




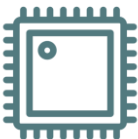






Advanced Materials and Chemicals Update

June 2023

Advanced Polymers 	Agriculture Chemicals 	Catalysts 	ChemTech 	Coatings 
Electronic Materials 	Engineered Materials 	Biosciences / Bio-Chemicals / Bio-Industrials 	Ingredients and Additives 	Sustainable Materials 

PJ Deschenes

Global Co-Head of Nomura Greentech
New York, NY
Mobile: +1 617 512 5378
pj.deschenes@nomuragreentech.com

Keith Tauro

Head of Advanced Materials and Chemicals, Americas
New York, NY
Mobile: +1 646 617 0791
keith.tauro@nomuragreentech.com

Duncan Williams

Global Co-Head Nomura Greentech
San Francisco, CA
Mobile: +1 415 418 4555
duncan.williams@nomuragreentech.com

Niul Wood

Head of Advanced Materials and Chemicals, EMEA
London, U.K.
Mobile: +44 792 564 2383
niul.wood@nomura.com

Key Index Trading Performance

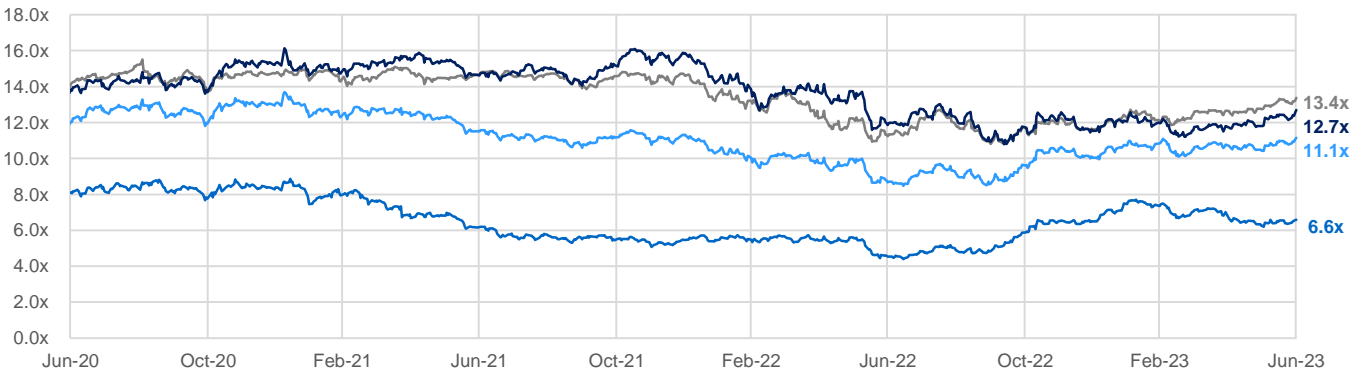
	Share Price Performance				
	3-Years	1-Year	YTD	3 Months	1 Month
S&P 500	44%	18%	16%	8%	6%
S&P Chemicals Index	46%	13%	6%	3%	10%
S&P Commodity Chemicals Index	50%	4%	5%	(4%)	8%
S&P Specialty Chemicals Index	27%	10%	7%	6%	12%

(Indexed to 100)



	Average Performance (EV / NTM EBITDA)					
	3-Years	1-Year	YTD	3 Months	1 Month	Current
S&P 500	13.5x	12.1x	12.5x	12.8x	13.1x	13.4x
S&P Chemicals Index	11.1x	10.0x	10.6x	10.7x	10.8x	11.1x
S&P Commodity Chemicals Index	6.5x	6.2x	6.9x	6.7x	6.4x	6.6x
S&P Specialty Chemicals Index	13.7x	11.9x	11.9x	12.0x	12.3x	12.7x

(EV / NTM EBITDA)



Advanced Materials and Chemicals Industry M&A Activity

	2023		2022		YoY Change	
	#	Value (\$bns)	#	Value (\$bns)	#	Value
January	71	\$2.4	81	\$7.3	(12%)	(67%)
February	44	\$2.3	61	\$16.9	(28%)	(86%)
March	66	\$17.5	77	\$4.9	(14%)	257%
April	42	\$2.8	69	\$5.2	(39%)	(47%)
May	59	\$8.3	60	\$29.2	(2%)	(72%)
June	57	\$13.5	61	\$3.5	(7%)	283%
Year to Date	339	\$46.7	409	\$67.1	(17%)	(30%)

Select Mergers & Acquisitions

- On June 1, **PureTech Scientific**, a global leader in organic synthesis of ultra-high purity alpha hydroxy acids for the life sciences and specialty chemical industries, announced it has reached an agreement to acquire the Glycolic Acid business of **The Chemours Company**, a Wilmington, Delaware-based chemistry company, for **\$137 million** in cash ([Press Release](#))
- On June 13, **Bunge**, a leader in agribusiness, food and ingredients, announced it will merge with Viterra, a leading, global agriculture network connecting producers to consumers with sustainable, traceable and quality-controlled agricultural products; **CPP Investments** will receive ~12% equity position in the combined company and **\$0.8 billion** in cash upon transaction close, as **CPP** has held a 40% investment in **Viterra** since 2016. The combined companies values Bunge and Viterra at **\$17 billion** ([Press Release](#))
- On June 15, **HCS Group**, a leading international supplier of solutions for high-value hydrocarbon specialties, announced it will be acquired by **International Chemical Investors Group** (ICIG), a privately owned industrial group, for an undisclosed fee ([Press Release](#))
- On June 16, **IMCD**, a leading distribution partner, formulator of specialty chemicals and ingredients, announced it will acquire 100% of the shares of **Brylchem Group**, which offers a wide range of products in the coatings, construction, advanced materials, agrochemical, home care and industrial cleaning, feed and veterinary as well as lubricants industries for the Singapore and Vietnam markets ([Press Release](#))
- On June 22, **Mitsui & Co., Ltd.** announced an agreement with **Celanese Corporation**, a leading American chemical company, to acquire a 70% stake in its wholly owned subsidiary **Nutrinova Netherlands B.V.**, which manufactures and sells functional food ingredients, and concluded related agreements, for **\$473 million** ([Press Release](#))
- On June 23, **H.B. Fuller**, a provider of adhesives, sealants and other specialty chemical products, announced it has acquired **Adhezion Biomedical**, a privately held U.S. medical adhesives business, and **XCHEM International**, an adhesives manufacturer in the United Arab Emirates that offers a wide range of specialty adhesives and coatings for industrial and infrastructure applications ([Press Release](#))
- On June 26, **JIC Capital**, a 100% subsidiary of **Japan Investment Company**, announced its intention to launch a JPY 903bn Public Tender Offer for **JSR Corporation**. **Nomura** acted as Financial Advisor to **JIC Capital** (**JICC**)
- On June 28, **Arkema**, a French special materials company, announced the acquisition of **Glenwood Private Equity's** 54% stake of **PI Advanced Materials**, a South Korean polyimide film maker, for \$794 million ([Press Release](#))

Select Capital Raises

- On June 1, **Ceibo**, a Chile-based advanced copper extraction technology company, announced that it has raised a **\$30 million** Series B financing, led by **Energy Impact Partners** ([Press Release](#))
- On June 6, **Ecovative Design**, the world's leading mycelium technology company, announced the initial closing of a Series E round of over **\$30 million**, led by **Viking Global Investors** and includes **Standard Investments**, **FootPrint Coalition Ventures**, and **AiiM Partners** ([Press Release](#))
- On June 23, **Carbonwave**, the world's leading developer of ultra-regenerative advanced biomaterials from seaweed, announced it has received an investment of up to **\$6 million** from **Pegasus Capital Advisors** and the **Global Fund for Coral Reefs** ([Press Release](#))

**Regulatory
Announcements**

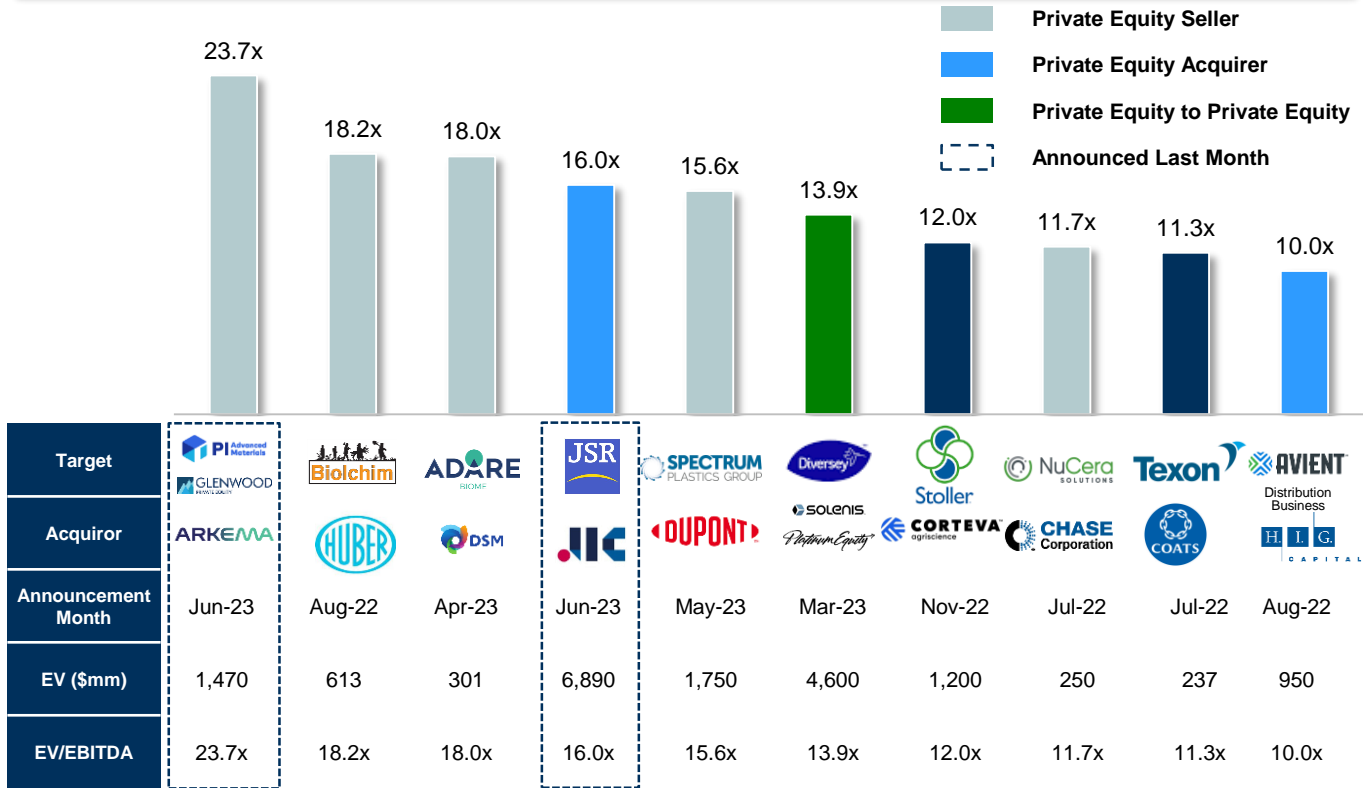
- On June 2, **Chemours**, **DuPont de Nemours** and **Corteva** announced they have reached an agreement in principle to comprehensively resolve all PFAS-related drinking water claims of a defined class of public water systems that serve the vast majority of the United States population, collectively contributing ~\$1.2 billion to a settlement fund ([Press Release](#))
- On June 22, **3M** announced it entered into a broad class resolution to support PFAS remediation for public water suppliers (PWS) that detect PFAS at any level or may do so in the future and has agreed to contribute up to a present value of \$10.3 billion, payable over 13 years ([Press Release](#))

**Corporate and
Market
Announcements**

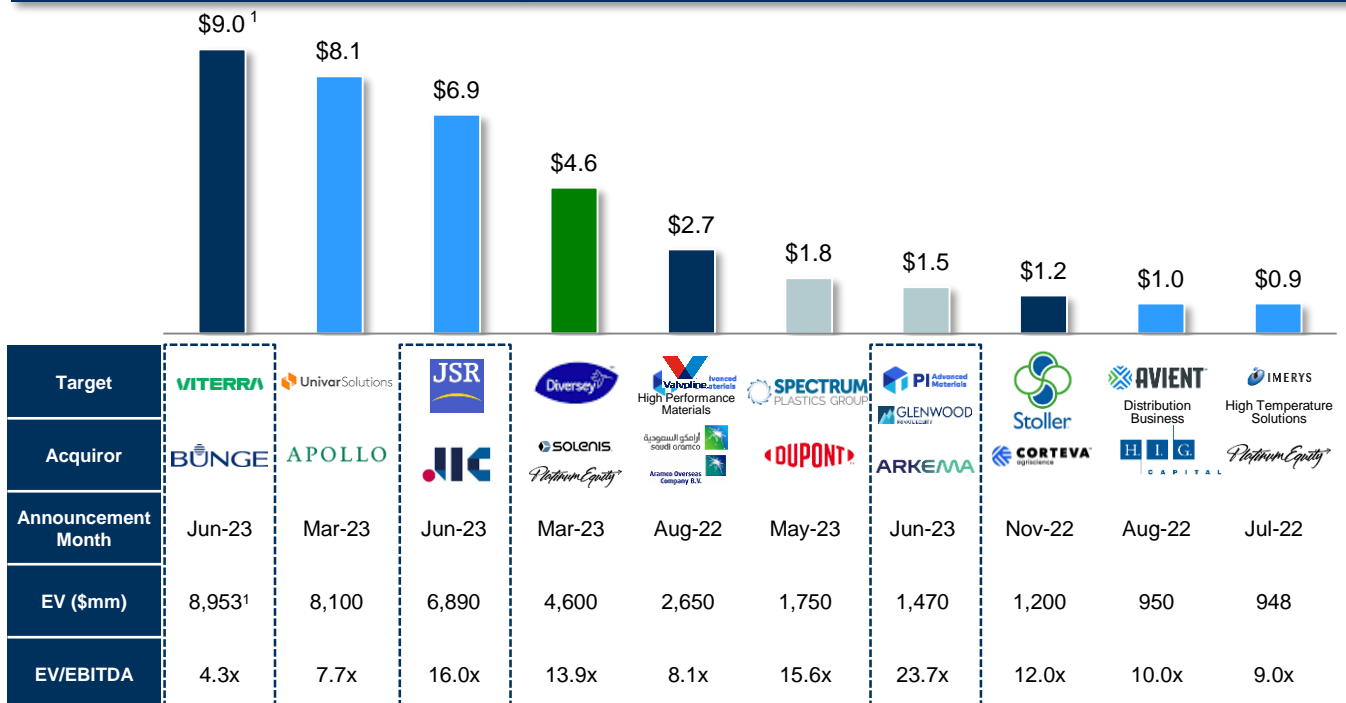
- **Dow**, a global materials science company, announced a collaboration with **Procter & Gamble China** for an air capsule e-commerce packaging, which aims to deliver an effective and efficient way to protect products while avoiding excessive packaging in e-commerce and facilitating recyclability ([Press Release](#))
- **DuPont** and **JetCool Technologies** announced a collaboration to increase adoption of advanced liquid cooling technology, enabling thermal management for semiconductors, data centers and other high-performance computing applications, introducing a new sales channel to bring **JetCools'** advanced cooling solutions to semiconductor companies in Taiwan and Singapore ([Press Release](#))
- **Groupe Berkem**, a leading player in bio-based chemistry, announced the creation of a joint venture with **Groupe Dolidol**, a Morocco-based player in the polyurethane foam, bedding and industrial joinery sectors sponsored by **Development Partners International (DPI investment)**, to set up an alkyd resin production and sales site in the Ivory Coast ([Press Release](#))
- **LyondellBasell**, a leader in the global chemical industry and **AFA Nord**, a leading recycler of agricultural film, have agreed to create a 50:50 joint venture that intends to recycle post commercial flexible secondary packaging waste ([Press Release](#))
- **Modern Meadow**, a leading biofabrication company specializing in the development of sustainable materials, announced a strategic partnership with **Navis TubeTex**, a leading provider of high-technology finishing machinery to the global textile industry, aiming to redefine the dyeing, finishing, and coating equipment segment ([Press Release](#))

Advanced Materials and Chemicals Transaction Statistics (LTM)

Highest Multiples Paid



Largest Transaction Size by EV



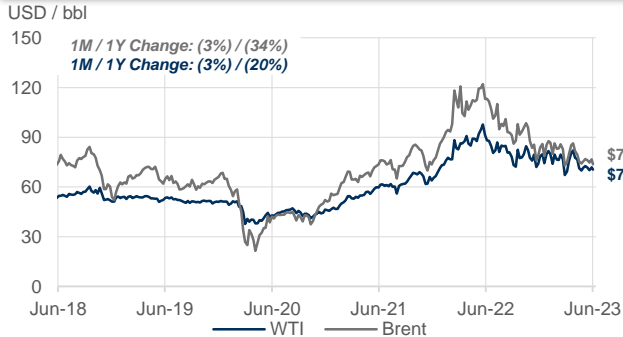
Source: Company filings, Mergermarket, Factset as of June 30th, 2023. All estimates reflect Factset consensus estimates.

1. Bunge acquisition of Viterria assumes RMI of \$9.0bn to be netted off from net debt.

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Markets Update

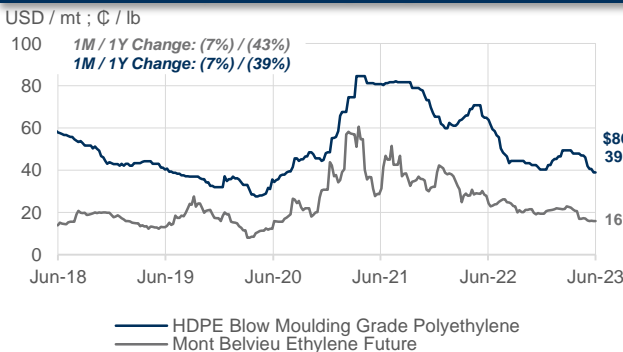
WTI / Brent



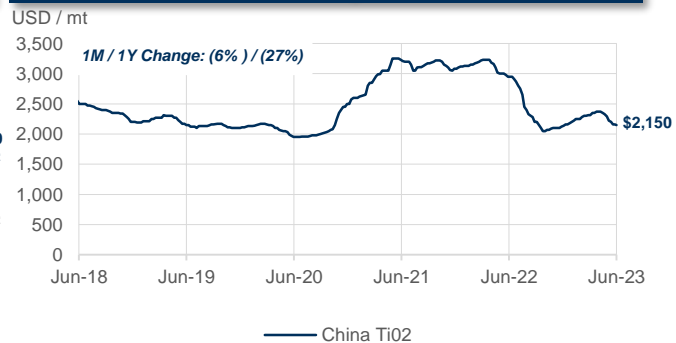
Natural Gas



Ethylene / Polyethylene



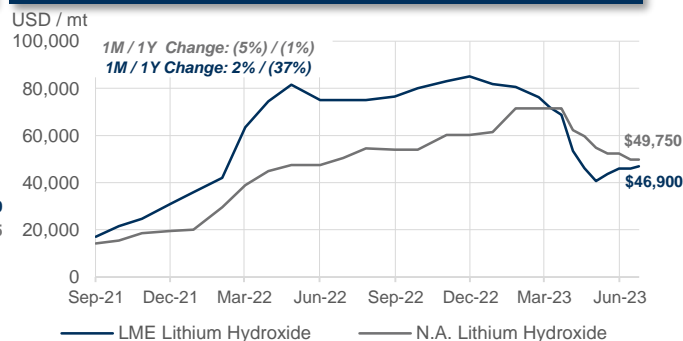
TiO₂



Nitrogen



Lithium



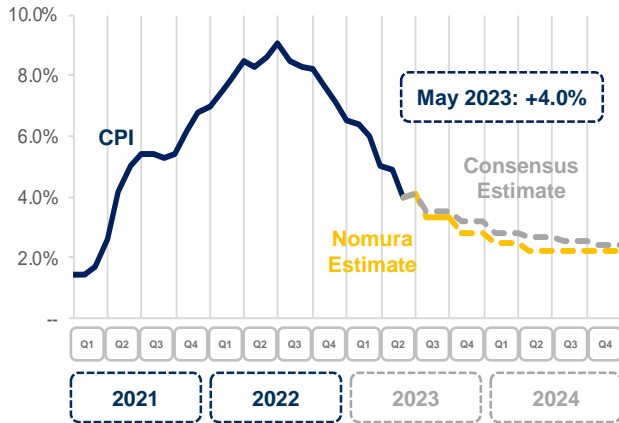
Corn



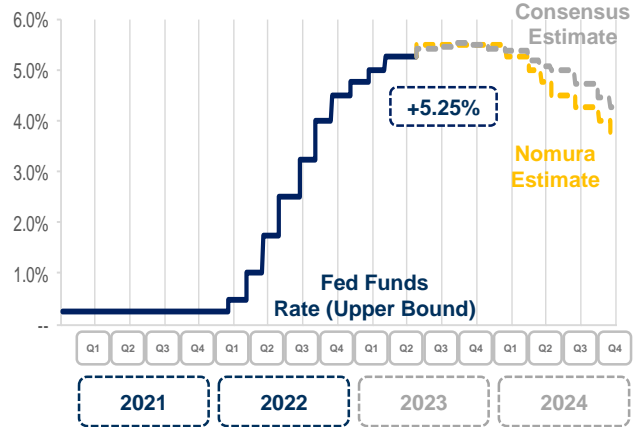
Soy



Inflation Should Continue to Moderate

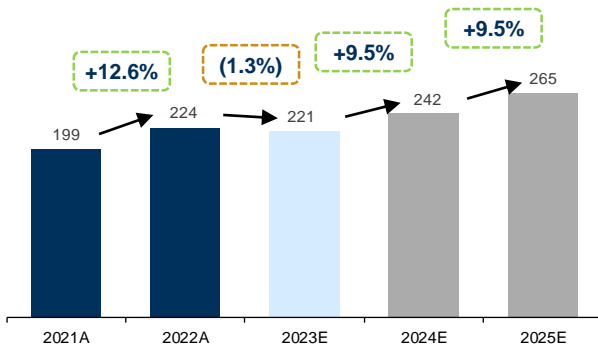


Fed Funds Expected to Peak in Q3'23



Guidance Now Points to '23 Earnings Contraction

S&P 500 Expected Earnings¹



In-Line with the Signal from the Yield Curve

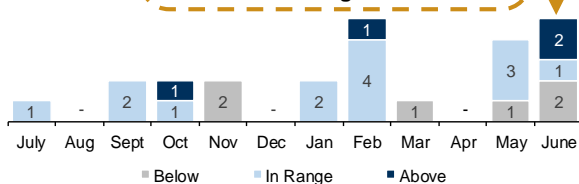


IPO Activity Picked Up In Q2'23

Total IPO Proceeds (\$bn)

0.1 -- 1.9 1.2 0.1 -- 0.3 1.6 0.3 -- 5.6 0.4

The IPO market was active in June 2023 with 4 IPOs priced in the same week. Cava and Savers Value Village's IPOs priced above the top end of the share marketing range

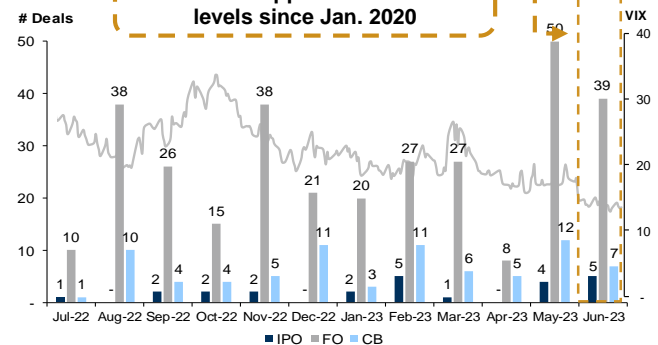


Market Activity Highly Correlated with the VIX

Deals

Equities issuance have rallied and VIX has dropped to its lowest levels since Jan. 2020

VIX



Leveraged Finance Market Updates

High Yield

- The U.S. high yield market has recently picked up momentum on the back of a broad rally in risk assets. High yield spreads have tightened to pre-regional bank crisis levels of about 400 basis points, following a four-week tightening streak
- Monthly issuance through June 23 stood at \$11.1 billion, bringing YTD issuance to \$92 billion, reflecting a 36% increase y-o-y
- U.S. high yield funds posted inflows of \$265 million in the week ended June 21 leaving the trailing-four-week average to \$302 million of inflow per week. YTD outflows of \$10.75 billion compared to last year's outflows of \$33 billion
- The HY Index Average YTM closed at 8.704% on June 20

Leveraged Loans

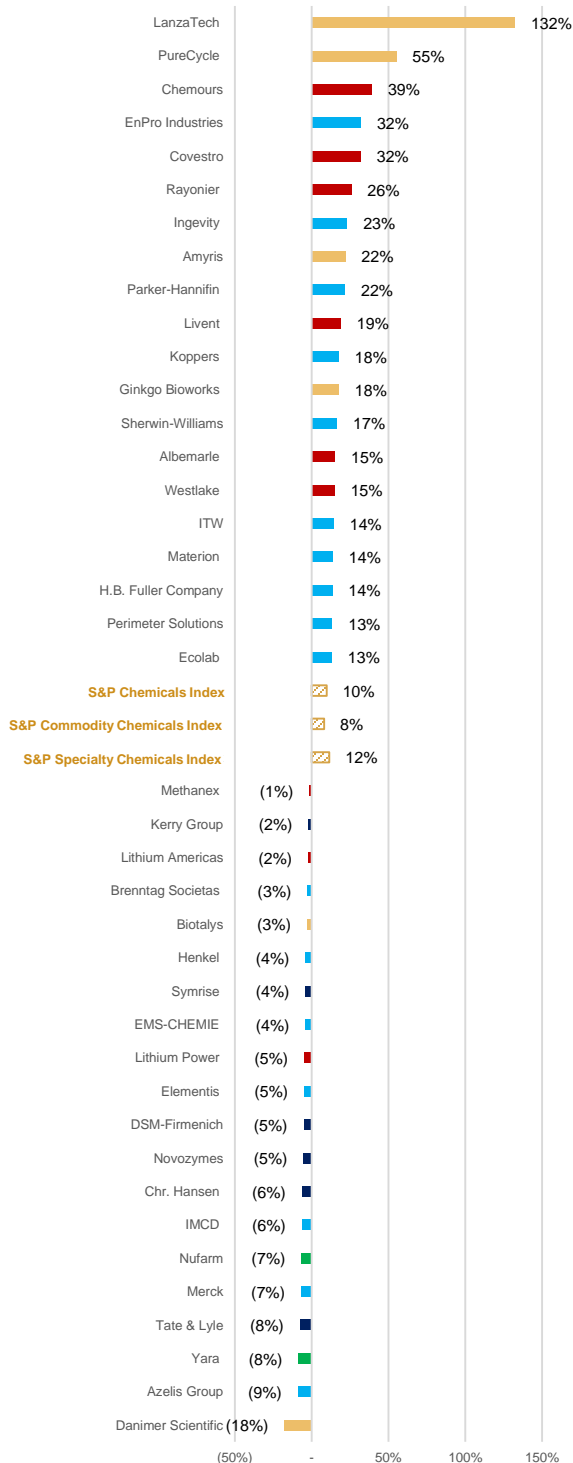
- Similarly in loans, new issue activity is light consisting mostly of opportunistic transactions, while a handful of M&A financings have filled the forward calendar in recent weeks
- Lifted again by a broader rally in risk assets, secondary levels have rebounded ~1.5 points since the start of June. The Leveraged Loan 100 Index is hovering around 94.5
- The average clearing yield for B rated issuers was 11.53% for the last 30 days as of June 15
- Although CLO issuance remains challenged, U.S. loan funds outflows moderated recently and the loan market also benefited from repayments via high-yield bond take-outs

ESG

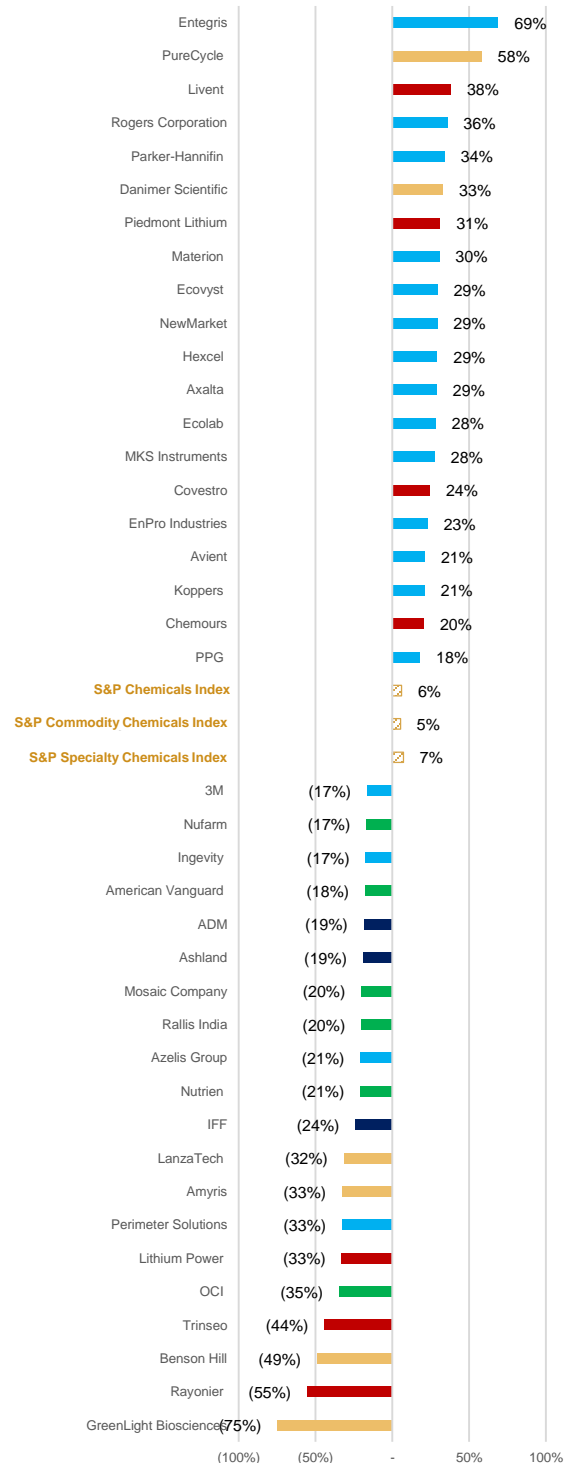
- Overall sustainability related activity has been sluggish in recent weeks driven by broader macroeconomic uncertainty and overall market backdrop
- A few notable recent transactions include:
 - ZF Friedrichshafen issued a \$1.2 billion dual-tranche senior green notes offering with proceeds used to finance eligible green projects. The offering consisted of \$600 million 5-year 6.875% notes and \$600 million 7-year 7.125% notes
 - O-I Glass issued a cross-border senior green notes offering, consisting of €600 million 5-year 6.250% notes and \$690 million 8-year 7.250% notes.
 - Covanta priced \$430 million of non-fungible incremental sustainability linked TLB and TLC facilities, priced at S+300 bps / 0.50% / 99.000 OID.
 - Covanta's sustainability-linked financing framework consists of 2 KPIs: amount of sustainably processed waste (measured in thousands of tons) and waste recycled / reused (measured in thousands of tons)

Advanced Materials and Chemicals Share Price Performance

1 Month (Top & Bottom 20 Performers)



Year-to-Date (Top & Bottom 20 Performers)

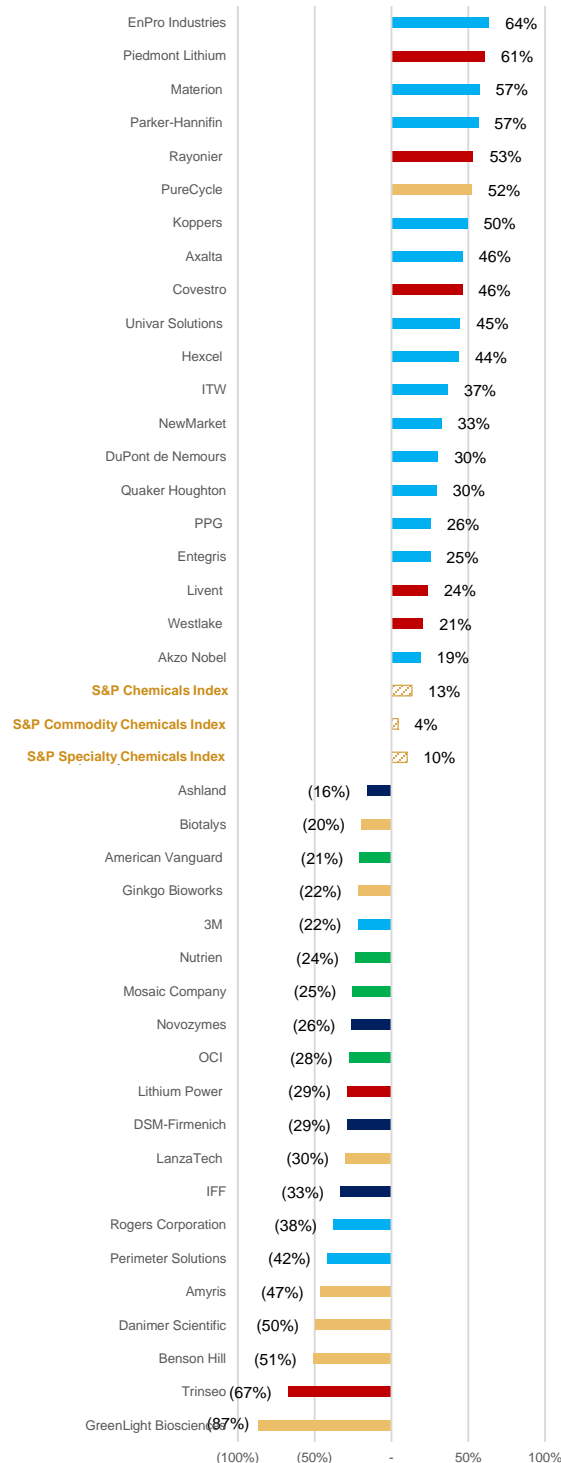


● Agriculture Chemicals ● Commodity & Diversified ● Chemicals Technology ● Ingredients ● Specialties ● Indices

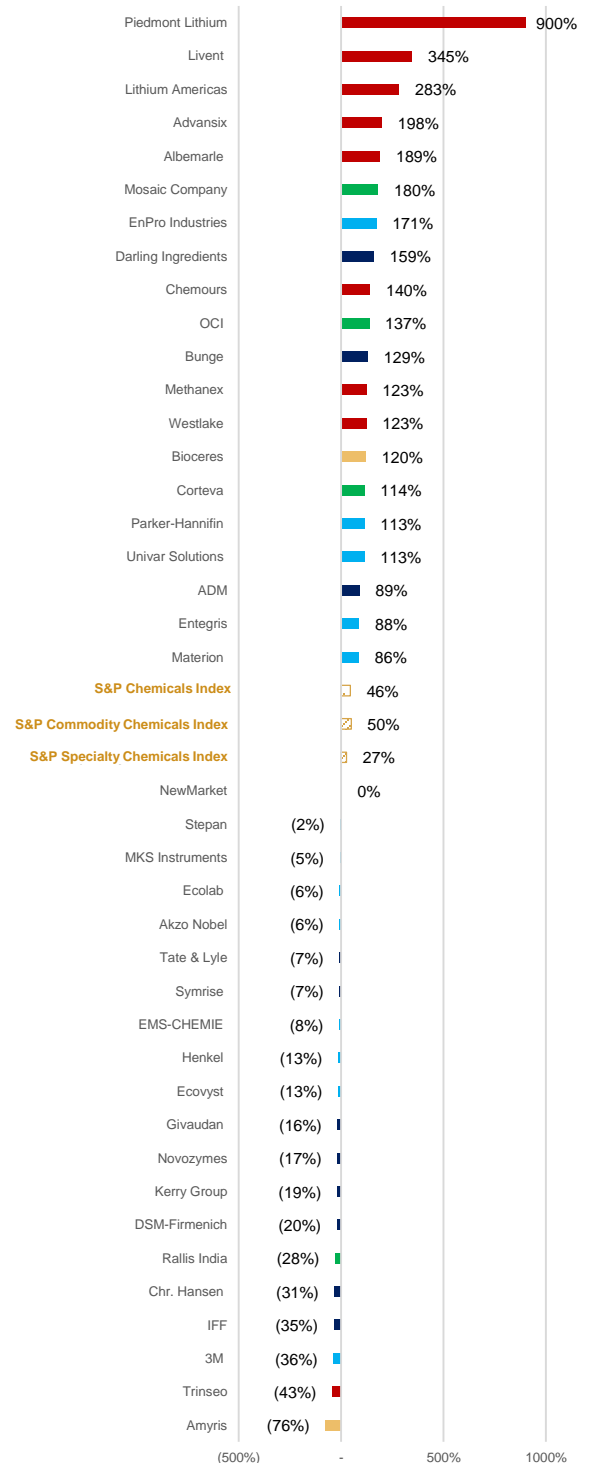
Source: Factset as of June 30th, 2023, third-party providers.

Advanced Materials and Chemicals Share Price Performance

1 Year (Top & Bottom 20 Performers)



3 Years (Top & Bottom 20 Performers)

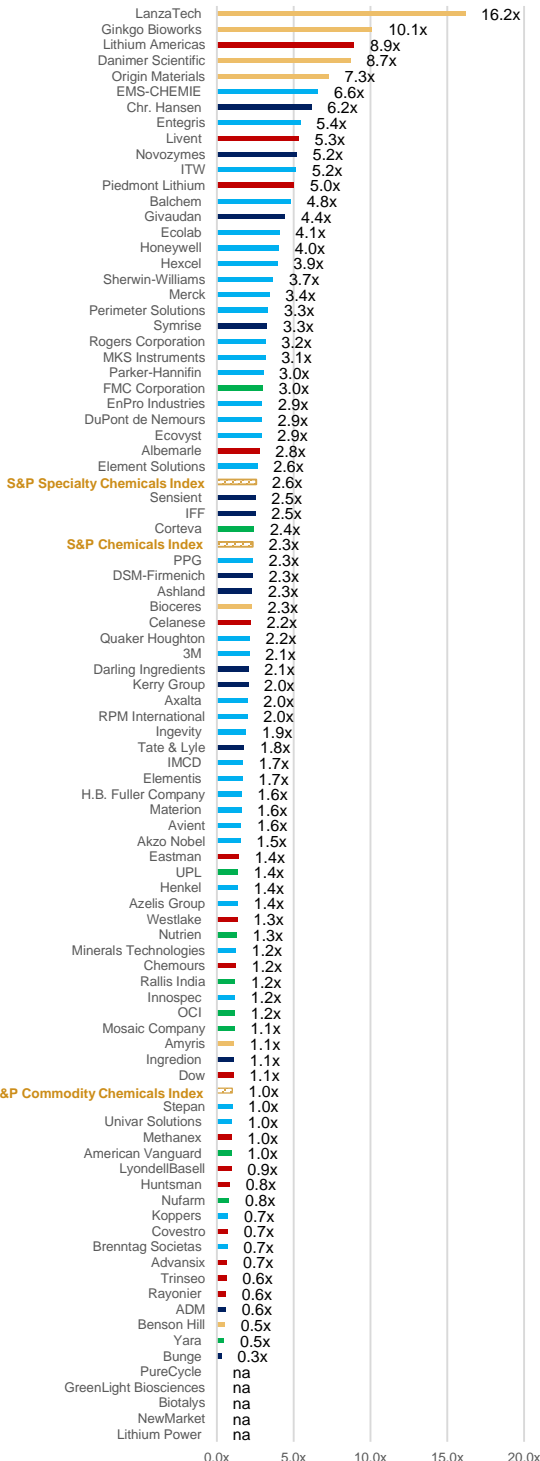


● Agriculture Chemicals ● Commodity & Diversified ● Chemicals Technology ● Ingredients ● Specialties ● Indices

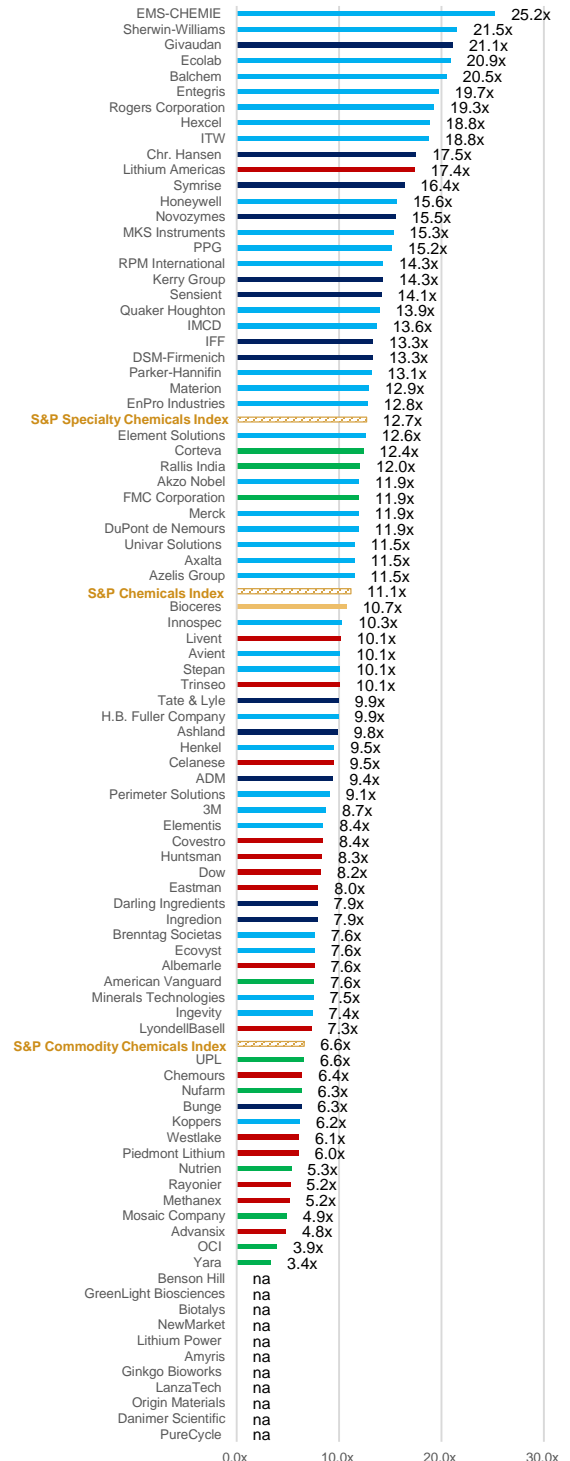
Source: Factset as of June 30th, 2023, third-party providers.

Advanced Materials and Chemicals Trading Multiples

EV / 2023E Sales



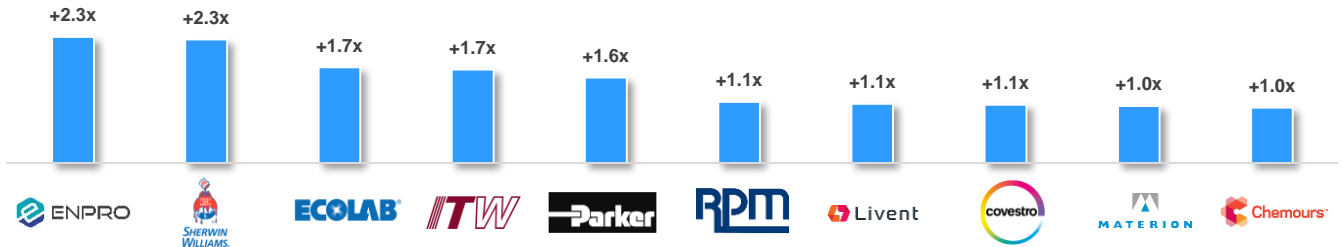
EV / 2023E EBITDA



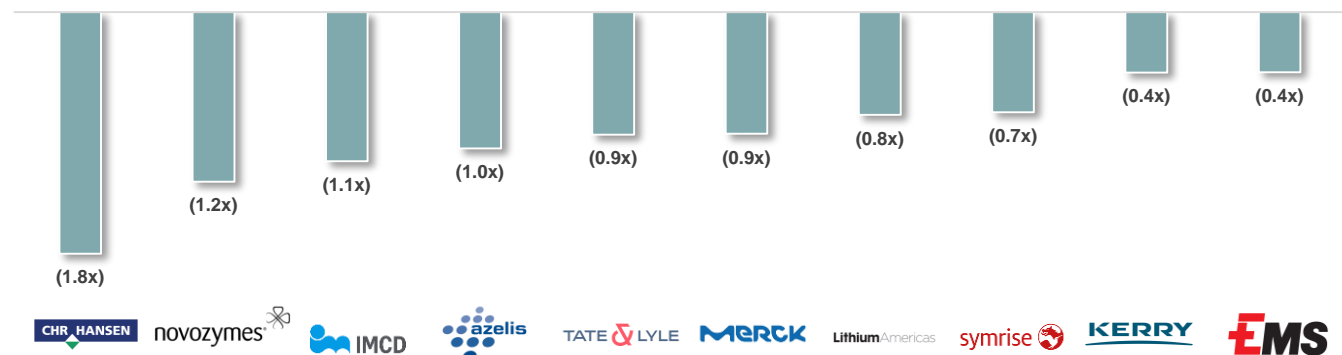
Advanced Materials and Chemicals Top & Bottom Performers (EV Multiple)

1 Month Change (EV / NTM Multiple)

Top 10 Performers

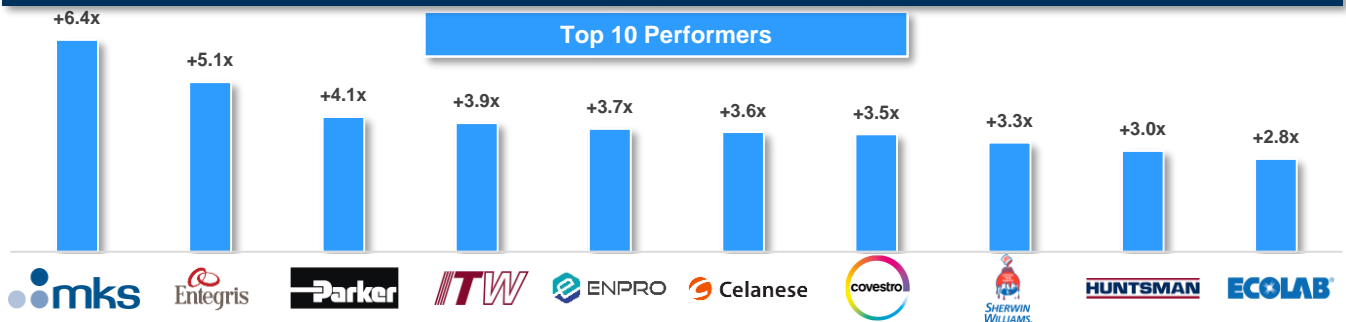


Bottom 10 Performers

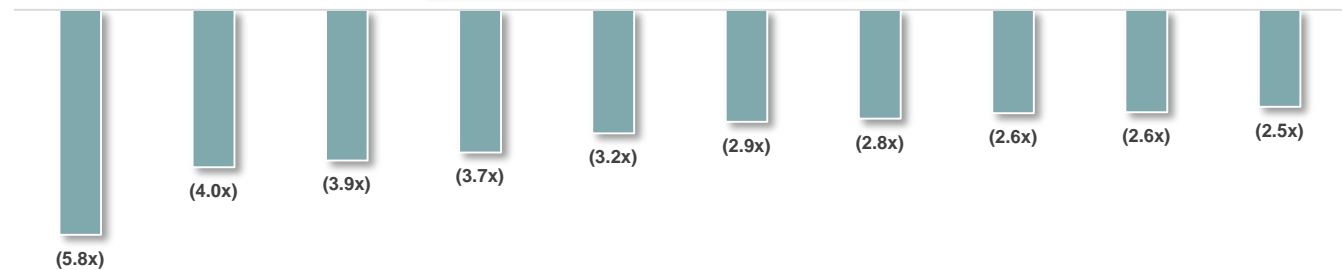


1 Year Change (EV / NTM Multiple)

Top 10 Performers



Bottom 10 Performers



Trading Comparables

Advanced Materials and Chemicals

Trading Comparables

Agriculture Chemicals

Company	Local						EBITDA			Sales		Equity	Enterprise	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage
	Local Currency	Price as of	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	Margin 2023E	CAGR 2022A-2024E	Value	Value				2023E	2023E	2024E	2023E	
AgChem Majors																			
Corteva	USD	57.30	84%	(3%)	1.1%	18,700	3,651	19.5%	5.8%	41,036	45,134	2.4x	12.4x	11.3x	19.5x	16.5x	0.7x		
FMC	USD	104.34	78%	(16%)	2.2%	6,132	1,531	25.0%	5.4%	13,110	18,267	3.0x	11.9x	11.1x	13.5x	12.0x	3.4x		
Tier 1 Mean			81%	(9%)	1.7%			22.2%	5.6%			2.7x	12.1x	11.2x	16.5x	14.2x	2.1x		
Tier 1 Median			81%	(9%)	1.7%			22.2%	5.6%			2.7x	12.1x	11.2x	16.5x	14.2x	2.1x		
AgChem Diversified																			
American Vanguard	USD	17.87	73%	(18%)	n.a.	640	80	12.6%	7.3%	532	609	1.0x	7.6x	6.8x	n.m.	n.m.	1.0x		
Nufarm	AUD	5.09	79%	(17%)	2.2%	2,458	309	12.6%	0.3%	1,298	1,953	0.8x	6.3x	6.0x	13.2x	12.3x	2.0x		
Rallis India	INR	196.85	73%	(19%)	1.8%	384	38	9.8%	10.4%	467	454	1.2x	12.0x	9.5x	24.9x	18.2x	(0.4)x		
UPL	INR	687.25	85%	(4%)	1.9%	6,914	1,444	20.9%	8.3%	6,288	9,467	1.4x	6.6x	6.0x	11.8x	9.8x	2.2x		
Tier 2 Mean			78%	(14%)	2.0%			14.0%	6.6%			1.1x	8.1x	7.1x	16.6x	13.4x	1.2x		
Tier 2 Median			76%	(17%)	1.9%			12.6%	7.8%			1.1x	7.1x	6.4x	13.2x	12.3x	1.5x		

Agriculture Technology

Company	Local Currency	Local		Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA		Price/Earnings		Net Leverage 2023E	
		Price as of	% of			Sales	EBITDA	Margin	CAGR	2023E				2024E	2023E	2024E	2023E		2024E
		30-Jun-23	\$2 week high			2023E	2023E	2023E	2022E-2024E										
Ag Tech																			
Benson Hill	USD	1.30	32%	(49%)	n.a.	428	(57)	(13.2%)	3.3%	284	219	0.5x	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	
BPCores	USD	13.36	86%	11%	n.a.	471	100	21.2%	23.7%	838	1,071	2.3x	10.7x	10.0x	n.m.	n.m.	2.3x		
Biotarys	EUR	5.84	79%	(14%)	n.a.	3	(21)	n.m.	n.m.	216	180	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.		
Cibu	USD	10.50	27%	42%	n.a.	4	(17)	n.m.	n.m.	188	191	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.		
GreenLight Biosciences	USD	0.30	5%	(75%)	n.a.	7	(128)	n.m.	66.1%	45	(23)	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.		
Mean			46%	(17%)	NA			4.0%	31.1%			1.4x	10.7x	10.0x	NA	NA	2.3x		
Median			32%	(14%)	NA			4.0%	23.7%			1.4x	10.7x	10.0x	NA	NA	2.3x		

Coatings, Adhesives, Sealants and Elastomers (CASE)

Company	Local				EBITDA			Sales			Equity	Enterprise	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage
	Local Currency	Price as of 30-Jun-2023	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	Margin 2023E	CAGR 2022A-2024E	Value 2023E				Value 2024E	2023E	2023E	2024E	
CASE																		
Akzo Nobel	EUR	74.72	96%	19%	2.7%	11,996	1,550	12.9%	2.4%	13,543	18,497	1.5x	11.9x	10.2x	19.1x	15.0x	3.6x	
Axalta	USD	32.81	99%	29%	n.a.	5,281	920	17.4%	6.1%	7,355	10,582	2.0x	11.5x	10.6x	21.3x	17.7x	3.3x	
Chase Corporation	USD	121.22	92%	41%	n.a.	n.a.	n.a.	n.m.	n.m.	1,152	991	n.m.	n.m.	n.m.	n.a.	n.a.	n.a.	
H.B. Fuller	USD	71.51	88%	(0%)	1.1%	3,674	589	16.0%	2.7%	4,039	5,845	1.6x	9.9x	8.9x	18.5x	15.5x	3.1x	
Henkel	EUR	64.50	92%	7%	2.9%	23,680	3,377	14.3%	(0.9%)	30,560	32,151	1.4x	9.5x	9.0x	16.3x	15.0x	0.4x	
PPG	USD	148.30	100%	18%	1.7%	18,107	2,789	15.4%	3.3%	35,126	42,255	2.3x	15.2x	13.8x	20.6x	18.3x	2.4x	
Quaker Houghton	USD	194.90	90%	17%	0.5%	2,010	310	15.4%	3.5%	3,539	4,321	2.2x	13.9x	12.9x	19.8x	16.2x	2.5x	
RPM	USD	89.73	84%	(8%)	2.0%	7,295	1,016	13.9%	3.5%	11,884	14,509	2.0x	14.3x	12.9x	21.0x	18.3x	2.6x	
Sherwin-Williams	USD	265.52	100%	12%	0.9%	22,023	3,736	17.0%	1.6%	69,478	80,425	3.7x	21.5x	19.8x	30.8x	27.7x	2.9x	
Mean			93%	15%	1.7%			15.3%	2.8%			2.1x	13.5x	12.3x	20.9x	18.0x	2.6x	
Median			92%	17%	1.7%			15.4%	3.0%			2.0x	12.9x	11.7x	20.2x	17.0x	2.8x	

Chemical Distribution

Company	Local				EBITDA			Sales			EV/Sales		EV/EBITDA		Price/Earnings		Net Leverage
	Local Currency	Price as of 30-Jun-23	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	Margin 2023E	CAGR 2022A-2024E	Equity Value	Enterprise Value	2023E	2024E	2023E	2024E	2023E	
Chemical Distribution																	
Azelis	EUR	20.88	77%	(21%)	1.7%	4,947	584	11.8%	8.3%	5,557	6,710	1.4x	11.5x	10.6x	16.9x	15.7x	2.0x
Brenntag	EUR	71.40	92%	20%	2.9%	20,117	1,806	9.0%	(1.1%)	12,035	13,792	0.7x	7.6x	7.2x	13.2x	12.3x	0.9x
IMCD	EUR	131.70	84%	(1%)	1.8%	5,310	656	12.4%	5.3%	8,195	8,952	1.7x	13.6x	13.0x	20.4x	19.8x	1.1x
Univar	USD	35.84	100%	13%	1.0%	11,005	920	8.4%	(1.0%)	5,776	10,605	1.0x	11.5x	10.9x	12.6x	11.7x	5.2x
Mean			88%	2%	1.8%			10.4%	2.9%			1.2x	11.1x	10.5x	15.8x	14.9x	2.3x
Median			88%	6%	1.7%			10.4%	2.1%			1.2x	11.5x	10.8x	15.1x	14.0x	1.5x

Chemical Technology

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA		Price/Earnings		Net Leverage 2023E
		Price as of 30-Jun-2023					Sales 2023E	EBITDA 2023E	Margin 2023E	CAGR 2022A-2024E	2023E				2024E	2023E	2024E		
ChemTech																			
Danimer Scientific	USD	2.38	41%	33%	n.a.	70	(31)	n.m.	70.3%	248	608	8.7x	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	
Origin Materials	USD	4.26	57%	(8%)	n.a.	47	(59)	n.m.	n.m.	664	340	7.3x	n.m.	n.m.	n.m.	n.m.	n.m.	8.3x	
PureCycle	USD	10.69	98%	58%	n.a.	46	(56)	n.m.	n.m.	1,808	1,827	39.3x	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	
Mean			65%	28%	NA			NA	70.3%			18.4x	NA	NA	NA	NA	NA	8.3x	
Median			57%	33%	NA			NA	70.3%			8.7x	NA	NA	NA	NA	NA	8.3x	

Commodity

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA		Sales		Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA		Price/Earnings		Net Leverage 2023E
		Price as of 30-Jun-2023					2023E	2023E	Margin 2023E	CAGR 2022E-2024E				2023E	2024E	2023E	2024E	
Commodity																		
AdvanSix	USD	34.98	78%	(8%)	0.8%	1,650	229	13.9%	(6.3%)	998	1,097	0.7x	4.8x	4.1x	8.5x	9.1x	0.4x	
Dow	USD	53.26	87%	6%	5.3%	48,158	6,263	13.0%	(5.8%)	38,229	51,571	1.1x	8.2x	6.7x	18.7x	11.7x	1.9x	
LyondellBasell	USD	91.83	91%	11%	5.2%	42,940	5,563	13.0%	(13.1%)	30,030	40,735	0.9x	7.3x	6.7x	10.1x	8.7x	1.8x	
Methanex	CAD	54.74	73%	7%	1.8%	3,792	704	18.6%	(6.4%)	2,870	3,639	1.0x	5.2x	4.1x	14.6x	11.8x	1.1x	
Westlake	USD	119.47	95%	17%	1.2%	13,836	3,038	22.0%	(5.1%)	15,426	18,447	1.3x	6.1x	5.8x	11.3x	10.6x	0.9x	
Mean			85%	6%	2.9%			16.1%	(7.3%)			1.0x	6.3x	5.5x	12.6x	10.4x	1.2x	
Median			87%	7%	1.8%			13.9%	(6.3%)			1.0x	6.1x	5.8x	11.3x	10.6x	1.1x	

Advanced Materials and Chemicals

Trading Comparables

Diversified

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage
		Price as of					Sales	EBITDA	Margin	CAGR	2022A-2024E				2023E	2024E	2023E	2024E	
		30-Jun-2023					2023E	2023E	2023E	2022A-2024E	2023E				2023E	2024E	2023E	2024E	
Diversified																			
Celanese	USD	115.80	90%	13%	2.4%	11,811	2,753	23.3%	13.4%	12,635	26,044	2.2x	9.5x	8.5x	10.5x	8.3x	4.8x		
Chemours	USD	36.89	96%	20%	2.7%	6,496	1,244	19.1%	1.5%	5,502	7,975	1.2x	6.4x	5.4x	9.0x	6.7x	2.0x		
Covestro	EUR	47.58	95%	30%	0.7%	17,785	1,483	8.3%	(2.8%)	10,029	12,487	0.7x	8.4x	6.9x	n.m.	16.5x	1.4x		
Eastman	USD	83.72	82%	3%	3.8%	10,239	1,820	17.8%	0.7%	10,056	14,521	1.4x	8.0x	7.2x	10.7x	9.5x	2.4x		
Huntsman	USD	27.02	81%	(2%)	3.5%	6,927	695	10.0%	(4.1%)	4,896	5,773	0.8x	8.3x	6.2x	18.9x	11.2x	1.3x		
Koppers	USD	34.10	88%	21%	n.a.	2,104	249	11.8%	4.0%	710	1,495	0.7x	6.0x	5.5x	7.6x	7.1x	3.0x		
Raychem Advanced Materials	USD	4.28	43%	(55%)	n.a.	1,812	201	11.1%	1.7%	279	1,053	0.6x	5.2x	4.8x	n.m.	n.m.	3.4x		
Tiniso	USD	12.67	22%	(44%)	6.0%	4,486	275	6.1%	(2.7%)	463	2,775	0.6x	10.1x	6.9x	n.m.	13.2x	7.8x		
Mean			76%	(2%)	3.2%			13.5%	1.5%				1.0x	7.7x	6.4x	11.4x	10.4x	3.3x	
Median			85%	8%	3.1%			11.5%	1.1%				0.8x	8.1x	6.6x	10.5x	9.5x	2.7x	

Electronic Chemicals & Materials

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage	
		Price as of					Sales	EBITDA	Margin	CAGR	2023E				2024E	2023E	2024E	2023E		2024E
		30-Jun-2023	\$2				2023E	2023E	2023E	2022A-2024E	2023E				2024E	2023E	2024E			
Electronic Chemicals																				
Element Solutions	USD	19.20	88%	6%	1.7%	2,446	513	21.0%	0.4%	4,635	6,462	2.6x	12.6x	11.6x	13.9x	12.3x	3.5x			
EnviPro	USD	133.53	99%	23%	n.a.	1,102	254	23.0%	2.7%	2,788	3,242	2.9x	12.8x	11.7x	19.9x	18.0x	1.8x			
Entegris	USD	110.82	97%	69%	0.4%	3,610	998	27.0%	10.5%	16,781	19,662	5.4x	19.7x	17.2x	44.7x	29.8x	2.9x			
MKS Instruments	USD	108.10	87%	28%	0.8%	3,641	750	20.6%	6.3%	7,308	11,469	3.1x	15.3x	12.3x	33.3x	19.5x	5.4x			
Materion	USD	114.20	94%	30%	n.a.	1,796	221	12.3%	4.3%	2,420	2,847	1.6x	12.9x	11.5x	21.8x	19.2x	1.9x			
Rogers Corporation	USD	161.93	60%	36%	n.a.	974	160	16.4%	3.5%	3,078	3,076	3.2x	19.3x	15.2x	65.2x	32.1x	(0.0x)			
Merck	EUR	151.55	75%	(16%)	1.5%	24,216	6,961	28.7%	2.8%	72,185	82,916	3.4x	11.9x	11.0x	15.9x	14.7x	1.3x			
Mean			86%	25%	1.1%			21.4%	4.4%			3.2x	14.9x	12.9x	30.7x	20.8x	2.4x			
Median			88%	28%	1.1%			21.0%	3.5%			3.1x	12.9x	11.7x	21.8x	19.2x	1.9x			

Fertilizers

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA		Price/Earnings		Net Leverage 2023E
		Price as of 30-Jun-2023					Sales 2023E	EBITDA 2023E	Margin 2023E	CAGR 2022A-2024E	2023E				2024E	2023E	2024E		
Fertilizers																			
CF Industries	USD	69.42	58%	(19%)	2.3%	6,928	3,130	45.2%	(24.7%)	13,604	14,319	2.1x	4.6x	5.3x	8.3x	10.2x	0.2x		
Mosaic	USD	35.00	55%	(20%)	3.0%	13,661	3,181	23.3%	(18.6%)	11,624	15,536	1.1x	4.9x	5.2x	7.1x	8.1x	1.2x		
Nutrien	CAD	78.21	59%	(21%)	3.6%	29,817	7,245	24.3%	(11.8%)	29,388	38,616	1.3x	5.3x	5.8x	9.0x	9.9x	1.2x		
OCI	EUR	21.97	61%	(26%)	8.3%	5,414	1,601	29.6%	(20.6%)	5,077	6,302	1.2x	3.9x	3.3x	15.9x	8.8x	0.8x		
Yara	NOK	379.00	76%	(12%)	8.5%	17,844	2,516	14.1%	(9.4%)	9,011	8,438	0.5x	3.4x	3.2x	9.3x	8.6x	(0.2x)		
Mean			62%	(19%)	5.1%			27.3%	(17.0%)			1.2x	4.4x	4.6x	9.9x	9.1x	0.6x		
Median			59%	(20%)	3.6%			24.3%	(18.6%)			1.2x	4.6x	5.2x	9.0x	8.8x	0.8x		

Ingredients

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage	
		Price as of					Sales	EBITDA	Margin	CAGR	2023E				2024E	2023E	2024E	2023E		2024E
		30-Jun-2023					2023E	2023E	2023E	2022E-2024E	2023E				2024E	2023E	2024E	2023E		2024E
Diversified Ingredients																				
Archer-Daniels-Midland Company	USD	75.56	77%	(19%)	2.4%	99,603	6,090	6.1%	(0.3%)	47,412	57,328	0.6x	9.4x	10.3x	12.5x	13.9x	1.6x			
Bunge Limited	USD	94.35	88%	(5%)	2.7%	64,245	3,008	4.7%	(3.1%)	14,455	18,957	0.3x	6.3x	6.6x	8.1x	8.4x	1.5x			
Darling Ingredients Inc	USD	63.79	77%	2%	n.a.	7,267	1,892	26.0%	7.1%	10,374	14,959	2.1x	7.9x	7.4x	11.4x	10.2x	2.4x			
Ingredion Incorporated	USD	105.95	93%	8%	2.7%	8,646	1,208	14.0%	6.9%	7,154	9,548	1.1x	7.9x	7.4x	11.7x	10.8x	2.0x			
Tate & Lyle PLC	GBP	7.26	87%	2%	2.8%	2,274	407	17.9%	6.5%	3,680	4,043	1.8x	9.9x	9.5x	12.9x	12.0x	0.6x			
Mean			84%	(2%)	2.7%			13.7%	3.4%			1.2x	8.3x	8.2x	11.3x	11.1x	1.6x			
Median			87%	2%	2.7%			14.0%	6.5%			1.1x	7.9x	7.4x	11.7x	10.8x	1.6x			
Specialty Ingredients																				
Ashland Inc.	USD	86.91	76%	(19%)	1.7%	2,327	543	23.3%	3.6%	4,660	5,340	2.3x	9.8x	8.6x	13.8x	12.9x	1.2x			
Korinjiike DSM N.V.	EUR	114.05	73%	(0%)	2.2%	8,678	1,356	15.6%	3.4%	19,694	20,220	2.3x	14.9x	13.3x	37.4x	27.3x	0.4x			
International Flavors & Fragrances Inc.	USD	70.59	62%	(24%)	4.1%	12,280	2,315	18.8%	1.2%	20,381	30,801	2.5x	13.3x	11.9x	17.1x	14.0x	4.5x			
Givaudan SA	CHF	2,965.00	84%	5%	2.3%	7,994	1,884	21.1%	2.7%	30,673	35,509	4.4x	21.1x	19.2x	28.7x	25.7x	2.8x			
Kerry Group Plc Class A	EUR	89.38	83%	6%	1.3%	9,273	1,329	14.3%	(0.3%)	17,413	18,958	2.0x	14.3x	13.1x	20.4x	18.2x	1.2x			
Sensient Technologies Corporation	USD	71.13	80%	(2%)	2.4%	1,515	271	17.9%	5.4%	3,026	3,822	2.5x	14.1x	13.4x	21.3x	18.5x	2.9x			
Symrise AG	EUR	96.02	83%	(6%)	1.1%	5,344	1,071	20.0%	6.1%	14,642	17,535	3.3x	16.4x	14.6x	28.9x	25.7x	2.2x			
Mean			77%	(6%)	2.2%			18.7%	3.2%			2.8x	14.8x	13.5x	23.9x	20.3x	2.2x			
Median			80%	(2%)	2.2%			18.8%	3.4%			2.5x	14.3x	13.3x	21.3x	18.5x	2.2x			
Bio-Ingredients																				
Chr. Hansen Holding A/S	DKK	473.60	78%	(5%)	1.7%	1,497	526	35.1%	7.9%	9,167	9,214	6.2x	17.5x	16.1x	32.4x	28.7x	0.1x			
Novozymes A/S Class B	DKK	317.90	68%	(10%)	1.9%	2,667	894	33.5%	4.3%	12,868	13,856	5.2x	15.5x	14.2x	26.1x	23.9x	1.1x			
Mean			73%	(7%)	1.8%			34.3%	6.1%			5.7x	16.5x	15.1x	29.2x	26.3x	0.6x			
Median			73%	(7%)	1.8%			34.3%	6.1%			5.7x	16.5x	15.1x	29.2x	26.3x	0.6x			

Lithium

Company	Local Currency	Local		% of 52 week high	Price Return YTD	Dividend Yield	EBITDA			Sales		Equity Value	Enterprise Value	EV/Sales	EV/EBITDA		Price/Earnings		Net Leverage
		Price as of 30-Jun-2023					2023E	2023E	2023E	2022A-2024E	2023E				2024E	2023E	2024E		
Lithium																			
Albemarle	USD	223.09	67%	3%	0.7%	10,157	3,700	36.4%	18.5%	26,336	28,159	2.8x	7.6x	8.0x	10.1x	11.3x	0.4x		
Lithium Americas	CAD	26.81	63%	4%	n.a.	349	180	51.4%	n.m.	3,306	3,116	8.9x	17.4x	13.0x	n.m.	28.9x	(1.1x)		
Livent	USD	27.43	75%	38%	n.a.	1,090	573	52.5%	30.0%	5,748	5,805	5.3x	10.1x	8.5x	13.6x	11.6x	0.1x		
Lithium Power	AUD	0.30	39%	(33%)	n.a.	n.a.	n.a.	n.m.	n.m.	124	119	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.		
Piedmont Lithium	USD	57.71	75%	31%	n.a.	203	168	83.2%	n.m.	1,117	1,018	5.0x	6.0x	3.3x	10.7x	2.7x	(0.6x)		
Mean			64%	9%	0.7%			55.9%	24.3%			5.5x	10.3x	8.2x	11.5x	13.6x	(0.3x)		
Median			67%	4%	0.7%			52.0%	24.3%			5.2x	8.9x	8.2x	10.7x	11.5x	(0.2x)		

Advanced Materials and Chemicals

Trading Comparables

Multi-Industrial

Company	Local Currency	Local Price as of 30-Jun-2023	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	EBITDA Margin 2023E	Sales CAGR 2022A-2024E	Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA 2023E	2024E	Price/Earnings 2023E	2024E	Net Leverage 2023E
Multi-Industrial																	
3M	USD	100.09	66%	(17%)	6.1%	31,818	7,711	24.2%	(1.9%)	55,518	67,103	2.1x	8.7x	8.0x	11.8x	10.5x	1.5x
DuPont de Nemours, Inc.	USD	71.44	91%	4%	2.0%	12,451	3,049	24.5%	0.5%	32,954	36,313	2.9x	11.9x	10.8x	19.9x	17.6x	1.1x
Honeywell	USD	207.50	94%	(3%)	2.0%	36,983	9,523	25.8%	4.8%	139,538	148,845	4.0x	15.6x	14.5x	22.8x	21.0x	1.5x
ITW	USD	250.16	99%	14%	2.1%	16,428	4,512	27.5%	3.2%	76,467	84,633	5.2x	18.8x	17.8x	26.1x	24.9x	1.8x
Merck	EUR	151.55	75%	(16%)	1.5%	24,216	6,961	28.7%	2.8%	72,185	82,916	3.4x	11.9x	11.0x	15.9x	14.7x	1.3x
Parker-Hannifin	USD	390.04	99%	34%	1.5%	19,390	4,454	23.0%	8.3%	51,207	58,541	3.0x	13.1x	12.4x	18.4x	17.0x	1.5x
Mean			87%	3%	2.5%			25.6%	3.0%			3.4x	13.3x	12.4x	19.1x	17.6x	1.4x
Median			93%	0%	2.0%			25.1%	3.0%			3.2x	12.5x	11.7x	19.2x	17.3x	1.5x

Specialty

Company	Local Currency	Local Price as of 30-Jun-2023	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	EBITDA Margin 2023E	Sales CAGR 2022A-2024E	Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA 2023E	2024E	Price/Earnings 2023E	2024E	Net Leverage 2023E
Specialty																	
Avient	USD	40.90	82%	21%	2.3%	3,400	530	15.6%	3.7%	3,753	5,356	1.6x	10.1x	9.0x	22.8x	17.7x	3.0x
Balchem	USD	134.81	94%	10%	n.a.	990	232	23.4%	5.4%	4,389	4,755	4.8x	20.5x	19.6x	32.5x	29.4x	1.6x
Ecobal	USD	186.69	99%	28%	1.1%	15,307	2,991	19.5%	6.7%	53,565	62,475	4.1x	20.9x	18.9x	37.9x	32.7x	2.8x
Ecovyst	USD	11.46	98%	29%	n.a.	760	288	38.0%	(1.2%)	1,423	2,202	2.9x	7.6x	7.1x	12.1x	11.1x	2.7x
Elementis	GBP	1.02	78%	(15%)	2.5%	739	146	19.8%	0.4%	784	1,234	1.7x	8.4x	7.8x	12.6x	10.7x	3.3x
EMS-CHEMIE	CHF	677.00	84%	8%	3.0%	2,648	691	26.1%	1.4%	17,699	17,436	6.6x	25.2x	23.7x	31.1x	29.4x	(0.3x)
Hexcel	USD	76.02	99%	29%	0.7%	1,814	380	20.9%	13.6%	6,526	7,152	3.9x	18.8x	16.2x	39.8x	30.5x	1.6x
Innospec	USD	100.44	87%	(2%)	1.4%	2,024	231	11.4%	4.2%	2,567	2,384	1.2x	10.3x	8.7x	17.3x	14.5x	(0.6x)
Koppers	USD	34.10	89%	21%	n.a.	2,104	249	11.8%	4.0%	753	1,538	0.7x	6.2x	5.7x	8.1x	7.5x	3.0x
Minerals Technologies	USD	57.69	78%	(5%)	0.3%	2,240	369	16.5%	4.2%	1,888	2,764	1.2x	7.5x	6.9x	12.1x	10.0x	2.2x
NewMarket	USD	402.12	98%	29%	n.a.	n.a.	n.a.	n.a.	n.a.	3,885	4,527	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Ingevity	USD	58.16	64%	(17%)	n.a.	1,835	469	25.6%	7.8%	2,142	3,482	1.9x	7.4x	6.8x	10.5x	8.8x	2.8x
Perimeter Solutions	USD	6.15	50%	(33%)	n.a.	454	167	36.8%	20.1%	966	1,514	3.3x	9.1x	7.7x	27.4x	19.9x	3.3x
Stepan	USD	95.56	82%	(10%)	1.5%	2,675	266	9.9%	(0.8%)	2,151	2,681	1.0x	10.1x	8.2x	19.4x	14.3x	2.0x
Mean			84%	7%	1.6%			21.2%	5.4%			2.7x	12.5x	11.3x	21.8x	18.2x	2.1x
Median			85%	9%	1.5%			19.8%	4.2%			1.9x	10.1x	8.2x	19.4x	14.5x	2.7x

Synthetic Biology

Company	Local Currency	Local Price as of 30-Jun-2023	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2023E	EBITDA 2023E	EBITDA Margin 2023E	Sales CAGR 2022E-2024E	Equity Value	Enterprise Value	EV/Sales 2023E	EV/EBITDA 2023E	2024E	Price/Earnings 2023E	2024E	Net Leverage 2023E
SynBio																	
Ginkgo Bioworks	USD	1.86	38%	10%	n.a.	290	(271)	n.m.	(12.9%)	4,257	2,933	10.1x	n.m.	n.m.	n.m.	n.m.	n.m.
Amyris	USD	1.03	21%	(33%)	n.a.	529	(156)	n.m.	34.6%	397	588	1.1x	n.m.	n.m.	n.m.	n.m.	n.m.
LanzaTech	USD	6.83	63%	(32%)	n.a.	88	(74)	n.m.	116.6%	1,427	1,427	16.2x	n.m.	n.m.	n.m.	n.m.	n.m.
Mean			41%	(18%)	NA			NA	46.1%			9.1x	NA	NA	NA	NA	NA
Median			38%	(32%)	NA			NA	34.6%			10.1x	NA	NA	NA	NA	NA

Global Experts in Sustainable Technology and Infrastructure

NOMURA
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Nomura Greentech Offices



Nomura Greentech Transactions

Mergers & Acquisitions

- Corporate sales
- Acquisitions
- Minority investments
- Joint ventures
- Fairness opinions

\$144+bn

Asset Transactions

- Acquisitions
- Divestitures
- Passive equity
- Development capital formation

**Operating
28GW**

**Development
196GW**

Capital Raising

- Equity private placements
- Debt private placements
- Project finance advisory
- Bookrun public equity offering

\$58+bn

Strategic Advisory

- Strategic consulting
- IPO preparation
- Financial restructuring
- Specialized opinions
- Independent capital markets advice

>35 assignments

Highly Experienced Senior Leadership Supported by a Global Team of Professionals

Jeff McDermott

Global Co-Head of Investment Banking,
Founder of Nomura Greentech
New York
jeff.mcdermott@nomuragreentech.com



Derek Bentley

Managing Director
New York

derek.bentley@nomuragreentech.com



Anoop Chaudhry

Head of Nomura Greentech,
AeJ
Hong Kong
anoop.chaudhry@nomuragreentech.com



Laurent Dallet

Managing Director
Paris

laurent.dallet@nomuragreentech.com



Pearse Davidson

Managing Director
New York

pearse.davidson@nomuragreentech.com



PJ Deschenes

Global Co-Head of Nomura
Greentech
New York
pj.deschenes@nomuragreentech.com



Andrew Horn

Co-Head of Investment Banking,
Americas
New York
andrew.horn@nomura.com



Richard Hawwa

Managing Director
San Francisco

richard.hawwa@nomuragreentech.com



Michael Horwitz

Managing Director
San Francisco

michael.horwitz@nomuragreentech.com



Kanishka Kelshikar

Managing Director
New York

kanishka.kelshikar@nomura.com



Takaki Kobayashi

Head of Nomura Greentech, Japan
Tokyo

takaki.kobayashi@nomura.com



Steve Megyery

Managing Director
New York

steve.megyery@nomuragreentech.com



Andrei Milekhin

Managing Director
London

andrei.milekhin@nomura.com



Yohan Minaya

Managing Director
New York

yohan.minaya@nomuragreentech.com



Frank Nicklaus

Managing Director
New York

frank.nicklaus@nomuragreentech.com



Damien Sauer

Chairman of Nomura
Greentech, EMEA
Zürich

damien.sauer@nomuragreentech.com



Alex Stein

Co-Head of Nomura Greentech,
EMEA
Zürich
alex.stein@nomuragreentech.com



Keith Tauro

Managing Director, Head of
Advanced Materials and Chemicals,
Americas, New York
keith.tauro@nomuragreentech.com



David Verbitsky

Managing Director
New York

david.verbitsky@nomuragreentech.com



Duncan Williams

Global Co-Head of Nomura
Greentech
San Francisco
duncan.williams@nomuragreentech.com



Niul Wood

Managing Director, Head of
Advanced Materials and
Chemicals, EMEA, London
niul.wood@nomura.com



Alex Wotton

Co-Head of Nomura Greentech,
EMEA
London
alex.wotton@nomura.com



James VanMilder

Managing Director, Head of
Nomura Greentech Equity Capital
Markets, New York
james.vanmilder@nomuragreentech.com



Enrico Zini

Managing Director
Singapore

enrico.zini@nomuragreentech.com

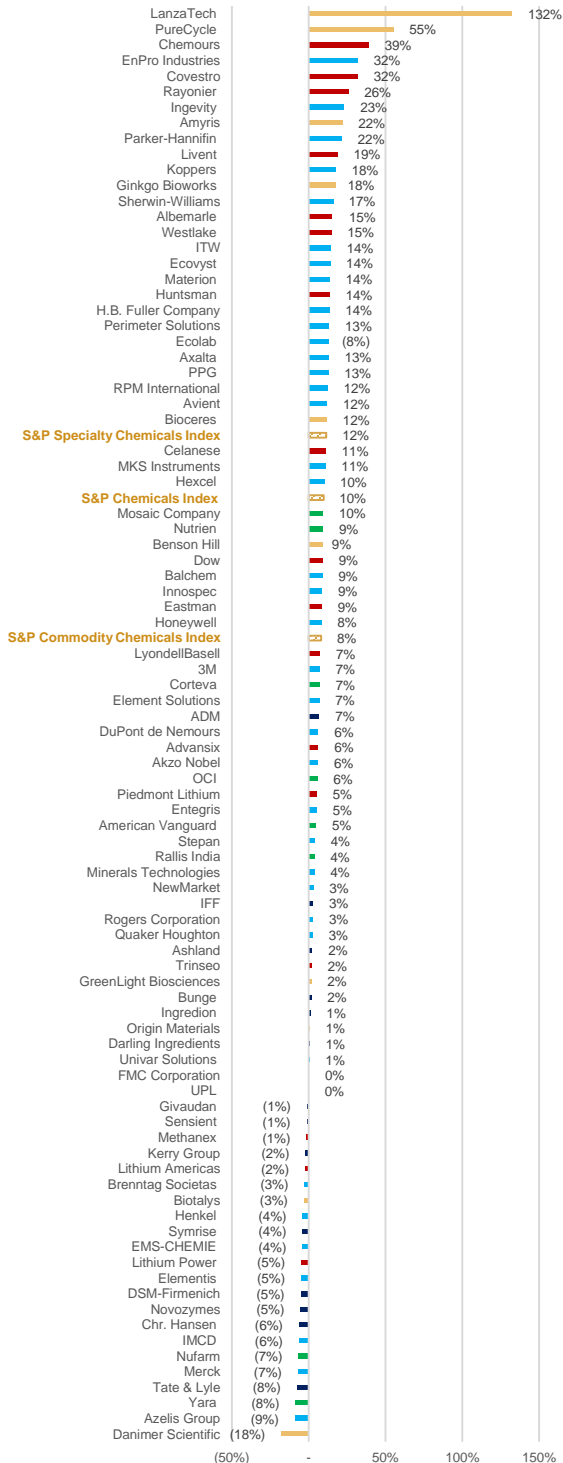


Appendix

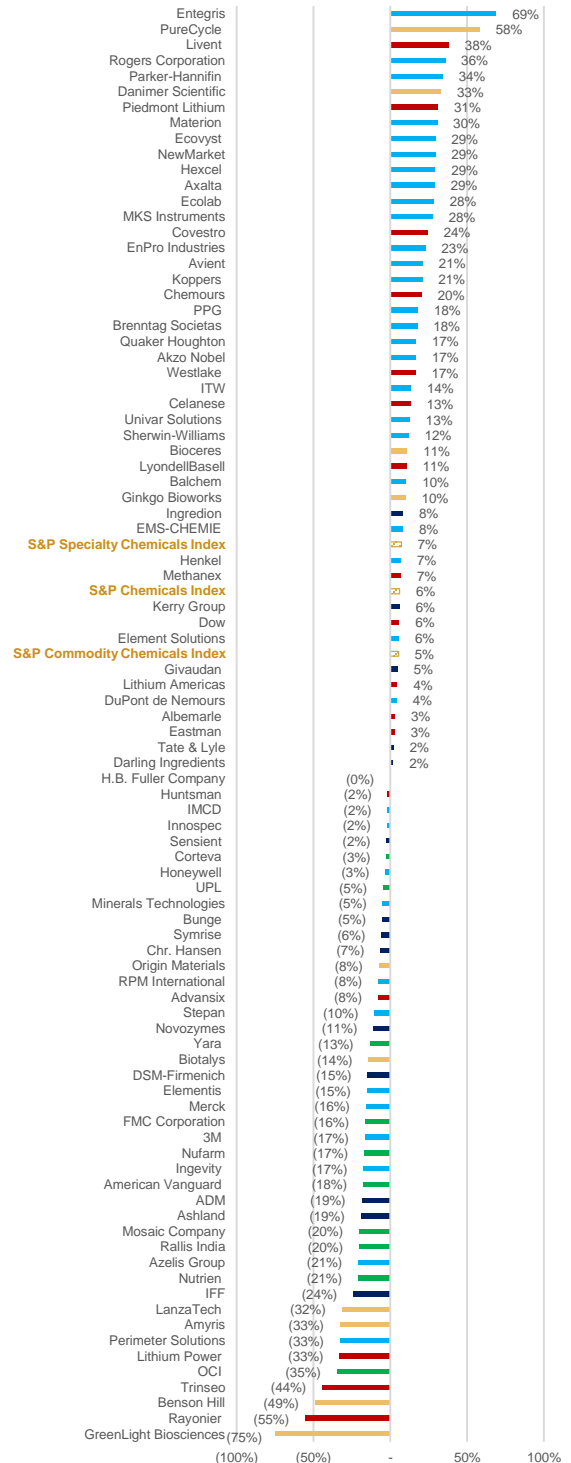
Advanced Materials and Chemicals

Share Price Performance

1 Month



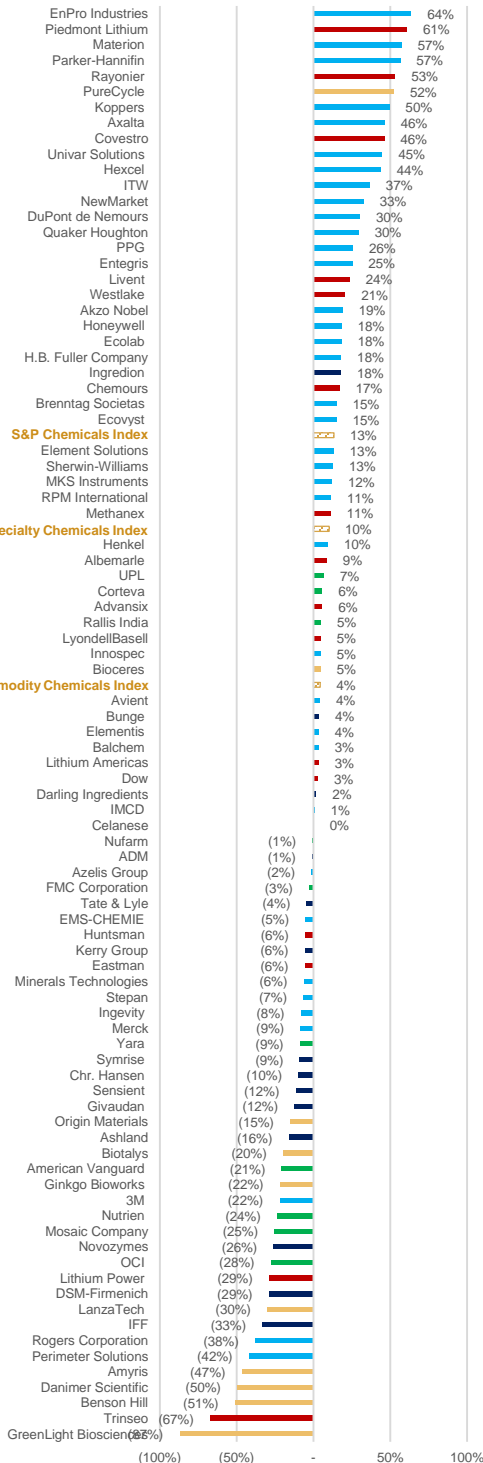
Year-to-Date



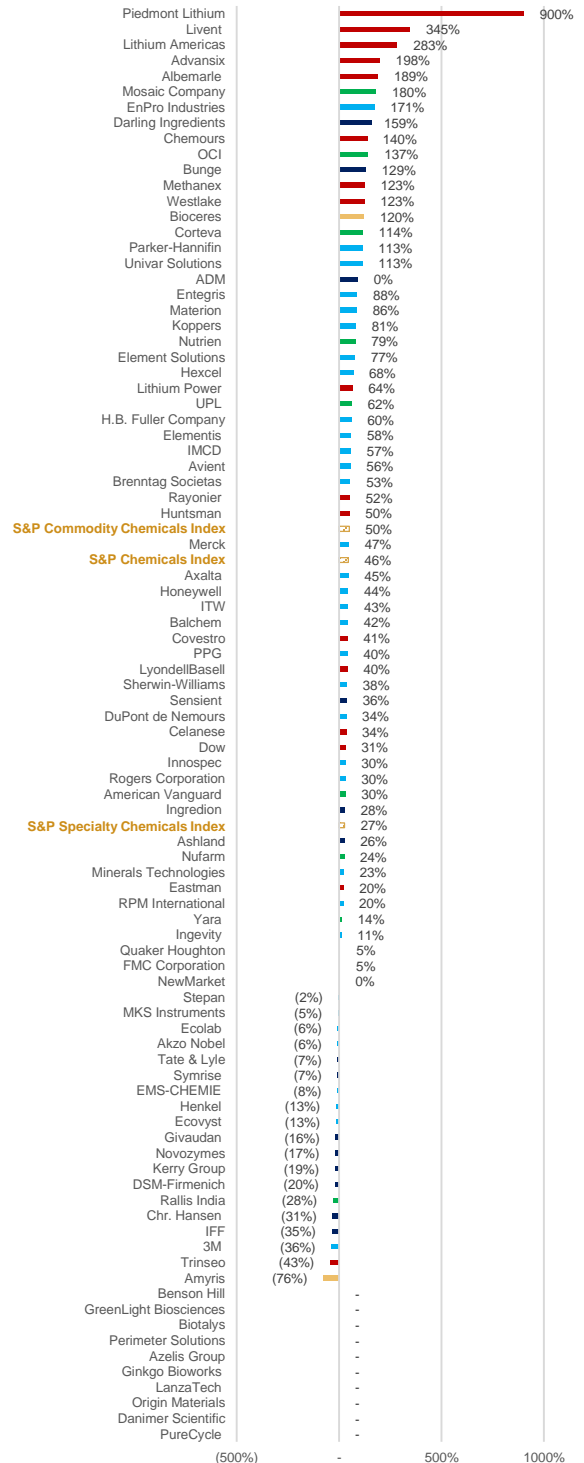
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Share Price Performance

1 Year



3 Years



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