pool maintenance, fuels, waterbed care, cleaning supplies, and safety and environment. Bencis will help the company to benefit from rising e-commerce penetration and its competence in digital marketing channels.
7/1/22	Nutripack Iberica (Impact Group)	Mecapack (Sodero Gestion)	-	-	<ul style="list-style-type: none"> Mecapack has acquired Nutripack Iberica, a Spain-based company that creates, manufactures, collects and recycles food packaging. Fits Mecapack's existing business operations and grows their footprint in Spain.
7/1/22	Filatura Tollegno 1900	Indorama Ventures	\$39.5M	-	<ul style="list-style-type: none"> Indorama Ventures has acquired Filatura Tollegno 1900, an Italy-based yarn dyeing business. Represents a strategic fit for IVL's unique integrated business platform and will make a significant contribution to the sustainable growth of the Wool business (Fibers segment). It will also strengthen IVL's footprint of worsted yarns in Europe and help extend IVL's wool products globally with trading subsidiaries in America and Asia.
7/1/22	QTI Fibers (Highlander Partners)	Norwest Equity Partners	-	-	<ul style="list-style-type: none"> Norwest Equity Partners has acquired QTI Fibers, a North Carolina-based vertically integrated designer and manufacturer of polymer products and coatings, including highly technical fibers and fabrics for high-end consumer and industrial applications. Highlander began the initial platform investment by acquiring Twitchell in 2015, which was followed by the acquisitions of Infinity (2016) and Quantum (2017) to build out a broad technical product offering and enter into high growth end markets, such as outdoor living and home interior repair and remodel segments.

THIRD QUARTER 2022 POLYMER CONVERTER TRANSACTIONS

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/30/22	Xcentric Mold (The Riverside Company)	Quickparts (Trilantic Capital Management)	-	-	<ul style="list-style-type: none"> Quickparts has acquired Xcentric Mold, a Michigan-based company that offers rapid prototyping, injection molding, computer numerically controlled machining and other related services. Complements Quickparts' current manufacturing offerings and supports its continued growth by improving its U.S.-based, in-house production for customers.
9/23/22	Meditec Plaststøbning	SP Moulding (SP Group)	\$10.5M	-	<ul style="list-style-type: none"> SP Moulding has agreed to acquire Meditec Plaststøbning, a Denmark-based injection molding company serving the healthcare industry. Accelerates the growth in SP Group and expands their market share of injection molding plastics for the medical market.
9/21/22	PM Mold Co.	NewCo Plastics (White Wolf Capital)	-	-	<ul style="list-style-type: none"> NewCo Plastics has acquired PM Mold Co., an Illinois-based vertically integrated manufacturer of custom injection molded parts and custom molds. Expands NewCo's service offering and further solidifies its manufacturing footprint across the Midwest.
9/17/22	Dickson Holland (75% stake)	ADDEV Materials (Tikehau Capital; Bpifrance)	-	-	<ul style="list-style-type: none"> ADDEV Materials has acquired a 75% stake in Dickson Holland, a Netherlands-based self-adhesive tapes maker. Dickson Holland generates revenue of EUR 14M. Andy de Waard, the founder's son, retains a 25% stake and remains at the helm of the business.
9/15/22	Performance Plastics (MCM Capital Partners)	Pexco LLC (Odyssey Investment Partners)	-	-	<ul style="list-style-type: none"> Pexco LLC has acquired Performance Plastics, an Ohio-based precision injection molder of high performance, tight tolerance components for the most demanding applications within industries such as aerospace, defense, medical & life science, and precision industrial. Brings Performance Plastics' high-performance polymer knowledge and expertise to Pexco.
9/14/22	Safeplast Oy	Caplugs Inc. (Protective Industries Inc.)	-	-	<ul style="list-style-type: none"> Caplugs Inc. has acquired Safeplast Oy, a Finland-based company that produces high-density polyethylene spirals, nylon wraps and polypropylene strips with Velcro straps to bundle hoses and protect them from sunlight, heat and abrasions for applications such as forestry, construction and offshore drilling. Allows Caplugs to give their customers expanded options for hose protection due to Safeplast's spiral wrap technology using a different cut direction, meaning that no matter what a customer's preference, they will have the correct option available.
9/6/22	Enflo LLC	Pexco LLC (Odyssey Investment Partners)	-	-	<ul style="list-style-type: none"> Pexco LLC has acquired Enflo LLC, a Connecticut-based company that makes a wide range of PTFE shapes, including molded cylinders/tubes and sheets, tape and extruded rods, and tubing in standard and custom sizes. Represents a step forward for Pexco as they continue to build high-performance polymer capabilities. The acquisition represents Pexco's 10th acquisition since 2018 and the first since it was re-acquired by Odyssey Investment Partners in March of this year.
9/2/22	Condale Plastics	Lifco AB	-	-	<ul style="list-style-type: none"> Lifco AB has agreed to acquire Condale Plastics, a United Kingdom-based manufacturer of bespoke plastic extrusions. Condale Plastics will be consolidated in Lifco's Business Area Systems Solutions, division Contract Manufacturing.
9/2/22	Quality Films	Trioworld Group (Altor Equity Partners AB)	-	-	<ul style="list-style-type: none"> Trioworld Group has agreed to acquire Quality Films, a United Kingdom-based provider of high-performance stretch film for load security supporting customers in food, beverage and industrial packaging. Continues Trioworld's growth in the UK market with focus on sustainable high-performance solutions for load security.
9/1/22	Thermo-Fab Corp	Producto Group LLC (Culper Capital Partners)	-	-	<ul style="list-style-type: none"> Producto Group LLC has acquired Thermo-Fab Corp, a Massachusetts-based maker of heavy-gauge plastic enclosures used in medical, industrial and high tech devices. Furtheres Producto's ability to be a full-service solutions provider, creating synergistic value for its customer base.
9/1/22	Bow Plumbing Group Inc.	Wavin BV	-	-	<ul style="list-style-type: none"> Wavin BV has acquired Bow Plumbing Group Inc., a Montreal-based manufacturer of plastic pipes and fittings. Strengthens and extends Wavin's presence in this market to serve customers and stakeholders with efficient, end-to-end solutions for water management.
8/31/22	Master Plastics Inc.	Poly-Tek Inc.	-	-	<ul style="list-style-type: none"> Poly-Tek Inc. has acquired Master Plastics Inc., a California-based injection molder that makes products for the information technology, industrial, medical device, construction, packaging and consumer goods markets. Allows Poly-Tek to expand into new markets and brings together two family-owned companies with numerous synergies.

THIRD QUARTER 2022 POLYMER CONVERTER TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/25/22	Viking Sales Inc.	High Bar Brands LLC	-	-	<ul style="list-style-type: none"> High Bar Brands LLC has acquired Viking Sales Inc., a Michigan-based maker of polyethylene mud flaps. Allows High Bar Brands to benefit from Viking's relationship with OEMs and manufacturing capabilities, and give Viking access to High Bar's expanded marketing, sales and distribution channels in North America.
8/24/22	Crist Group Inc.	Harrington Industrial Plastics (Nautic Partners)	-	-	<ul style="list-style-type: none"> Harrington Industrial Plastics has acquired Crist Group, a California-based specialty fabricator that specializes in fabricating fluoroplastics with a focus on the semiconductor end market and applications in other markets including medical. The acquisition will enable Harrington to deepen its offering to customers in the semiconductor industry by providing fabrication services that complement its existing products.
8/16/22	DaMar Plastics Manufacturing Inc.	Salona Global Medical Device Corp.	-	-	<ul style="list-style-type: none"> Salona Global Medical Device Corp. has agreed to acquire DaMar Plastics Manufacturing Inc., a California-based injection and blow molder. Builds upon Salona's strategy to create a fully integrated global medical device company and would add precision plastics technology capabilities to the company.
8/15/22	Emballage MPP Inc.	Dallas Plastics Corporation (Sole Source Capital)	-	-	<ul style="list-style-type: none"> Dallas Plastics Corporation has acquired Emballage MPP Inc., a Canada-based blown film maker. Gives Dallas Plastics access to the Canadian flexible packaging market. The MPP acquisition is the second for Dallas Plastics since it became part of SSC almost 2 years ago.
8/13/22	Plastic Industries, Inc. (Behrman Capital) & Andersen Plastics	Altium Packaging (GIC)	-	-	<ul style="list-style-type: none"> Altium Packaging has acquired Plastic Industries, Inc., a New Hampshire-based maker of both high-density polyethylene and PET bottles for a variety of applications, including dairy, juice, water and drinkable yogurt, and Andersen Plastics, an Oregon-based blow molding manufacturer. Both acquisitions expand Altium's offerings and increase their bottle manufacturing capabilities throughout key industries and geographies.
8/11/22	FFP Packaging Solutions	Constantia Flexibles International GMBH	-	-	<ul style="list-style-type: none"> Constantia Flexibles International GMBH has acquired FFP Packaging Solutions, a United Kingdom-based flexible packaging business. Earns Constantia Flexibles their first consumer plant in the UK and aligns well with their Vision 2025 growth strategy of investing in competitive businesses with potential for future growth.
8/10/22	Rhenoflex	Coats Group	\$119M	-	<ul style="list-style-type: none"> Coats Group has acquired Rhenoflex, a Germany-based provider of reinforcement solutions in the footwear and lifestyle sector that focuses on thermoplastic materials for high-end, heel and side reinforcements, as well as insoles. Represents a synergistic bolt-on acquisition and a unique opportunity to strengthen Coats' position as a global leader in footwear components.
8/9/22	ISOLITE GmbH (Showa Denko Materials Co., Ltd.)	Certina Group	-	-	<ul style="list-style-type: none"> Certina Group has agreed to acquire ISOLITE GmbH, a Germany-based manufacturer/distributor of thermal insulations for automobiles, aircraft, and other industrial applications. Strengthens the Automotive & Mobility segment of Certina.
8/8/22	Polymer Film & Bag, Inc. (Polymer Packaging)	Charter Next Generation (KKR; Leonard Green & Partners)	-	-	<ul style="list-style-type: none"> Charter Next Generation has agreed to acquire Polymer Film & Bag, Inc., the Ohio-based extrusion business of the Polymer Packaging family of companies. Fits CNG's existing profile and will help them continue to outpace industry growth in the future according to the company Chairman and CEO.
8/4/22	Westpak; Flexipack	Walki	-	-	<ul style="list-style-type: none"> Walki has acquired Westpak and Flexipack, two Finland-based flexible packaging companies serving Nordic food brands. Continues Walki's strategy of expanding their offering of more sustainable packaging alternatives by leveraging on their strong material science know-how. Flexipack and Westpak have a very complementary offering of high-quality printed products.
8/4/22	Südplast Group	Roundliner (AURELIUS)	-	-	<ul style="list-style-type: none"> Roundliner has acquired Südplast Group, a Germany-based specialty provider of packaging films for the industrial, food, shipping and transportation industries. The company also specializes in the production of box hoods. Strengthens the European market position of Roundliner.
8/3/22	Atlapac Corp. & Inno-lok Division of Polymer Packaging	Dazpak Flexible Packaging (H.I.G. Capital)	-	-	<ul style="list-style-type: none"> Dazpak Flexible Packaging has acquired Atlapac Corp., an Ohio-based contract manufacturer and distributor of pouches and bags and the Inno-lok division of Polymer Packaging, an Ohio-based flexible packaging products business. Expands Dazpak's footprint outside their core Western U.S. markets to a new customer footprint and portfolio of flexible packaging solutions.

THIRD QUARTER 2022 POLYMER CONVERTER TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/2/22	Minnesota Rubber and Plastics (KKR & Co Inc)	Trelleborg AB	\$950M	-	<ul style="list-style-type: none"> Trelleborg AB has agreed to acquire Minnesota Rubber and Plastics, a Minnesota-based company that has liquid silicone rubber molding, injection molding of plastics, rubber molding, overmolding, assembly and other services. Expands Trelleborg's polymer and plastics business in North America.
8/1/22	Plastic Processors Inc.	Mac Plastics Manufacturing Inc.	-	-	<ul style="list-style-type: none"> Mac Plastics Manufacturing Inc. has acquired the assets of Plastic Processors Inc., an Illinois-based custom extruder of products for markets including construction and lawn and garden. Gives Mac its second plant and the opportunity to enter new markets. With the purchase of Plastic Processors, Mac plans to expand into the pool and spa, furniture, aviation, and railroad products.
8/1/22	Zulu Packaging	Premier Paper Group (Japan Paper & Pulp)	-	-	<ul style="list-style-type: none"> Premier Paper Group (PPG) has acquired Zulu Packaging, a United Kingdom-based wholesaler of a wide range of films, including flexible packaging films for food packaging processors and commercial printing laminating films for container manufacturers. PPG aims to leverage its experience and Zulu's capabilities as a specialist in this field to offer more products to existing and new customers and to create synergies such as streamlining inventory and delivery functions.
7/28/22	HBPO GmbH (33.33% stake) (HELLA GmbH & Co. KGaA)	Compagnie Plastic Omnium SE	\$884M	-	<ul style="list-style-type: none"> Compagnie Plastic Omnium SE has acquired a 33.33% stake in HBPO GmbH, a Germany-based joint venture that engages in the development, construction, assembly and logistics of integrated front-end modules for vehicle manufacturers in Germany and internationally. Compagnie Plastic Omnium SE now has full ownership of the former joint venture. The acquisition of the remaining 33.33% of HBPO will allow Plastic Omnium to implement its growth strategy by broadening the range of modules offered.
7/26/22	Alphaplex GmbH	Arla Plast AB	\$5.5M	-	<ul style="list-style-type: none"> Arla Plast AB has acquired Alphaplex, a Germany-based supplier of plastic sheets. Strengthens Arla Plast's position in the important German market, and it also supports their ambition to increase their footprint in Austria and Switzerland.
7/22/22	MG Silikon (Saint-Gobain)	Trelleborg AB	-	-	<ul style="list-style-type: none"> Trelleborg AB has agreed to acquire MG Silikon, a Germany-based silicone elastomer processor. With the acquisition, Trelleborg plans to increase the production capacity of airframe seals and strengthen its offerings in sealing products for cabin interiors.
7/20/22	American Plastics LLC (Highview Capital LLC and Victory Park Capital Advisors)	Unknown buyer	-	-	<ul style="list-style-type: none"> An unknown buyer has acquired American Plastics LLC, a Missouri-based company that designs and manufactures plastic-injection molded products for households, garage storage and commercial cleaning end-markets. Highview Capital LLC built American Plastics with partner Victory Park Capital Advisors LLC, starting with the 2017 purchase of Katy Industries Inc. and a subsequent 2018 merger with sister companies Creative Plastic Concepts and Centrex Plastics. The new owner of American Plastics was not revealed in a July 20 announcement.
7/19/22	Bright Plastics Inc.	Thunderbird LLC	-	-	<ul style="list-style-type: none"> Thunderbird LLC has acquired Bright Plastics Inc., a North Carolina-based injection molding contract manufacturer, with custom capabilities, especially for large-scale items. Represents the second plastics-related acquisition of the year for Thunderbird.
7/19/22	Tenere Inc. (Watermill Management Company, LLC)	CGI Automated Manufacturing, LLC (Core Industrial Partners)	-	-	<ul style="list-style-type: none"> CGI Automated Manufacturing has acquired Tenere Inc., a Wisconsin-based manufacturer with injection molding operations. Helps expand the CGI platform's geographic reach while strengthening its presence in high-growth, technology-focused end markets. Tenere is the seventh add-on acquisition to Core's CGI Manufacturing Holdings platform, which launched in August 2021.
7/17/22	Garplast	SGA Group	-	-	<ul style="list-style-type: none"> SGA Group has acquired Garplast, a Spain-based manufacturer of plastic bottles, tubes, tubs and more for the perfumery, cosmetics and pharmaceutical sectors. Boosts SGA's organic growth through the acquisition of new machinery, products and the development of the sales team. SGA will also focus on boosting external growth through the acquisition of complementary companies.
7/13/22	GL Plastics	VDL Groep	-	-	<ul style="list-style-type: none"> VDL Groep has acquired GL Plastics, a Netherlands-based company that specializes in plastic injection molding. Represents a strategic fit for VDL Groep and will allow them to help GL Plastics further develop their metal-plastic combination offerings.

THIRD QUARTER 2022 POLYMER CONVERTER TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
7/13/22	Novapac	New Packaging Group (Newport Capital)	-	-	<ul style="list-style-type: none"> New Packaging Group has acquired Novapac, a Netherlands-based thermoformed plastic packaging company. In addition to Novapac, the New Packaging Group now consists of industry peers Bliston Packaging, Meulendijks Packaging and Nedupack.
7/11/22	Dependable Plastics & Pattern, Inc.	Biomerics LLC	-	-	<ul style="list-style-type: none"> Biomerics LLC has acquired Dependable Plastics & Pattern, Inc., a California-based company that engages in thermoforming, liquid cast resin molding and additive manufacturing. Expands Biomerics' plastic component capabilities for the interventional robotic surgical market which they intend to leverage for their new Interventional Medical Plastics Division.
7/8/22	Rhino Health USA	Honeywell	-	-	<ul style="list-style-type: none"> Honeywell has agreed to take an ownership interest in Rhino Health USA, a New Mexico-based nitrile exam gloves maker. Honeywell is bringing its manufacturing, supply chain and personal protective equipment (PPE) technical knowledge to help Rhino Health USA accelerate its ramp up and overall production capacity.
7/7/22	Prototype & Plastic Mold Company Inc.	Polymer Corporation (Prospect Partners)	-	-	<ul style="list-style-type: none"> Polymer Corporation has acquired Prototype & Plastic Mold Company Inc., a Connecticut-based injection molder. Expands Polymer Corporation's footprint in the injection molding space. With the acquisition of PPM, Polymer has 45 injection molding presses for small- to large-part production.
7/7/22	Assets of CK Technologies (Cascade Engineering Inc.)	Creative Liquid Coatings	-	-	<ul style="list-style-type: none"> Creative Liquid Coatings has acquired the assets of CK Technologies, an Ohio-based injection molder of parts for commercial trucks and buses. Helps CLC's total sales approach \$400 million. Even before the acquisition, CLC had already booked about \$200 million in business for 2023. With the acquisition, injection molding sales alone will be at least \$200 million according to the company CEO.
7/4/22	Novo Tech (Avallon)	Isosport	-	-	<ul style="list-style-type: none"> Isosport has acquired Novo Tech, a Poland-based polymer product maker. Novo Tech, with factories located in Poland and Romania, and the sales division in Belgium, has products that include plastic mats and poultry pads under the Astroturf® brand name and spray suppression flaps under the Clear Pass® brand name.
7/1/22	UAB Baltijos Polistirenas	BEWI	-	-	<ul style="list-style-type: none"> BEWI has agreed to acquire UAB Baltijos Polistirenas, a Lithuania-based company that provides EPS insulation for construction applications. Expands BEWI's geographic presence establishing a leading position in Lithuania and a platform for further growth in the Baltics.
6/24/22	Hendrickson Bros.	Dawn Industries Inc. (Antelco Pty. Ltd.)	-	-	<ul style="list-style-type: none"> Dawn Industries Inc. has acquired Hendrickson Bros., a California-based injection molder of plastic products such as flow controls, pressure regulators, hose vacuum breakers and micro irrigation supplies for the agricultural, commercial and landscaping markets. Strengthens Dawn's market presence by strengthening their range of products and services. Dawn itself was just acquired March 4 by micro irrigation product maker Antelco Pty. Ltd. of St. Agnes, Australia, which is related to Antelco Corp. of Longwood, Fla., and Antelco UK Ltd. of Leighton Buzzard, England.

THIRD QUARTER 2022 DISTRIBUTION TRANSACTIONS

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
9/29/22	Eurotrading S.p.A.	Azelis	-	-	<ul style="list-style-type: none"> Azelis has agreed to acquire Eurotrading S.p.A., an Italy-based distributor of specialty chemicals to the personal care market. Reinforces Azelis' leading footprint in the Italian market for personal care, as well as in the broader life sciences segment. Eurotrading's extensive product portfolio in actives, emollients and emulsifiers further enhances the Group's lateral value chain and solidifies its market leadership in the local personal care industry.
9/28/22	Johan Steenks AS	Telko (Aspo)	-	-	<ul style="list-style-type: none"> Telko has acquired Johan Steenks AS, a Norway-based distributor of engineering plastics and plastic additives. Strengthens Telko's plastic distribution business in Norway and further shows the progress of their compounder strategy.
9/22/22	Terra Firma	DKSH	-	-	<ul style="list-style-type: none"> DKSH has agreed to acquire Terra Firma, a Texas-based distributor of specialty chemicals. Expands DKSH's platform of the Business Unit Performance Materials to the USA and Canada. The transaction is an important step in DKSH's strategy to build a global distribution platform for specialty chemicals and ingredients.
9/21/22	Sarfam Indústria Comércio e Importação Ltda.	Safic-Alcan	-	-	<ul style="list-style-type: none"> Safic-Alcan has acquired Sarfam Indústria Comércio e Importação Ltda., a Brazil-based chemical distributor specializing in the personal care, perfumery and cosmetics sectors. The move follows hot on the heels of the establishment of Safic-Alcan in Brazil and the acquisition of Proquimil.
9/20/22	Proquimil Produtos Químicos	Safic-Alcan	-	-	<ul style="list-style-type: none"> Safic-Alcan has acquired Proquimil Produtos Químicos, a Brazil-based chemical distributor specializing in rubber and plastic polymers and additives. The integration will be led by Luiz Maranhão, a seasoned Brazilian executive in the chemical distribution sector, who recently joined the Group to become General Manager of Safic-Alcan Brasil, the newly established entity in the region. Represents a major step toward Safic-Alcan's ongoing geographic diversification.
9/7/22	Kuni Chemical Co., Ltd. (Japan Private Equity Co., Ltd.)	IMCD N.V.	-	-	<ul style="list-style-type: none"> IMCD N.V. has acquired Kuni Chemical, a Japan-based company that specializes in industrial applications ranging from coatings and construction to automotive and packaging materials. Expands IMCD's footprint in Japan and adds a new business segment to IMCD with an entry into the Japanese coatings and construction markets and also complements the portfolio of their Advanced Materials business.
8/25/22	Bark Packaging (Quadrum Capital)	Berlin Packaging (Oak Hill, CPP Investments)	-	-	<ul style="list-style-type: none"> Berlin Packaging has agreed to acquire Bark Packaging, a Netherlands-based supplier of industrial, flexible and UN-certified packaging. Gives Berlin Packaging a stronger foothold in Northern Europe, especially for flexible and UN-certified packaging. It will also expand their industrial packaging capabilities in Northern Europe, including Germany, a key European market.
8/23/22	PromaPlast Resinas, S.A. de C.V., Proveedora de Materiales Plásticos, S.A. de C.V. and PromaPlast USA Inc.	IMCD Mexico S.A. de C.V. (IMCD N.V.)	-	-	<ul style="list-style-type: none"> IMCD Mexico S.A. de C.V. has agreed to acquire PromaPlast Resinas, S.A. de C.V., Proveedora de Materiales Plásticos, S.A. de C.V. and PromaPlast USA Inc., a Mexico-based advanced materials distributor that serves the Mexican and U.S. markets. Gives IMCD Mexico a major new market and further expands their capabilities in the United States.
8/23/22	Prime Surfactants Limited	Brenntag SE	-	-	<ul style="list-style-type: none"> Brenntag SE has acquired Prime Surfactants Limited, a United Kingdom-based distributor of surfactants specialties for the Personal Care and HI&I industries and other industry segments. Enhances Brenntag's product and service offering to customers in the UK and underlines their ambition to further strengthen the specialties business of their focus industries.
8/18/22	Dağalti Kauçuk Ve Kimyevi Maddeler Sanayi Ticaret A.S.	Azelis	-	-	<ul style="list-style-type: none"> Azelis has agreed to acquire Dağalti Kauçuk Ve Kimyevi Maddeler Sanayi Ticaret A.S., a Turkey-based specialty chemicals distributor active in the rubber and plastics additives (R&PA) market. Strengthens Azelis' R&PA footprint in Turkey. Dağalti's extensive product portfolio strategically complements the Group's lateral value chain in industrial chemicals, enhancing the offerings and technical expertise Azelis provides to customers.

THIRD QUARTER 2022 DISTRIBUTION TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
8/12/22	Avient's Distribution business	H.I.G. Capital	\$950M	10x	<ul style="list-style-type: none"> H.I.G. Capital has agreed to acquire the distribution business of Avient, which currently focuses on bringing a portfolio of 4000+ polymers, colorants and additives from 40+ suppliers to their customers. On April 20, 2022, the company announced it was exploring a sale of its Distribution business, in connection with announcing an agreement to acquire the Protective Materials business of DSM. The company noted that after-tax proceeds of approximately \$750 million from the sale will be used to pay down near-term maturing debt.
8/1/22	Vicom Distribución Productos Químicos, S.L.	Univar Solutions	-	-	<ul style="list-style-type: none"> Univar Solutions has acquired Vicom Distribución Productos Químicos, S.L., a Spain-based specialty chemicals distributor. Further expands Univar's specialty portfolio of coatings, adhesives, sealants and elastomers (CASE) offerings by enhancing its range of additive solutions and augmenting its presence in Europe with more sustainable options.
8/1/22	Commercial Industrial Supply	Harrington Industrial Plastics (Nautic Partners)	-	-	<ul style="list-style-type: none"> Harrington Industrial Plastics has acquired Commercial Industrial Supply, a South Carolina-based distributor of thermoplastic fittings, valves, pipe, consumable filtration and other products. Helps accelerate Harrington's own e-commerce and online lead generation capabilities.
8/1/22	Volp Indústria e Comércio Ltda	Barentz International (Cinven)	-	-	<ul style="list-style-type: none"> Barentz International has acquired Volp Indústria e Comércio Ltda, a Brazil-based distributor of supplies and solutions for the Personal Care segment. Bolsters Barentz' overall position in the South American region and complements the current activities of Barentz' joint venture Tovani Benzaquen and strengthens and balances the group proposition in Life Sciences.
7/27/22	Styles Aviation, Inc.	GracoRoberts (CM Equity Partners)	-	-	<ul style="list-style-type: none"> GracoRoberts has acquired Styles Aviation, a New York-based company that provides 30,000 online customers on-demand access to thousands of aerospace consumables, serving the aerospace community with digital sophistication, nimbleness and family-style care. Addresses the evolving needs of GracoRoberts' customers and supplier partners by significantly expanding GracoRoberts' global e-commerce capabilities and its offerings in the MRO segment.
7/20/22	Casa Do Adubo S/A (Axxon Group)	Nutrien Ltd.	-	-	<ul style="list-style-type: none"> Nutrien Ltd. has agreed to acquire Casa Do Adubo S/A, a Brazil-based company that consists of 39 retail locations, under the brand Casa do Adubo, and 10 distribution centers, under the brand Agrodistribuidor Casal. Supports Nutrien's Retail growth strategy in Brazil. The acquisition of Casa do Adubo is expected to result in additional run-rate sales of approximately \$400 million, increasing total Nutrien Ag Solutions annual sales in Latin America to approximately \$2.2 billion.
7/17/22	Chemical Solutions Sdn Bhd	Azelis	-	-	<ul style="list-style-type: none"> Azelis has agreed to acquire Chemical Solutions Sdn Bhd, a Malaysia-based distributor of raw materials in the personal care, cosmetics and household markets. Strengthens Azelis' presence in the Malaysian market, further reinforcing the group's coverage of the Asia Pacific region. The addition of ChemSol's extensive and well known product portfolio, specifically in actives and functional ingredients, significantly expands Azelis' lateral value chain for the local Personal Care market.
7/4/22	Georg Breuer GmbH	DKSH	-	-	<ul style="list-style-type: none"> DKSH has agreed to acquire Georg Breuer GmbH, a Germany-based distributor of functional ingredients for the food industry. Expands DKSH's food ingredients business in Europe, particularly in the promising plant-based healthy foods segment. The deal is also complementary to the Victa Foods acquisition, signed earlier in the year.
7/4/22	Bregaglio S.r.l. (Zschimmer & Schwarz Group)	2M Holdings Ltd	-	-	<ul style="list-style-type: none"> 2M Holdings Ltd has agreed to acquire Bregaglio S.r.l., an Italy-based distributor to the personal care industry and more recently to the nutraceutical and food supplements segments in the region. Represents a natural fit with the life science distribution of the Surfachem Group, a 2M Group Company.









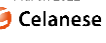






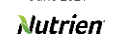




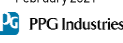
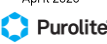





THIRD QUARTER 2022 DISTRIBUTION TRANSACTIONS *(Continued)*

Announced Date	Target	Acquirer	Value	EBITDA Mult.	Details
7/1/22	Cosmoquímica Indústria e Comércio Ltda. and Cosmolog Logística Ltda.	Manuchar (Lone Star Funds)	-	-	<ul style="list-style-type: none"> Manuchar has acquired Cosmoquímica Indústria e Comércio Ltda., a Brazil-based chemical distributor and Cosmolog Logística Ltda., a Brazil-based company specializing in logistic services that also offers general product warehousing, a climate-controlled warehouse and storage tanks with capacity for approximately two million liters. Supports Manuchar's plans to strengthen its leading chemical distribution platform across emerging markets and to expand its global network, both geographically and in terms of its product offering.
7/1/22	Chemical Partners and Chempart Polymers entities in Lebanon and Belgium	Azelis	-	-	<ul style="list-style-type: none"> Azelis has agreed to acquire Chemical Partners and Chempart Polymers, entities in Lebanon and Belgium that distribute chemical-based products. Represents a strategic acquisition to strengthen Azelis' lateral value chain in industrial chemicals following the acquisition of Umongo earlier this year, providing the group with a strong portfolio of products and expertise spanning the key end markets in industrial chemicals in the region (CASE, rubber & plastic additives, and lubricants & metal working fluids).

Source: Target/acquirer press releases

PNC'S CHEMICALS & PLASTICS EXPERIENCE

Lending Experience

<p>September 2022</p>  <p>\$600,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>September 2022</p>  <p>\$2,000,000,000</p> <p>364-Day Credit Facility</p> <p>Participant</p>	<p>August 2022</p>  <p>\$2,250,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>August 2022</p>  <p>\$575,000,000</p> <p>Term Loan B</p> <p>Co-Documentation Agent & Co-manager</p>	<p>June 2022</p>  <p>\$1,000,000,000 \$375,000,000</p> <p>Revolving Credit Facility Term Loan A Term Loan A</p> <p>Syndication Agent, Documentation and Arranger</p>	<p>June 2022</p>  <p>\$800,000,000</p> <p>Revolving Credit Facility</p> <p>Admin. Agent</p>
<p>June 2022</p>  <p>\$1,500,000,000</p> <p>Revolving Credit Facility</p> <p>Co-Documentation Agent</p>	<p>May 2022</p>  <p>\$600,000,000 \$436,000,000</p> <p>Revolver Term Loan B</p> <p>Admin. Agent</p>	<p>May 2022</p>  <p>\$1,200,000,000</p> <p>Revolving Credit Facility</p> <p>Syndication Agent</p>	<p>April 2022</p>  <p>\$600,000,000 \$400,000,000</p> <p>Revolving Credit Facility Term Loan A</p> <p>Administrative Agent</p>	<p>March 2022</p>  <p>\$2,495,000,000</p> <p>Delayed Draw Term Loan</p> <p>Joint Lead Arranger & Bookrunner</p>	<p>March 2022</p>  <p>\$1,750,000,000 \$1,500,000,000</p> <p>Revolving Credit Facility Delayed Draw Term Loan</p> <p>Participant</p>
<p>March 2022</p>  <p>\$325,000,000</p> <p>Delayed Draw Term Loan</p> <p>Administrative Agent</p>	<p>December 2021</p>  <p>\$300,000,000 \$250,000,000</p> <p>Revolving Credit Facility Term Loan A</p> <p>Co-Documentation Agent & Bookrunner</p>	<p>October 2021</p>  <p>\$500,000,000</p> <p>Revolving Credit Facility</p> <p>JLA & Syndication Agent</p>	<p>October 2021</p>  <p>\$450,000,000</p> <p>Revolving Credit Facility</p> <p>Admin. Agent</p>	<p>August 2021</p>  <p>\$2,500,000,000</p> <p>Revolving Credit Facility</p> <p>JLA & Co-Documentation Agent</p>	<p>August 2021</p>  <p>\$200,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>
<p>July 2021</p>  <p>\$350,000,000</p> <p>Revolving Credit Facility</p> <p>Documentation Agent</p>	<p>June 2021</p>  <p>\$2,000,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>June 2021</p>  <p>\$4,500,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>May 2021</p>  <p>\$350,000,000</p> <p>Revolving Credit Facility</p> <p>Co-Lead Arranger and Syndication Agent</p>	<p>May 2021</p>  <p>\$1,500,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>April 2021</p>  <p>\$200,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>
<p>April 2021</p>  <p>\$400,000,000 \$400,000,000</p> <p>Revolving Credit Facility Term Loan B</p> <p>JLA & Bookrunner</p>	<p>April 2021</p>  <p>\$200,000,000 \$50,000,000</p> <p>Revolving Credit Facility Term Loan A</p> <p>Admin. Agent</p>	<p>March 2021</p>  <p>\$250,000,000</p> <p>Revolving Credit Facility</p> <p>Co-Documentation Agent</p>	<p>February 2021</p>  <p>\$500,000,000 \$350,000,000</p> <p>Revolving Credit Facility Term Loan B</p> <p>Documentation Agent</p>	<p>February 2021</p>  <p>\$2,000,000,000</p> <p>Delayed Draw Term Loan</p> <p>Co-Lead Arranger & Syndication Agent</p>	<p>January 2021</p>  <p>\$200,000,000</p> <p>Revolving Credit Facility</p> <p>JLA & Bookrunner</p>
<p>April 2020</p>  <p>\$50,000,000 \$175,000,000</p> <p>Revolving Credit Facility Term Loan A</p> <p>JLA</p>	<p>April 2020</p>  <p>\$2,000,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>April 2020</p>  <p>\$1,300,000,000</p> <p>Revolving Credit Facility</p> <p>JLA & Admin. Agent</p>	<p>March 2020</p>  <p>\$900,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>	<p>January 2020</p>  <p>\$600,000,000 \$250,000,000</p> <p>Revolving Credit Facility Term Loan A</p> <p>Senior Co-Arranger</p>	<p>December 2019</p>  <p>\$750,000,000</p> <p>Revolving Credit Facility</p> <p>Participant</p>

Bonds Experience

<p>June 2022</p>  <p>\$400,000,000</p> <p>Senior Notes</p> <p>Passive Joint Bookrunner</p>	<p>January 2022</p>  <p>\$325,000,000</p> <p>Senior Notes</p> <p>Joint Bookrunner</p>	<p>January 2022</p>  <p>\$300,000,000</p> <p>Senior Notes</p> <p>Co-Manager</p>	<p>November 2021</p>  <p>\$1,000,000,000</p> <p>Senior Notes</p> <p>Co-Manager</p>	<p>August 2021</p>  <p>\$1,700,000,000</p> <p>Senior Notes</p> <p>Passive Joint Bookrunner</p>	<p>August 2021</p>  <p>\$450,000,000</p> <p>Senior Notes</p> <p>Senior Co-Manager</p>
<p>July 2021</p>  <p>\$400,000,000</p> <p>Senior Notes</p> <p>Co-Manager</p>	<p>May 2021</p>  <p>\$400,000,000</p> <p>Senior Notes</p> <p>Joint Bookrunner</p>	<p>April 2021</p>  <p>\$400,000,000</p> <p>Senior Notes</p> <p>Joint Bookrunner</p>	<p>April 2021</p>  <p>\$575,000,000</p> <p>Senior Notes</p> <p>Joint Bookrunner</p>	<p>March 2021</p>  <p>\$700,000,000</p> <p>Senior Notes</p> <p>Joint Bookrunner</p>	<p>December 2020</p>  <p>\$535,000,000</p> <p>Senior Notes</p> <p>Co-Manager</p>

¹Federal Ministry for Economic Affairs and Energy (Sept 2019)

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