




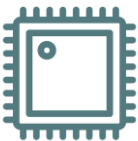






Advanced Materials and Chemicals Update

March 2024

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

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Key Index Trading Performance

	Share Price Performance (Indexed to Today)				
	3-Years	1-Year	YTD	3 Months	1 Month
S&P 500	32%	32%	10%	10%	4%
S&P Chemicals Index	14%	17%	7%	7%	5%
S&P Commodity Chemicals Index	4%	12%	7%	7%	6%
S&P Specialty Chemicals Index	4%	22%	6%	6%	6%

(Indexed to 100)



	Average Performance (EV / NTM EBITDA)					
	3-Years	1-Year	YTD	3 Months	1 Month	Current
S&P 500	13.2x	13.1x	13.8x	13.8x	14.1x	14.3x
S&P Chemicals Index	10.8x	11.2x	11.9x	11.9x	12.4x	12.6x
S&P Commodity Chemicals Index	6.1x	7.0x	7.5x	7.5x	7.7x	7.9x
S&P Specialty Chemicals Index	13.3x	12.6x	13.6x	13.6x	14.2x	14.5x

(EV / NTM EBITDA)



Advanced Materials and Chemicals Industry M&A Activity

	2024		2023		YoY Change	
	#	Value (\$bns)	#	Value (\$bns)	#	Value
January	55	\$2.2	71	\$2.4	(23%)	(8%)
February	37	\$3.0	44	\$2.3	(16%)	30%
March	38	\$3.5	79	\$16.0	(52%)	(78%)
Year to Date	130	\$8.7	194	\$20.7	(33%)	(58%)

Source: Company filings, Dealogic, Mergermarket, Factset as of March 28th, 2024. All estimates reflect Factset consensus estimates.

Select Mergers & Acquisitions

- On March 1, **Univar Solutions**, a specialty chemicals and ingredient distributor, acquired **Valley Solvents & Chemicals Company**, a regional solvents and inorganics distributor ([Press Release](#))
- On March 1, **Nippon Pigment Company**, a Japan-based specialty chemicals manufacturing company acquired **Sumika Color**, a Japan-based producer of colorant master batches and compounds, from **Sumitomo Chemical**, a Japan-based chemicals company for ~\$7mm ([Press Release](#))
- On March 4, **AE Industrial Partners**, a private equity firm specializing in Aerospace, National Security, and Industrial Services, acquired **Calca Solutions**, a leading manufacturer of hydrazine for military aircrafts ([Press Release](#))
- On March 4, **International Chemical Investor Group (ICIG)**, a Germany-based holding company focusing on chemicals and pharmaceutical industries, acquired a majority stake in **Vasant Chemicals**, an India-based manufacturer of Specialty Chemicals and Pharma Intermediates ([Press Release](#))
- On March 5, **Kodiak**, a supplier of chemicals for the steel, automotive, energy, and aerospace industries, acquired **Aztech Lubricants**, provider of lubricants and solutions for the wire drawing industry ([Press Release](#))
- On March 5, **TruArc Partners**, a middle-market private equity firm, acquired **Meyer Laboratory**, a manufacturer and distributor of industrial and institutional (I&I) cleaning chemicals and applications systems ([Press Release](#))
- On March 13, **Trinseo**, a specialty material solutions provider, commenced a sale process for its 50% ownership in **Americas Styrenics**, a JV between Trinseo and Chevron Phillips Chemical Company producing polystyrene and styrene monomer products ([Press Release](#))
- On March 19, **Roquette**, a France-based producer of plant-based ingredients and pharmaceutical excipients, acquired **IFF Pharma Solutions**, IFF's business segment producing excipients for oral dosage solutions, for an enterprise value of **\$2.85bn** and an EV / EBITDA multiple of **13.0x** ([Press Release](#))
- On March 27, **AgroFresh Solutions**, a manufacturer of agricultural chemicals, acquired **Pace International**, a producer of fungicides, cleaners and sanitizers ([Press Release](#))
- On March 28, **KCC Corp**, a South-Korean manufacturer of paint and related products, acquired the remaining **39.61%** stake in **Momentive Performance Materials (MPM) Group**, a high-performance silicones and specialty solutions company, for ~\$600mm ([Press Release](#))
- On March 30, **RHI Magnesita**, a Netherlands-based provider of refractory products for the steel, cement, metals and chemicals industries, acquired **Resco Group**, a producer of alumina monolithic and refractories from **Balmoral Funds**, for **\$430mm** ([Press Release](#))

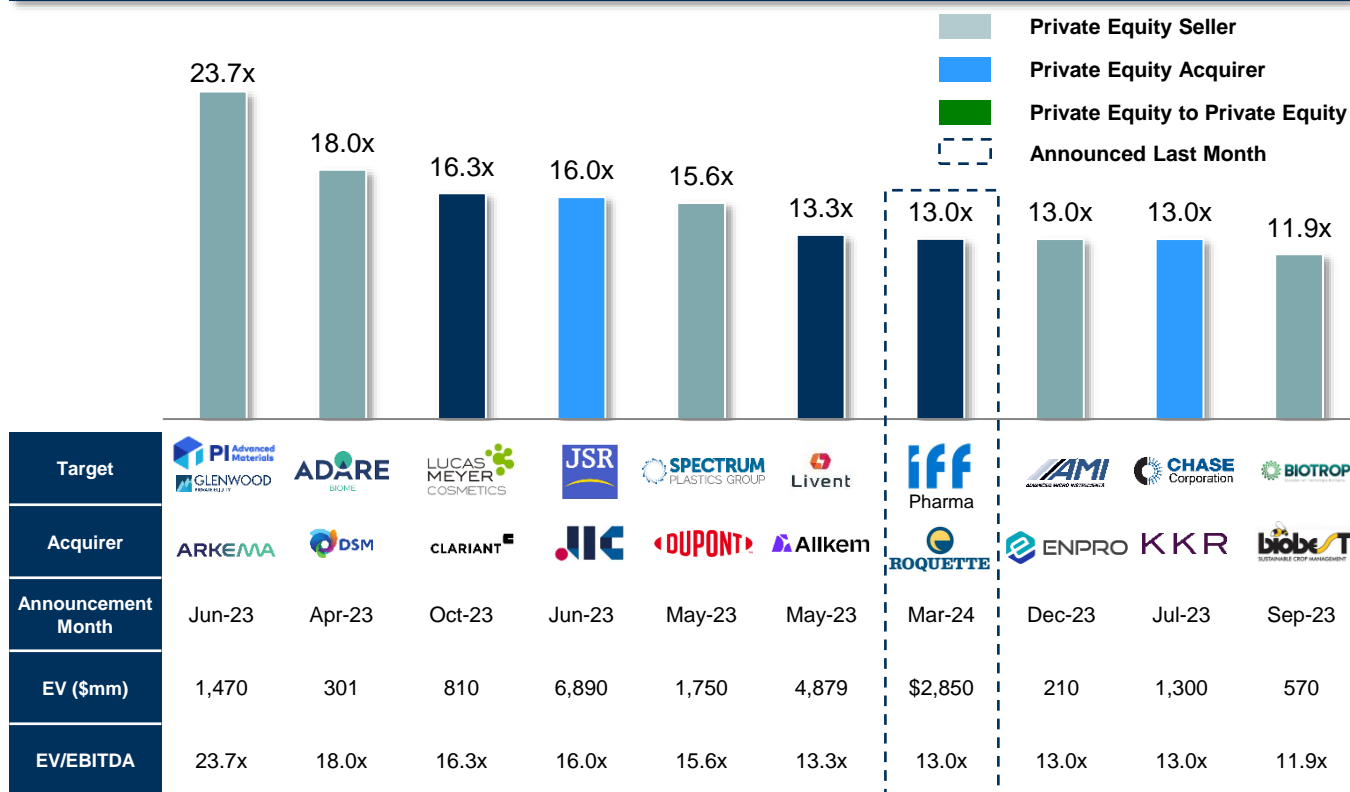
Select Capital Raises

- On March 15, **Ac-Planta**, a Japan-based agricultural chemicals manufacturer, secured ~\$3mm in **Series A** financing led by **Universal Materials Incubator Co**, **IT-Farm Corp** and **Global Brain Corp** ([Press Release](#))

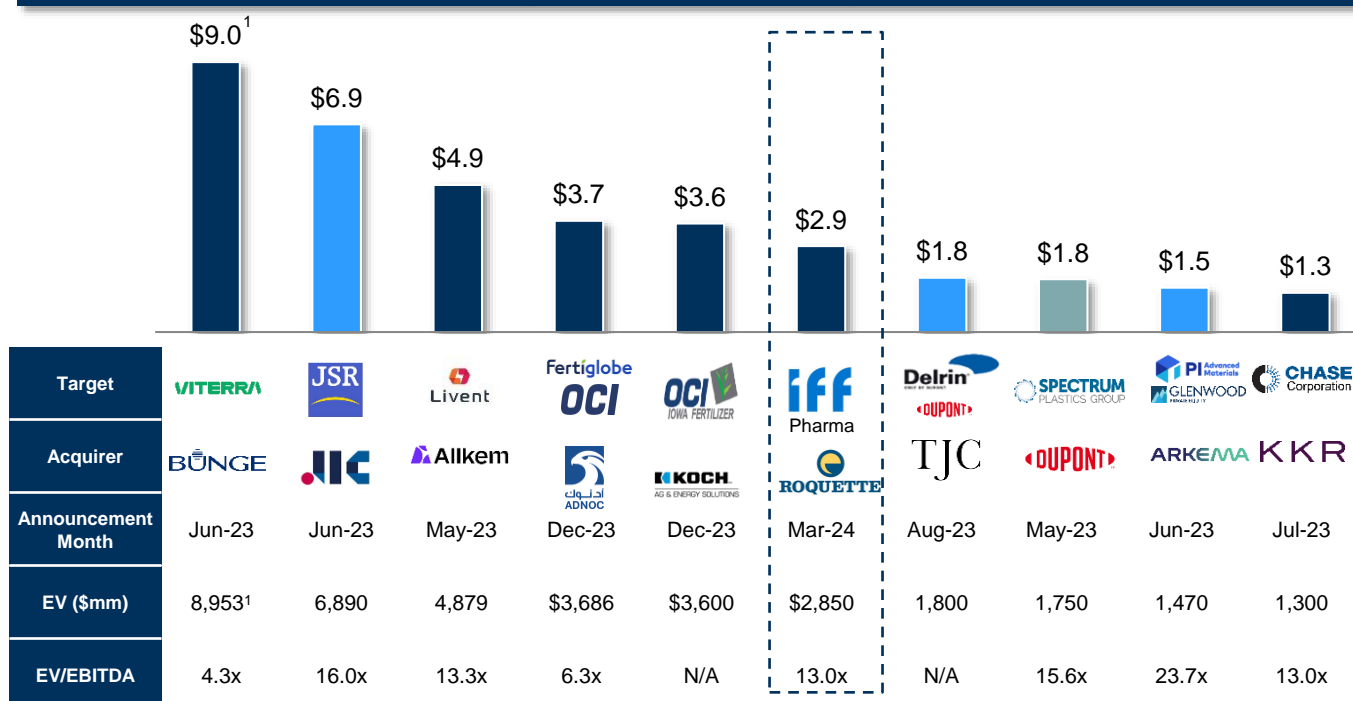
Corporate and
Market
Announcements

- The **Department of Energy** announced up to **\$6bn** across **33 projects** to decarbonize energy intensive industries, reduce industrial gas emissions, revitalize industrial communities and strengthen the nation's manufacturing competitiveness, as part of the **Biden-Harris** administration's **Bipartisan Infrastructure Law** and **Inflation Reduction Act** ([Press Release](#))
- **Univar Solutions Brasil**, a subsidiary of **Univar Solutions**, announced a new distribution agreement with **Arxada**, a Switzerland-based specialty chemicals company, for a full range of biocides, preservatives, and performance additives used in a variety of industrial applications ([Press Release](#))
- **Solvay**, a Belgium-based chemicals company, and **Carester**, a provider of rare earth elements mining and consulting services, signed a MoU to form a strategic partnership and pursue manufacturing opportunities within the rare earth industry in Europe ([Press Release](#))
- **FMC Corporation**, a leading global agricultural sciences company, announced a collaboration in Canada with **Novonosis**, a Denmark-based leader in plant biosolutions formed as a merger between Novozymes and Chr. Hansen, as a part of FMC's strategic plan to grow its biologicals platform in key markets ([Press Release](#))
- **WEG**, a Brazil-based producer of electric motors, generators, control systems and other industrial devices, announced an investment of **\$20mm** in a new industrial liquid paints factory in Mexico ([Press Release](#))
- **Vestaron Corporation**, a leading innovator in sustainable crop protection solutions, announced the **Environmental Protection Agency's** approval of its second novel-acting peptide-based insecticide, **BASIN®** ([Press Release](#))
- **Governor JB Pritzker** and **Innovate Illinois** announced **\$680mm** in combined cash match and strategic investments from public and private partners for the **Illinois Fermentation and Agriculture Biomanufacturing** Tech Hub to boost Illinois' position within biomanufacturing and precision fermentation ([Press Release](#))
- **aXichem AB**, a Sweden-based developer of innovative natural analogue feed additives, and **Chr. Olesen**, a Denmark-based distributor in the animal health and nutrition industry, announced the strategic launch of **aXiphen**, an illness preventing feed ingredient for the breeding of chicken and pigs in Brazil ([Press Release](#))
- **Jon-Don**, a leading supplier of commercial supplies, equipment, consumables, partnered with **PPG Flooring**, PPG's segment providing high-performance flooring systems, to expand its offering of resinous floor coatings for concrete flooring ([Press Release](#))
- **BASF**, a Germany-based chemicals company, has been selected by the **U.S. Department of Energy** to begin award negotiations to receive up to **\$75mm** for an investment project to introduce low-carbon syngas production from recycled chemical byproduct streams at its Freeport site ([Press Release](#))
- **McDermott**, a provider of engineering and construction solutions to the energy industry, announced mechanical completion of a pioneering industrial-scale biosurfactant plant for **Evonik**, which will be used for the production of Rhamnolipids, a bacterial surfactant with the potential to fundamentally transform cleaning products and significantly reduce their environmental impact ([Press Release](#))

Highest Multiples Paid



Largest Transaction Size by EV



Source: Company filings, Mergermarket, Dealogic, Factset as of March 28th, 2024. All estimates reflect Factset consensus estimates.

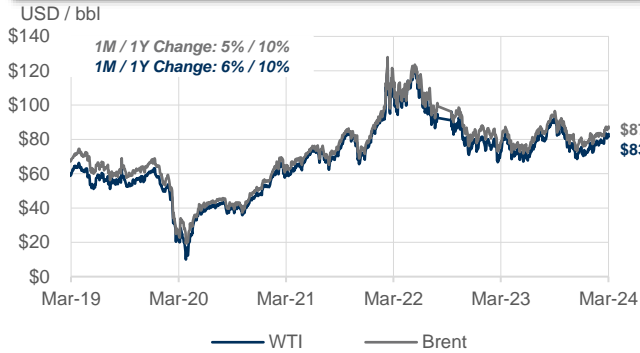
1. Bunge acquisition of Viterria assumes RMI of \$9.0bn to be netted off from net debt.

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Markets Update

Conventional Chemical Commodities

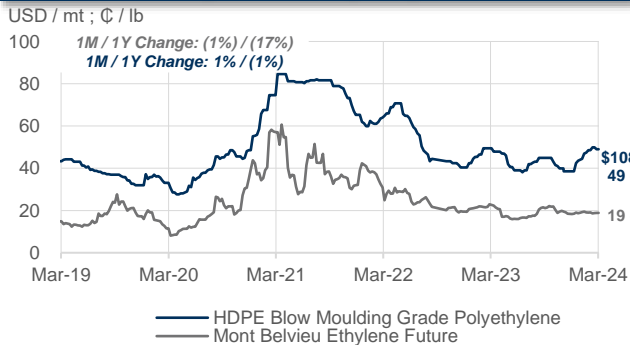
WTI / Brent



Natural Gas



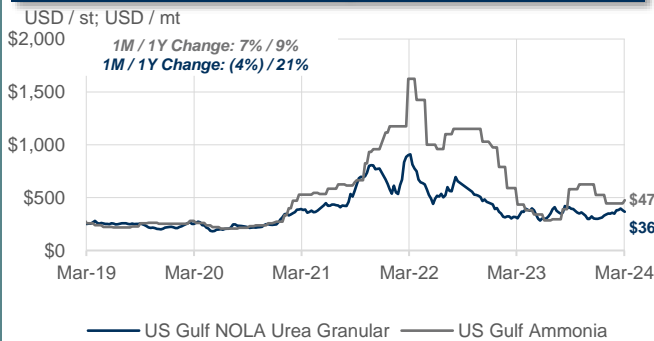
Ethylene / Polyethylene



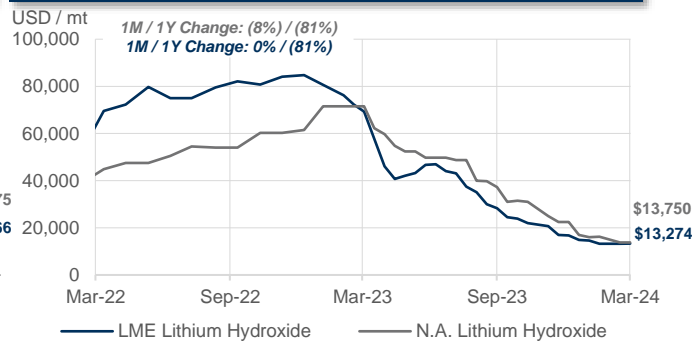
TiO₂



Nitrogen



Lithium



Corn

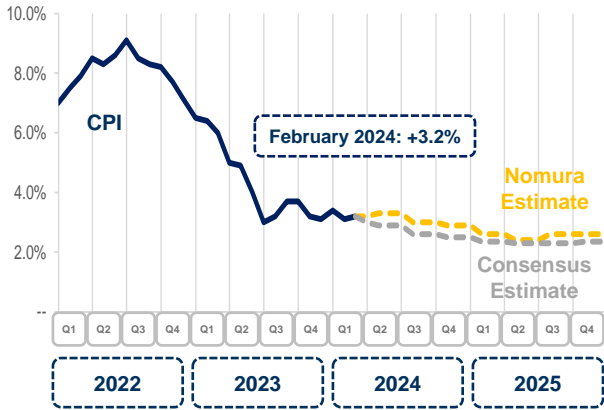


Soy

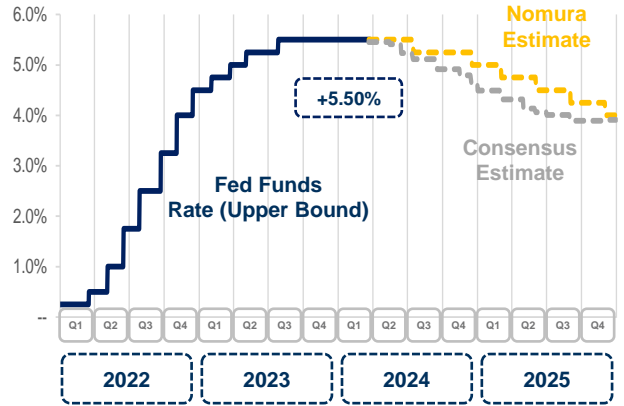


Crops

Inflation Estimates Approaching Fed Target

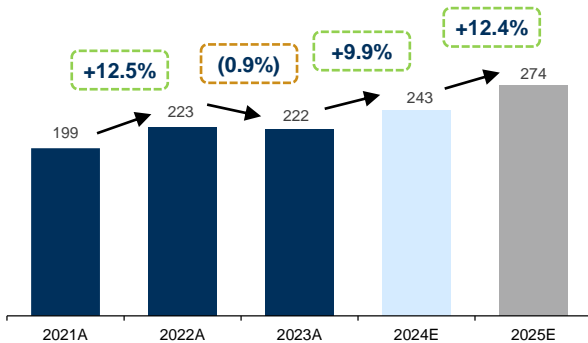


Fed Pivot Underway: Cuts Expected In June

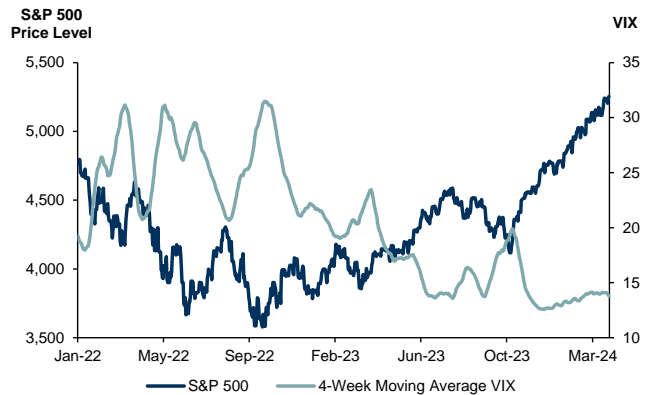


Markets Looking Toward Healthy '24 Earnings Growth

Consensus S&P 500 Expected Earnings



S&P 500 at All-Time High While VIX at Four Year Low

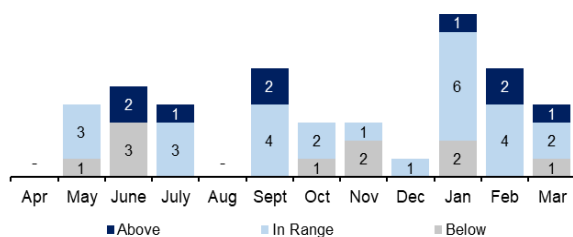


IPO Activity Has Picked Up in 2024

Total IPO Proceeds (\$bn)

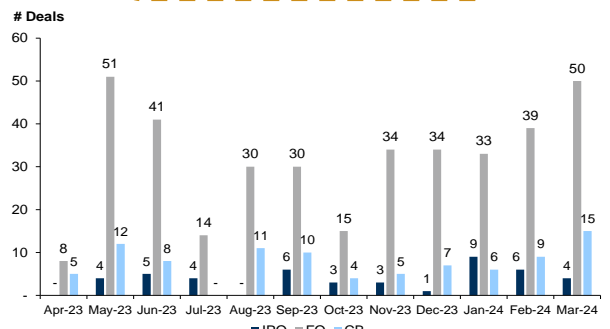
-- 5.6 1.7 1.0 -- 7.1 1.9 0.7 0.1 4.4 2.2 2.1

January 2024 was the busiest month by # of IPOs since November 2021



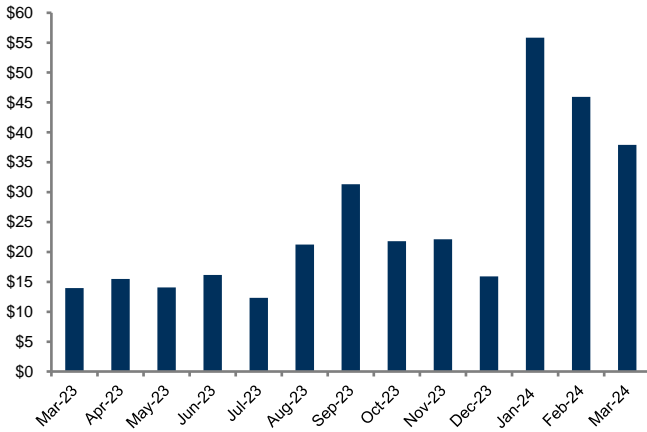
Follow-On and Convert Activity Remain Elevated

March was the busiest month by total number of ECM deals since Nov. 2021

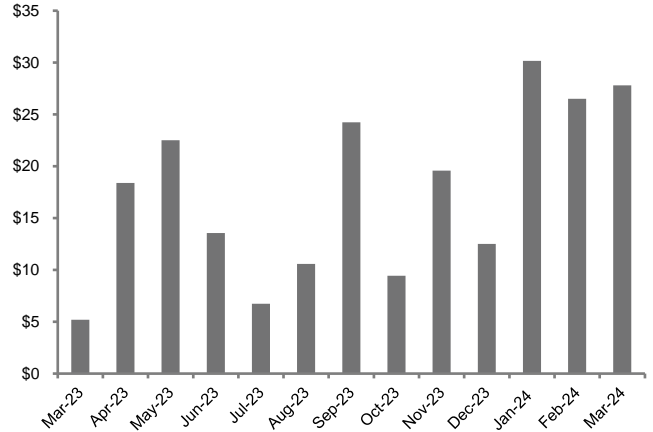


Source: Bloomberg as of market close March 28th, 2024. Inflation chart reflects January data. 1. November 2021 saw 23 IPOs, 69 Follow-Ons and 18 Convertible Bonds over \$50m priced

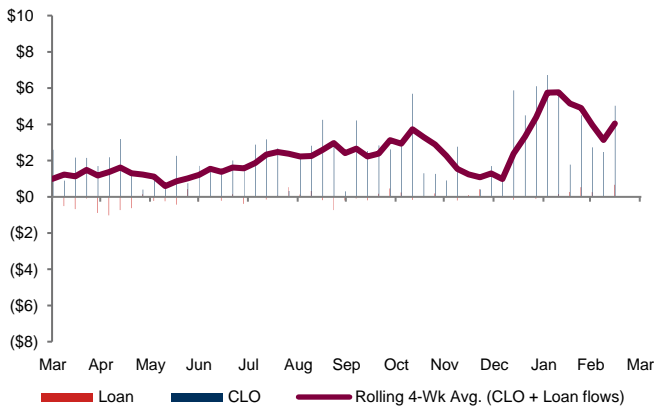
Loan Volume



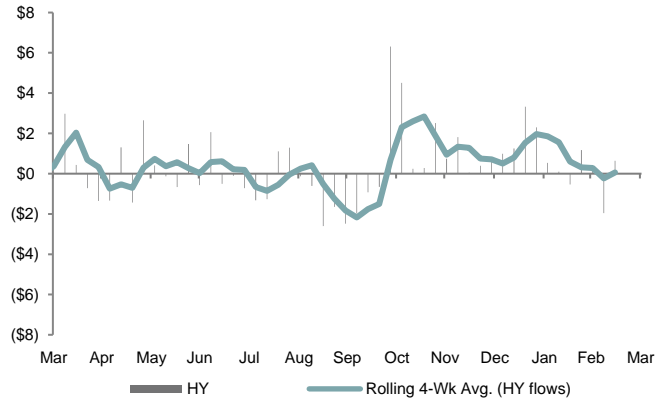
High Yield Volume (\$bn)



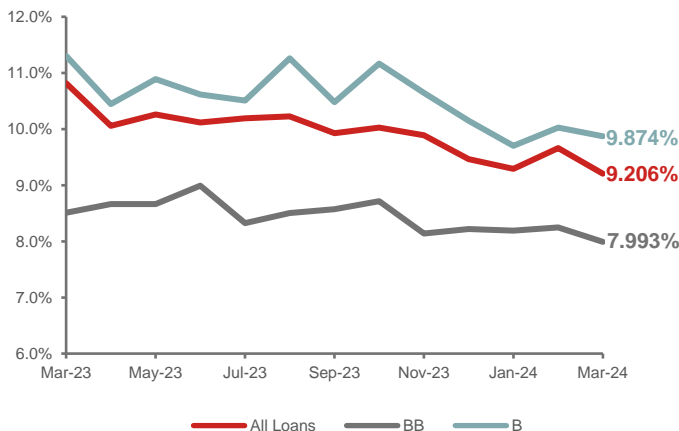
CLO Issuance + Loans Funds Flows (\$bn)



Recent High Yield Funds Flows (\$bn)



Leveraged Loan New Issue Yields¹



High Yield New Issue Yields

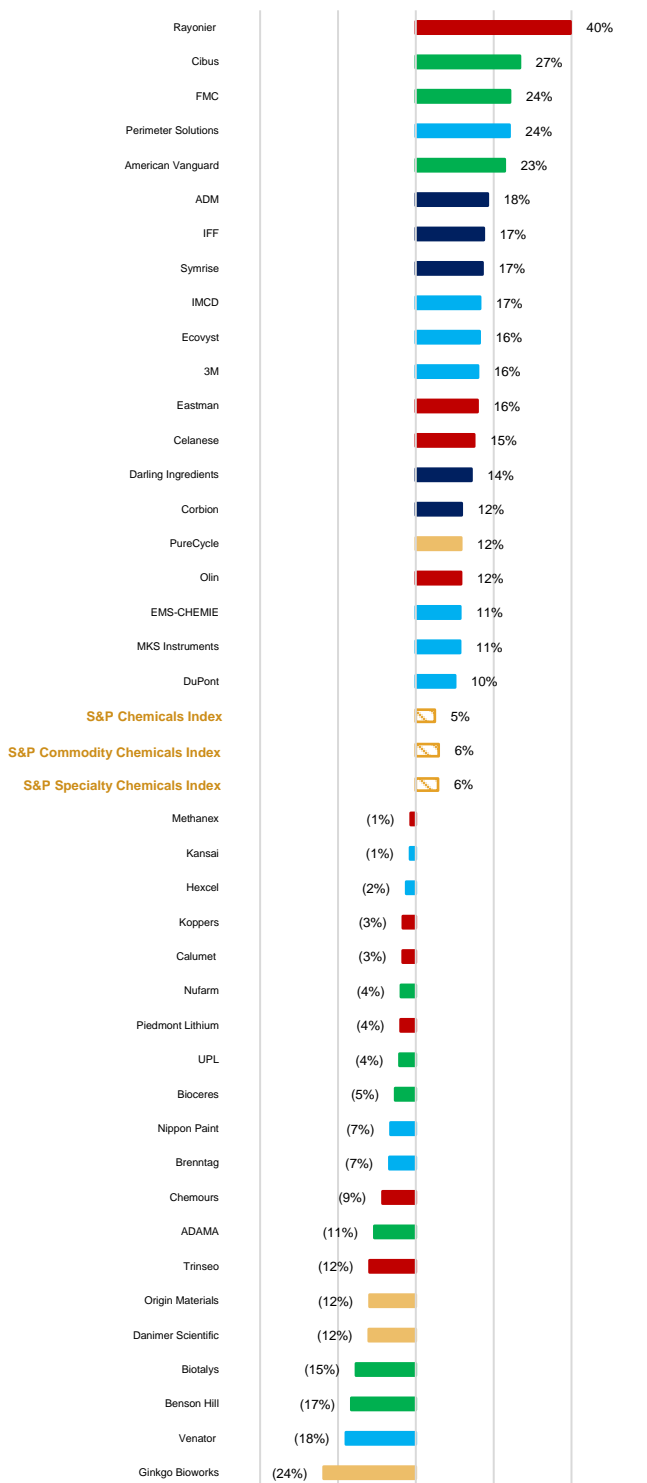


Source: Nomura, LCD.
1. Reflects rolling 30-day period.

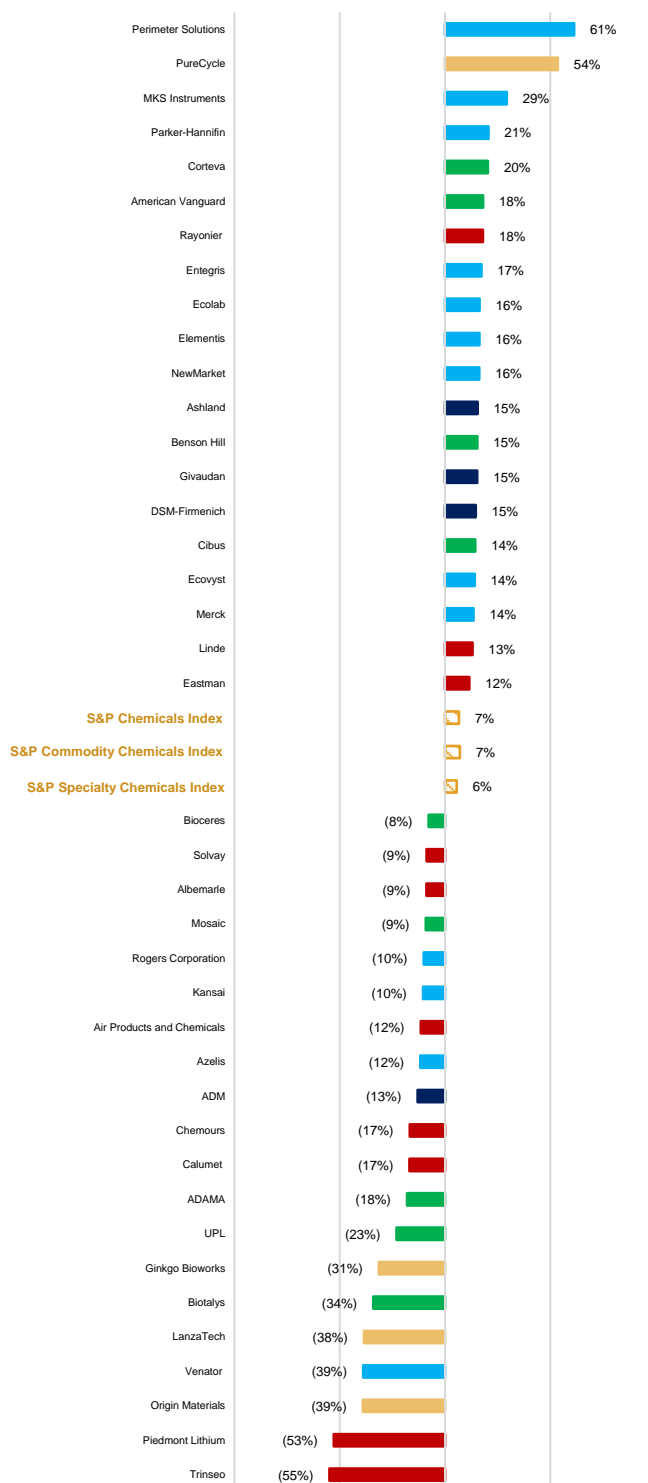
Advanced Materials and Chemicals

Share Price Performance

1 Month (Top & Bottom 20 Performers)



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



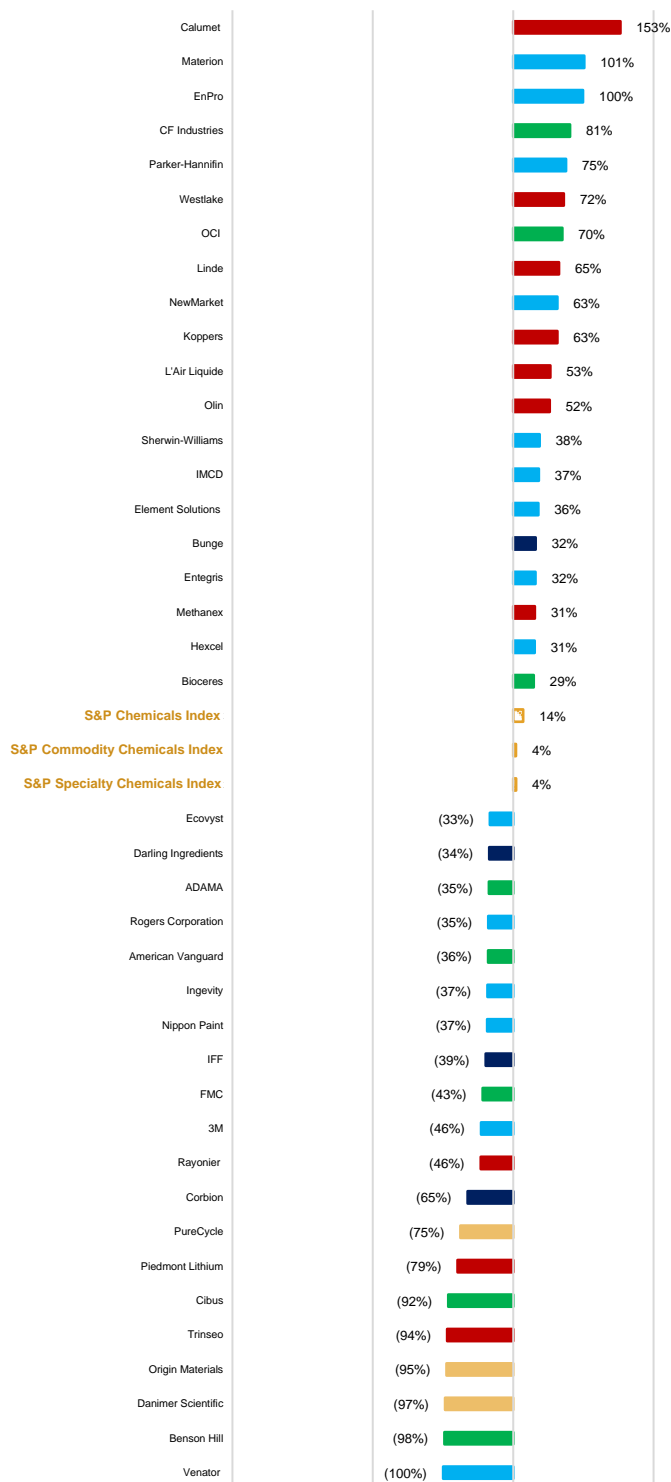
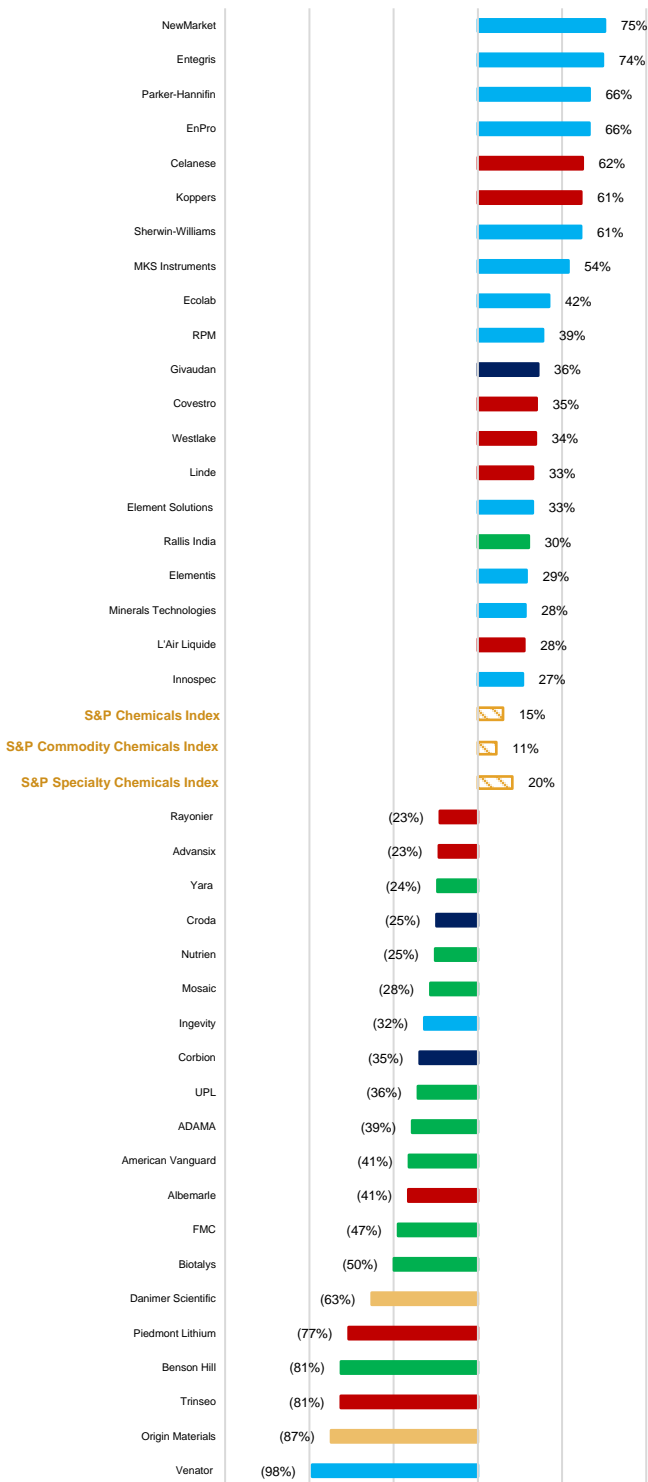
● Agriculture Chemicals
 ● Commodity & Diversified
 ● Chemicals Technology
 ● Ingredients
 ● Specialties
 ● Indices

Advanced Materials and Chemicals

Share Price Performance

1 Year (Top & Bottom 20 Performers)

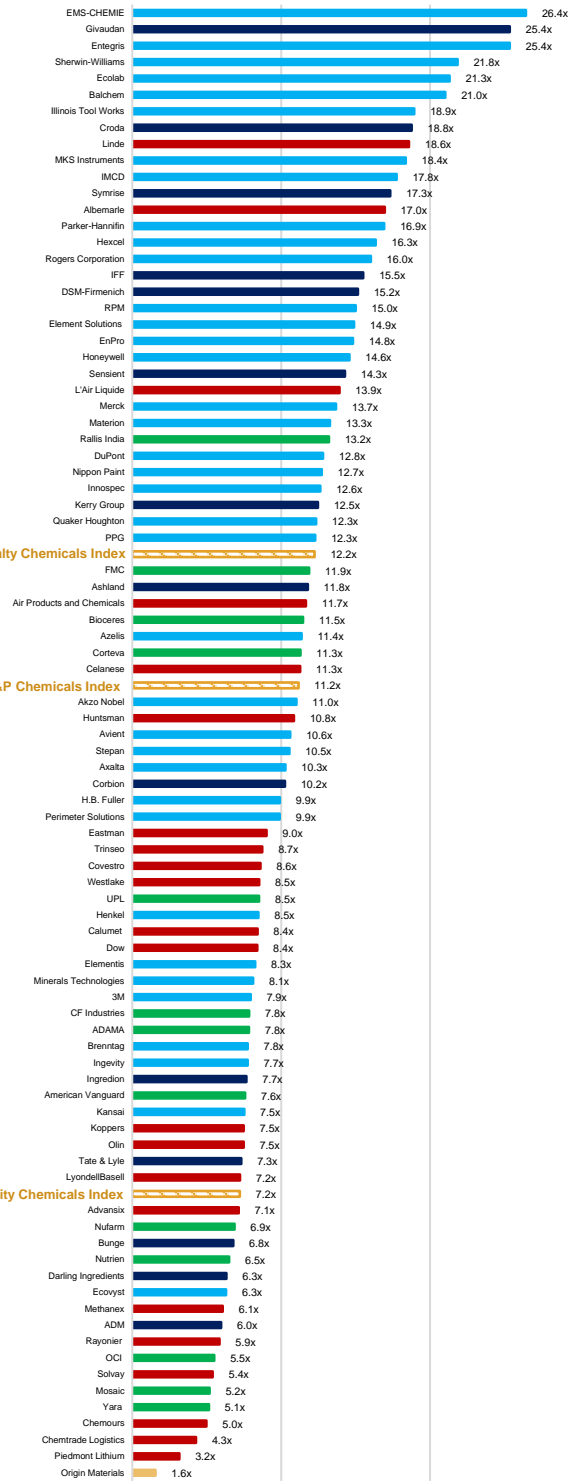
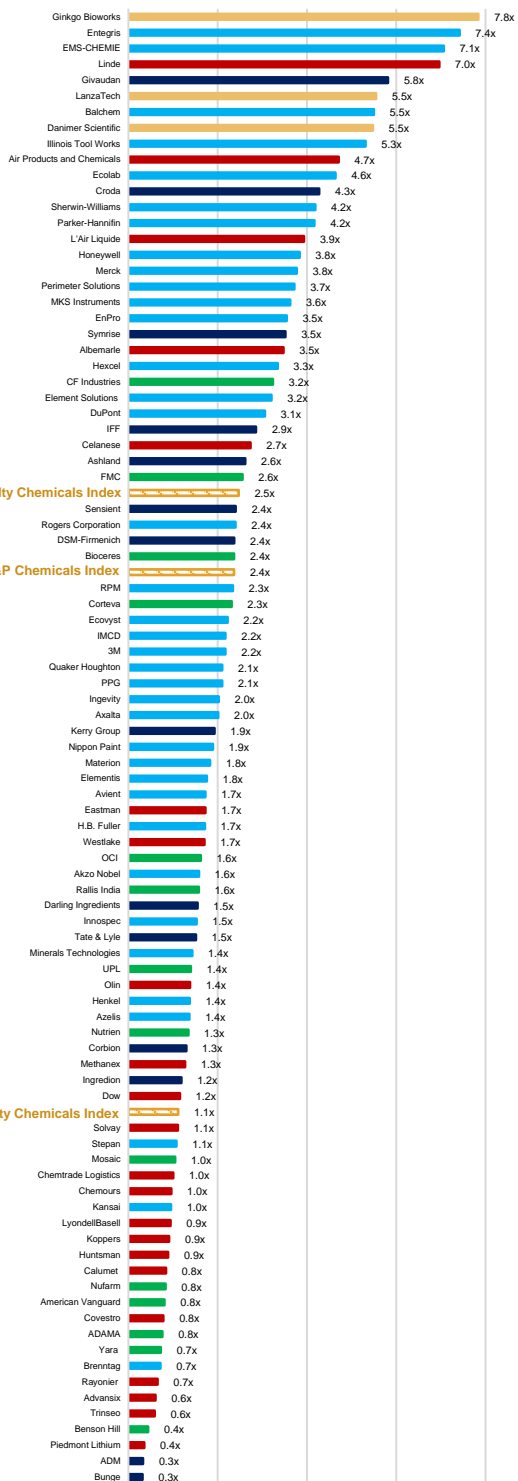
3 Years (Top & Bottom 20 Performers)



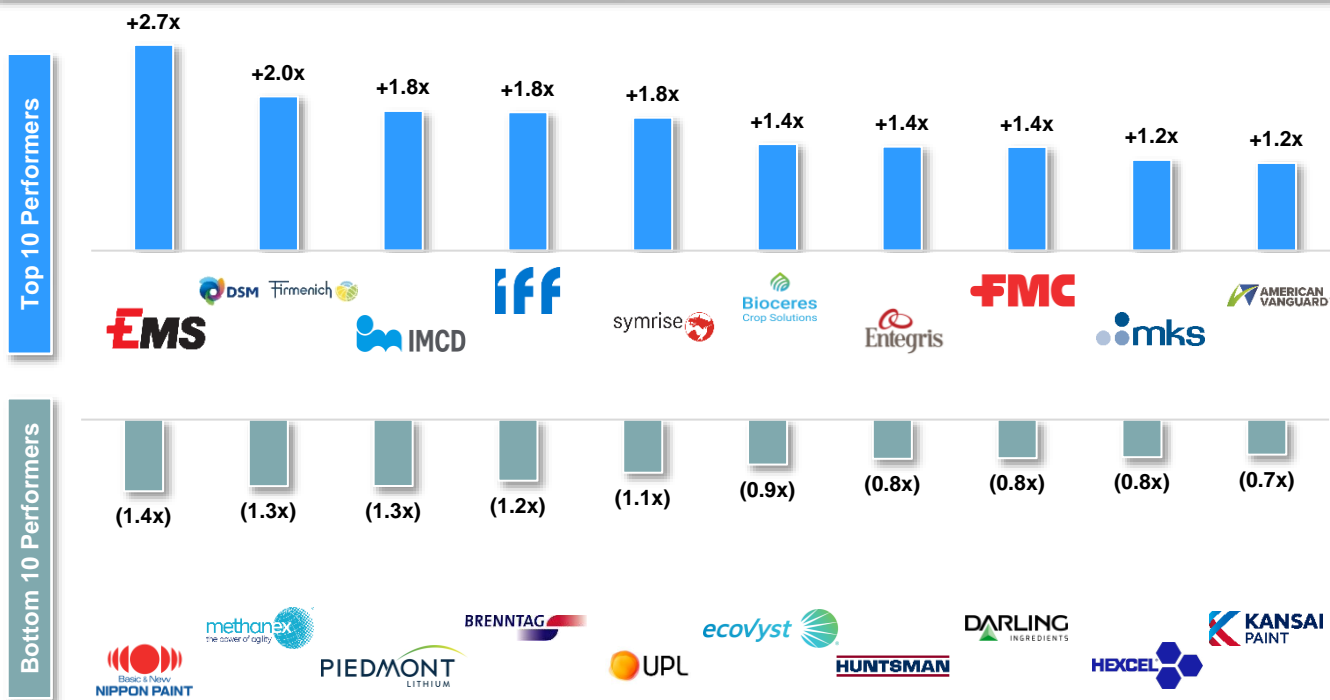
● Agriculture Chemicals
 ● Commodity & Diversified
 ● Chemicals Technology
 ● Ingredients
 ● Specialties
 ● Indices

EV / 2024E Sales

EV / 2024E EBITDA



1 Month Change (EV / NTM EBITDA)



1 Year Change (EV / NTM EBITDA)



Source: Factset as of March 28th, 2024. All estimates reflect Factset consensus estimates.

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Trading Comparables

Advanced Materials and Chemicals

Trading Comparables

Agriculture Chemicals

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
AgChem Majors																	
Corteva	USD	57.67	91%	20%	1.2%	17,589	3,601	20.5%	3.3%	39,972	40,662	2.3x	11.3x	10.0x	20.3x	16.7x	(0.2x)
FMC	USD	63.70	51%	1%	3.7%	4,554	979	21.5%	4.2%	7,975	11,633	2.6x	11.9x	10.1x	16.8x	12.7x	3.7x
Mean			71%	11%	2.4%			21.0%	3.7%			2.4x	11.6x	10.1x	18.5x	14.7x	1.8x
Median			71%	11%	2.4%			21.0%	3.7%			2.4x	11.6x	10.1x	18.5x	14.7x	1.8x
ADAMA	CNY	5.69	62%	(18%)	n.a.	4,724	459	9.7%	7.1%	1,834	3,600	0.8x	7.8x	6.7x	n.m.	25.9x	3.7x
American Vanguard	USD	12.95	59%	18%	n.a.	619	66	10.7%	3.7%	376	501	0.8x	7.6x	6.9x	18.2x	15.2x	1.9x
Nufarm	AUD	5.50	90%	5%	2.1%	2,440	296	12.1%	5.9%	1,380	2,033	0.8x	6.9x	6.2x	15.6x	12.2x	1.6x
Rallis India	INR	250.55	85%	(1%)	1.4%	361	43	11.9%	10.7%	584	569	1.6x	13.2x	11.0x	25.5x	20.1x	(0.3x)
UPL	INR	455.85	60%	(23%)	1.5%	5,560	913	16.4%	5.5%	4,103	7,774	1.4x	8.5x	6.7x	24.0x	10.7x	4.0x
Mean			74%	1%	1.7%			11.1%	6.8%			1.0x	8.9x	7.7x	19.8x	18.4x	1.7x
Median			73%	2%	1.7%			11.3%	6.5%			0.8x	7.7x	6.8x	18.2x	17.6x	1.8x

Agriculture Technology

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Ag_Tech																	
Benson Hill	USD	0.20	11%	15%	n.a.	129	(31)	n.m.	(47.0%)	45	57	0.4x	n.m.	n.m.	n.m.	n.m.	(0.4x)
Bioceres	USD	12.66	89%	(8%)	n.a.	546	113	20.6%	23.1%	1,120	1,294	2.4x	11.5x	n.m.	16.0x	8.8x	1.6x
Biotalsys	EUR	3.08	45%	(34%)	0.0%	3	(9)	n.m.	0.0%	109	87	26.8x	n.m.	n.m.	n.m.	n.m.	2.4x
Cibus	USD	22.46	58%	14%	n.a.	2	(49)	n.m.	118.7%	568	581	n.m.	n.m.	n.m.	n.m.	n.m.	0.6x
Mean			51%	(3%)	0.0%			20.6%	23.7%			9.9x	11.5x	NA	16.0x	8.8x	1.1x
Median			51%	3%	0.0%			20.6%	11.5%			2.4x	11.5x	NA	16.0x	8.8x	1.1x

Coatings, Adhesives, Sealants and Elastomers (CASE)

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
CASE																	
Akzo Nobel	EUR	69.18	87%	(8%)	2.8%	11,597	1,662	14.3%	1.9%	12,807	18,325	1.6x	11.0x	10.2x	16.2x	14.3x	3.3x
Avatata	USD	34.39	100%	1%	0.2%	5,314	1,039	19.6%	3.0%	7,646	10,686	2.0x	10.3x	9.8x	18.3x	16.0x	2.7x
H.B. Fuller	USD	79.74	95%	(2%)	1.1%	3,632	628	17.3%	4.1%	4,555	6,221	1.7x	9.9x	9.2x	18.2x	15.8x	2.7x
Henkel	EUR	66.76	95%	3%	2.9%	23,148	3,756	16.2%	1.4%	31,312	31,795	1.4x	8.5x	8.0x	14.3x	13.2x	0.0x
Kansai	JPY	2,158.50	82%	(10%)	1.9%	3,831	487	12.7%	5.1%	3,225	3,659	1.0x	7.5x	7.5x	11.2x	13.1x	(0.0x)
Nippon Paint	JPY	1,084.50	83%	(5%)	1.5%	10,430	1,552	14.9%	7.7%	16,831	19,750	1.9x	12.7x	11.9x	20.1x	18.5x	1.9x
PPG	USD	144.90	95%	(3%)	1.8%	18,659	3,189	17.1%	2.9%	34,292	39,183	2.1x	12.3x	11.5x	17.1x	15.5x	1.4x
Quaker Houghton	USD	205.25	92%	(4%)	0.4%	1,999	340	17.0%	3.4%	3,717	4,198	2.1x	12.3x	11.4x	23.4x	20.1x	1.6x
RPM	USD	118.95	99%	7%	1.5%	7,590	1,184	15.6%	4.0%	15,734	17,762	2.3x	15.0x	13.8x	22.5x	20.1x	1.7x
Sherwin-Williams	USD	347.33	100%	11%	0.8%	23,776	4,554	19.2%	4.0%	89,938	99,512	4.2x	21.8x	20.2x	30.4x	27.2x	2.1x
Mean			93%	(1%)	1.4%			16.4%	3.7%			2.0x	12.1x	11.3x	19.2x	17.4x	1.7x
Median			95%	(3%)	1.5%			16.6%	3.7%			2.0x	11.7x	10.8x	18.2x	15.9x	1.8x

Chemical Distribution

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Chemicals Distribution																	
Azelis	EUR	19.59	81%	(12%)	1.5%	4,777	573	12.0%	5.9%	5,163	6,519	1.4x	11.4x	10.8x	18.3x	16.6x	2.2x
Brenntag	EUR	78.08	90%	(6%)	2.8%	19,097	1,767	9.3%	5.2%	11,971	13,699	0.7x	7.8x	7.3x	14.3x	13.2x	0.9x
IMCD	EUR	163.35	97%	4%	1.3%	5,171	633	12.2%	6.9%	10,056	11,239	2.2x	17.8x	16.4x	26.6x	24.3x	1.8x
Mean			89%	(5%)	1.9%			11.2%	6.0%			1.4x	12.3x	11.5x	19.7x	18.0x	1.6x
Median			90%	(6%)	1.5%			12.0%	5.9%			1.4x	11.4x	10.8x	18.3x	16.6x	1.8x

Chemical Technology

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Chem Tech																	
Danimer Scientific	USD	1.09	24%	7%	n.a.	82	(25)	n.m.	80.5%	128	452	5.5x	n.m.	40.4x	n.m.	n.m.	n.m.
Origin Materials	USD	0.51	10%	(39%)	n.a.	30	(45)	n.m.	33.7%	83	(70)	n.m.	1.6x	1.7x	n.m.	n.m.	3.4x
PureCycle	USD	6.22	52%	54%	n.a.	47	(35)	n.m.	n.m.	1,048	1,396	29.9x	n.m.	n.m.	n.m.	n.m.	n.m.
Mean			29%	7%	NA			NA	57.1%			17.7x	1.6x	21.1x	NA	NA	3.4x
Median			24%	7%	NA			NA	57.1%			17.7x	1.6x	21.1x	NA	NA	3.4x

Commodity

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Commodity																	
Advansix	USD	28.60	70%	(5%)	n.a.	1,529	130	8.5%	5.0%	782	928	0.6x	7.1x	4.0x	25.5x	7.2x	1.1x
Chemrtrade Logistics	CAD	8.49	92%	(0%)	7.6%	1,306	307	23.5%	(1.5%)	813	1,311	1.0x	4.3x	4.2x	10.0x	10.3x	1.6x
Dow	USD	57.93	99%	(6%)	4.9%	45,463	6,258	13.8%	3.8%	41,177	52,514	1.2x	8.4x	7.0x	19.2x	13.5x	1.6x
LyonellBasell	USD	102.28	99%	(8%)	5.0%	40,422	5,271	13.0%	(7.3%)	33,414	38,135	0.9x	7.2x	6.6x	12.3x	10.3x	1.5x
Methanex	CAD	60.37	93%	(4%)	1.7%	3,704	775	20.9%	4.2%	3,016	4,704	1.5x	5.3x	5.3x	15.4x	10.1x	2.1x
Olin	USD	58.80	98%	9%	1.4%	7,063	1,304	18.5%	5.4%	7,214	9,749	1.4x	7.5x	6.0x	15.5x	9.5x	1.9x
Westlake	USD	152.80	100%	9%	1.3%	12,346	2,468	20.0%	2.2%	19,790	21,029	1.7x	8.5x	7.5x	21.6x	16.3x	0.6x
Mean			93%	3%	3.6%			16.9%	1.6%			1.2x	7.0x	5.8x	17.1x	11.0x	1.5x
Median			98%	6%	3.3%			18.5%	3.6%			1.2x	7.2x	6.0x	15.5x	10.3x	1.6x

Source: Company filings, Factset as of March 28th, 2024.

Advanced Materials and Chemicals

Trading Comparables

Diversified

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Diversified																	
Calumet	USD	14.86	75%	(17%)	n.a.	3,667	367	10.0%	(3.1%)	1,216	3,089	0.8x	8.4x	7.1x	n.m.	26.9x	4.4x
Celanese	USD	171.86	100%	11%	1.6%	11,210	2,720	24.3%	4.2%	19,308	30,664	2.7x	11.3x	10.2x	15.1x	12.3x	4.3x
Chemours	USD	26.26	67%	(17%)	4.0%	6,142	1,184	19.3%	4.1%	3,941	5,894	1.0x	5.0x	4.2x	7.0x	5.2x	1.8x
Covestro	EUR	50.68	93%	(4%)	0.7%	15,897	1,445	9.1%	4.1%	10,088	12,445	0.8x	8.6x	6.8x	n.m.	18.9x	1.5x
Eastman	USD	100.22	100%	12%	3.3%	9,441	1,806	19.1%	3.8%	11,904	16,280	1.7x	9.0x	8.3x	13.1x	11.2x	2.4x
Huntsman	USD	26.03	87%	4%	3.8%	6,244	511	8.2%	4.9%	4,551	5,549	0.9x	10.8x	7.6x	45.0x	15.8x	2.2x
Koppers	USD	55.17	95%	8%	n.a.	2,244	274	12.2%	4.1%	1,249	2,047	0.9x	7.5x	7.0x	11.8x	10.5x	2.8x
Rayonier	USD	4.78	74%	18%	n.a.	1,680	187	11.1%	3.5%	328	1,094	0.7x	5.9x	5.0x	n.m.	35.0x	3.7x
Solvay	EUR	25.30	22%	(9%)	9.7%	5,006	1,028	20.5%	(0.5%)	2,819	5,549	1.1x	5.4x	4.9x	7.0x	5.9x	2.9x
Trinseo	USD	3.78	17%	(55%)	1.1%	3,520	238	6.8%	(0.1%)	137	2,075	0.6x	8.7x	6.5x	n.m.	n.m.	8.6x
Mean			79%	1%	3.8%			14.9%	2.8%			1.2x	8.0x	6.8x	16.5x	15.8x	2.9x
Median			87%	4%	3.5%			12.2%	4.1%			0.9x	8.4x	7.0x	12.4x	12.3x	2.8x

Electronic Chemicals & Materials

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Electronic Chemicals																	
Element Solutions	USD	24.98	99%	8%	1.1%	2,439	525	21.5%	4.7%	6,142	7,819	3.2x	14.9x	13.8x	18.1x	15.9x	3.1x
EnPro	USD	168.77	99%	8%	n.a.	1,100	263	23.9%	5.3%	3,606	3,900	3.5x	14.8x	13.5x	22.8x	19.9x	1.1x
Entegris	USD	140.54	96%	17%	0.2%	3,439	1,006	29.2%	5.2%	21,382	25,511	7.4x	25.4x	20.8x	42.4x	30.9x	4.1x
Materion	USD	131.75	91%	1%	0.4%	1,754	242	13.8%	7.8%	2,787	3,210	1.8x	13.3x	11.7x	20.9x	17.9x	1.7x
Merck	EUR	163.60	93%	14%	1.4%	22,961	6,328	27.6%	3.5%	77,118	86,560	3.8x	13.7x	12.2x	19.2x	16.8x	1.2x
MKS Instruments	USD	133.00	99%	29%	0.7%	3,603	711	19.7%	5.6%	9,051	13,063	3.6x	18.4x	14.2x	30.6x	19.2x	5.5x
Rogers Corporation	USD	118.69	69%	(10%)	n.a.	885	133	15.0%	3.8%	2,236	2,123	2.4x	16.0x	12.6x	39.0x	25.6x	(0.8x)
Mean			92%	10%	0.8%			21.5%	5.1%			3.7x	16.6x	14.1x	27.6x	20.9x	2.3x
Median			96%	8%	0.7%			21.5%	5.2%			3.5x	14.9x	13.5x	22.8x	19.2x	1.7x

Fertilizers

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Fertilizers																	
CF Industries	USD	83.21	95%	5%	2.3%	5,953	2,456	41.3%	(4.6%)	15,699	19,265	3.2x	7.8x	8.4x	13.4x	14.4x	0.4x
Mosaic	USD	32.46	66%	(9%)	2.4%	12,403	2,502	20.2%	(5.8%)	10,533	12,991	1.0x	5.2x	5.2x	10.6x	9.9x	1.3x
Nutrien	CAD	73.59	73%	(1%)	3.8%	27,291	5,641	20.7%	(0.4%)	26,938	36,647	1.3x	6.5x	6.4x	13.9x	13.0x	1.8x
OCI	EUR	25.39	80%	(3%)	4.9%	5,176	1,523	29.4%	3.2%	5,814	8,381	1.6x	5.5x	5.1x	22.8x	16.3x	1.3x
Yara	NOK	342.90	73%	(5%)	4.7%	15,194	2,144	14.1%	1.4%	8,051	11,025	0.7x	5.1x	4.8x	11.2x	9.8x	1.4x
Mean			77%	(3%)	3.6%			25.1%	(1.3%)			1.6x	6.0x	6.0x	14.4x	12.7x	1.2x
Median			73%	(3%)	3.8%			20.7%	(0.4%)			1.3x	5.5x	5.2x	13.4x	13.0x	1.3x

Ingredients

Company	Local Currency	Local Price as of 28-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Diversified Ingredients																	
ADM	USD	62.81	72%	(13%)	3.1%	91,589	5,040	5.5%	0.1%	32,400	30,047	0.3x	6.0x	6.1x	11.1x	10.7x	0.6x
Bunge	USD	102.52	88%	2%	2.5%	56,330	2,622	4.7%	(2.1%)	14,973	17,765	0.3x	6.8x	7.0x	10.9x	10.5x	1.1x
Darling Ingredients	USD	46.51	65%	(7%)	n.a.	6,257	1,533	24.5%	(1.2%)	7,545	9,688	1.5x	6.3x	5.5x	13.4x	10.3x	2.8x
Ingredion	USD	116.85	98%	8%	2.8%	7,979	1,236	15.5%	0.0%	7,629	9,465	1.2x	7.7x	7.4x	12.1x	11.3x	1.4x
Tate & Lyle	GBP	6.18	74%	(6%)	3.3%	2,090	431	20.6%	(0.3%)	3,175	3,159	1.5x	7.3x	6.8x	10.8x	10.0x	0.6x
Mean			79%	(3%)	2.9%			14.2%	(0.7%)			1.0x	6.8x	6.6x	11.6x	10.6x	1.3x
Median			74%	(6%)	2.9%			15.5%	(0.3%)			1.2x	6.8x	6.8x	11.1x	10.5x	1.1x
Specialty Ingredients																	
Ashland	USD	97.37	93%	15%	1.7%	2,226	494	22.2%	3.6%	4,957	5,822	2.6x	11.8x	10.3x	20.5x	16.3x	1.7x
Corbion	USD	21.49	62%	0%	2.9%	1,472	186	12.7%	(0.9%)	1,278	1,909	1.3x	10.2x	8.3x	19.7x	13.7x	3.5x
Croda	GBP	49.02	69%	(3%)	2.3%	2,185	497	22.8%	4.3%	8,747	9,337	4.3x	18.8x	16.1x	32.5x	26.7x	1.1x
DSM-Firmenich	EUR	105.40	86%	15%	2.1%	13,705	2,141	15.6%	4.1%	30,101	32,449	2.4x	15.2x	13.1x	39.6x	29.6x	0.9x
Givaudan	CHF	4,016.00	97%	15%	1.8%	7,841	1,798	22.9%	3.4%	41,261	45,590	5.8x	25.4x	23.7x	37.0x	33.8x	2.4x
IFF	USD	85.99	88%	6%	1.9%	11,028	2,032	18.4%	(0.8%)	22,078	31,516	2.9x	15.5x	14.4x	23.8x	20.6x	4.6x
Kerry Group	EUR	79.44	79%	1%	1.6%	8,647	1,338	15.5%	2.1%	15,071	16,678	1.9x	12.5x	11.4x	17.5x	15.6x	1.2x
Sensient	USD	69.19	88%	5%	2.4%	1,502	253	16.8%	3.5%	2,967	3,608	2.4x	14.3x	13.3x	23.3x	21.1x	2.5x
Symrise	EUR	110.95	98%	11%	1.1%	5,326	1,081	20.3%	5.0%	16,748	18,723	3.5x	17.3x	15.9x	34.5x	30.1x	2.0x
Mean			82%	7%	2.0%			18.6%	2.3%			3.0x	15.6x	13.9x	27.2x	22.3x	2.2x
Median			86%	6%	1.9%			18.4%	3.4%			2.6x	15.2x	13.1x	23.8x	20.6x	1.7x
Bio-Ingredients																	
Novonesis	DKK	405.20	96%	9%	1.4%	3,494	1,172	33.5%	19.8%	24,322	NM	n.m.	n.m.	n.m.	31.9x	27.8x	0.8x
Mean			96%	9%	1.4%			33.5%	19.8%			NA	NA	NA	31.9x	27.8x	0.8x
Median			96%	9%	1.4%			33.5%	19.8%			NA	NA	NA	31.9x	27.8x	0.8x

Advanced Materials and Chemicals

Trading Comparables

Industrial Gas

Company	Local Currency	Local Price as of 22-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Industrial Gas																	
L'Air Liquide	EUR	190.48	96%	8%	1.8%	30,772	8,693	28.3%	4.3%	108,224	119,650	3.9x	13.8x	12.8x	27.5x	24.9x	1.1x
Air Products and Chemicala	USD	236.71	77%	(14%)	3.0%	12,838	5,208	40.6%	4.6%	52,876	59,375	4.6x	11.4x	10.5x	18.8x	17.2x	1.9x
Linde	USD	468.24	98%	14%	1.2%	34,458	12,904	37.4%	5.5%	227,731	241,897	7.0x	18.7x	17.6x	30.2x	27.4x	1.1x
Mean			90%	3%	2.0%			35.4%	4.8%			5.2x	14.6x	13.6x	25.5x	23.2x	1.4x
Median			96%	8%	1.8%			37.4%	4.6%			4.6x	13.8x	12.8x	27.5x	24.9x	1.1x

Lithium

Company	Local Currency	Local Price as of 22-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Lithium																	
Albemarle	USD	120.86	49%	(16%)	1.4%	5,884	1,208	20.5%	(15.0%)	16,187	18,877	3.2x	15.6x	9.8x	26.5x	13.9x	2.6x
Arcadium Lithium	USD	4.41	61%	NA	n.a.	1,296	509	39.3%	42.5%	4,738	4,738	3.7x	9.3x	5.8x	22.3x	12.3x	0.1x
Piedmont Lithium	USD	12.38	19%	(56%)	n.a.	114	13	11.2%	99.6%	242	22	0.2x	1.7x	0.4x	15.6x	5.1x	(5.6x)
Mean			43%	(36%)	1.4%			23.7%	42.4%			2.4x	8.9x	5.4x	21.4x	10.4x	(1.0x)
Median			49%	(36%)	1.4%			20.5%	42.5%			3.2x	9.3x	5.8x	22.3x	12.3x	0.1x

Multi-Industrial

Company	Local Currency	Local Price as of 22-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Multi Industrial																	
3M	USD	106.78	94%	(2%)	5.9%	31,986	8,744	27.3%	2.7%	59,487	69,823	2.2x	8.0x	7.5x	11.1x	10.4x	1.1x
DuPont	USD	75.74	96%	(2%)	2.0%	12,124	2,894	23.9%	2.8%	31,822	36,688	3.0x	12.7x	11.4x	22.0x	18.2x	1.7x
Honeywell	USD	200.73	95%	(4%)	2.2%	38,563	10,139	26.3%	5.4%	132,072	144,820	3.8x	14.3x	13.4x	20.2x	18.4x	1.2x
Illinois Tool Works	USD	268.66	99%	3%	2.1%	16,515	4,631	28.0%	3.0%	80,715	87,815	5.3x	19.0x	18.1x	26.5x	24.5x	1.5x
Parker-Hannifin	USD	554.89	99%	20%	1.1%	20,353	5,011	24.6%	4.6%	72,975	84,682	4.2x	16.9x	15.8x	21.8x	20.1x	2.3x
Mean			97%	3%	2.7%			26.0%	3.7%			3.7x	14.2x	13.3x	20.3x	18.3x	1.6x
Median			96%	(2%)	2.1%			26.3%	3.0%			3.8x	14.3x	13.4x	21.8x	18.4x	1.5x

Specialty

Company	Local Currency	Local Price as of 22-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
Specialty																	
Avient	USD	41.36	97%	(1%)	1.9%	3,222	524	16.3%	3.9%	3,803	5,367	1.7x	10.2x	9.3x	16.3x	14.0x	2.9x
Batchem	USD	155.55	98%	5%	n.a.	965	253	26.2%	5.0%	5,087	5,328	5.5x	21.1x	19.4x	36.4x	32.4x	1.0x
Ecolab	USD	229.27	100%	16%	1.0%	16,031	3,475	21.7%	4.9%	66,198	73,824	4.6x	21.2x	19.6x	35.8x	31.6x	2.1x
Ecovyst	USD	10.34	84%	6%	n.a.	758	268	35.3%	8.0%	1,244	1,587	2.1x	5.9x	5.4x	12.0x	9.1x	2.9x
Elementis	GBP	1.41	95%	10%	1.9%	735	156	21.3%	4.1%	1,042	1,239	1.7x	7.9x	7.3x	15.2x	12.9x	1.3x
EMS-CHEMIE	CHF	689.00	86%	1%	2.6%	2,491	667	26.8%	4.5%	17,940	17,266	6.9x	25.9x	23.3x	35.3x	31.6x	(1.0x)
Hexcel	USD	72.08	91%	(2%)	0.8%	1,987	406	20.4%	11.6%	6,178	6,670	3.4x	16.4x	13.7x	32.3x	24.2x	1.2x
Ingevity	USD	47.40	63%	0%	n.a.	1,451	379	26.1%	(4.5%)	1,747	2,925	2.0x	7.7x	6.6x	13.1x	9.5x	3.3x
Innospec	USD	127.11	99%	3%	1.1%	2,017	244	12.1%	3.9%	3,233	3,032	1.5x	12.4x	11.5x	18.9x	17.3x	(0.8x)
Minerals Technologies	USD	74.79	99%	5%	0.5%	2,264	399	17.6%	4.5%	2,452	3,221	1.4x	8.1x	7.5x	12.7x	11.1x	1.7x
NewMarket	USD	625.86	96%	15%	n.a.	n.a.	n.a.	n.m.	n.m.	6,024	6,556	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Perimeter Solutions	USD	6.22	74%	35%	n.a.	444	165	37.3%	21.0%	906	1,520	3.4x	9.2x	8.4x	24.1x	18.0x	3.7x
Stepan	USD	88.44	85%	(6%)	1.7%	2,374	242	10.2%	5.5%	1,995	2,519	1.1x	10.4x	8.4x	35.0x	19.2x	2.2x
Venator	USD	887.50	2%	(38%)	n.a.	n.a.	n.a.	n.m.	n.m.	697	1,532	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Mean			89%	10%	1.4%			24.9%	7.3%			3.1x	12.9x	11.7x	23.0x	19.1x	1.8x
Median			95%	5%	1.1%			23.9%	4.7%			2.7x	9.7x	8.9x	21.5x	17.6x	1.9x

Synthetic Biology

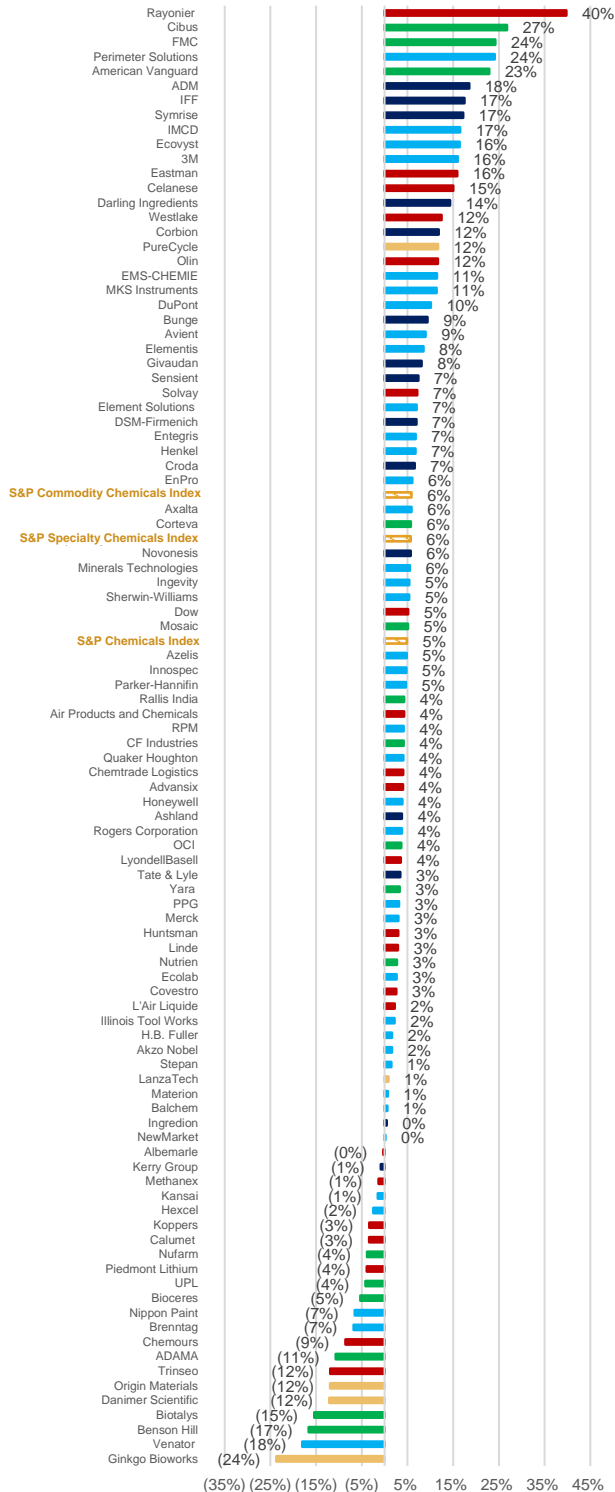
Company	Local Currency	Local Price as of 22-Mar-2024	% of 52 week high	Price Return YTD	Dividend Yield	Sales 2024E	EBITDA 2024E	EBITDA Margin 2024E	Sales CAGR 2023E-2025E	Equity Value	Enterprise Value	EV/Sales 2024E	EV/EBITDA 2024E	2025E	Price/Earnings 2024E	2025E	Net Leverage 2024E
SynBio																	
Ginkgo Bioworks	USD	1.07	42%	(37%)	n.a.	224	(387)	n.m.	11.1%	2,491	1,543	6.9x	n.m.	n.m.	n.m.	n.m.	2.5x
LanzaTech	USD	3.01	35%	(40%)	n.a.	94	(63)	n.m.	63.7%	629	500	5.3x	n.m.	n.m.	n.m.	n.m.	1.9x
Mean			38%	(38%)	NA			NA	37.4%			6.1x	NA	NA	NA	NA	2.2x
Median			38%	(38%)	NA			NA	37.4%			6.1x	NA	NA	NA	NA	2.2x

Appendix

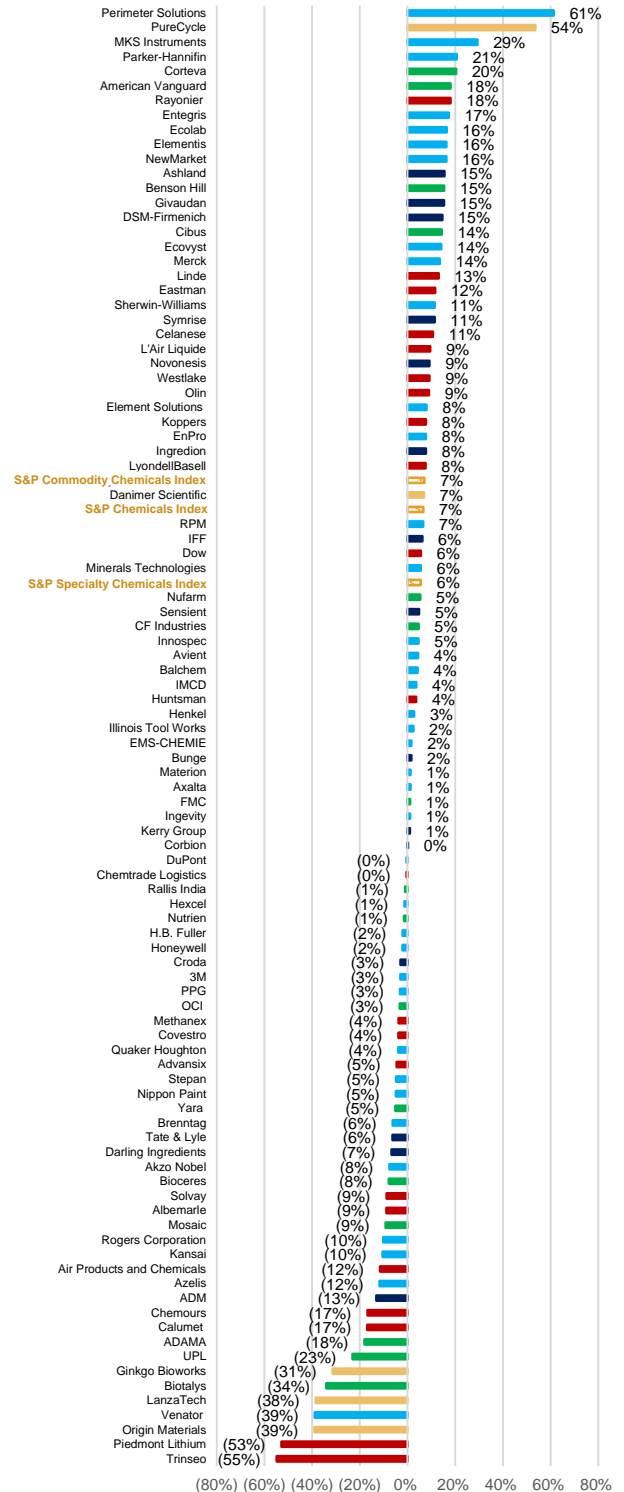
Advanced Materials and Chemicals

Share Price Performance

1 Month



Year-to-Date



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

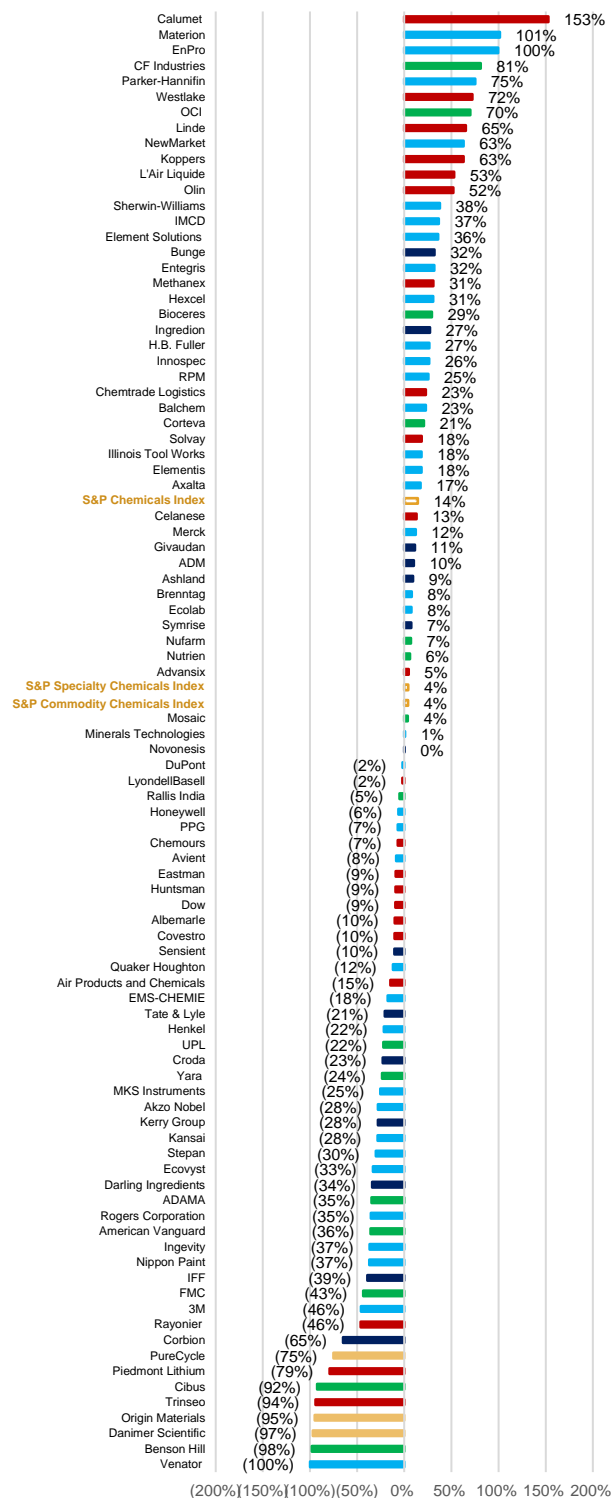
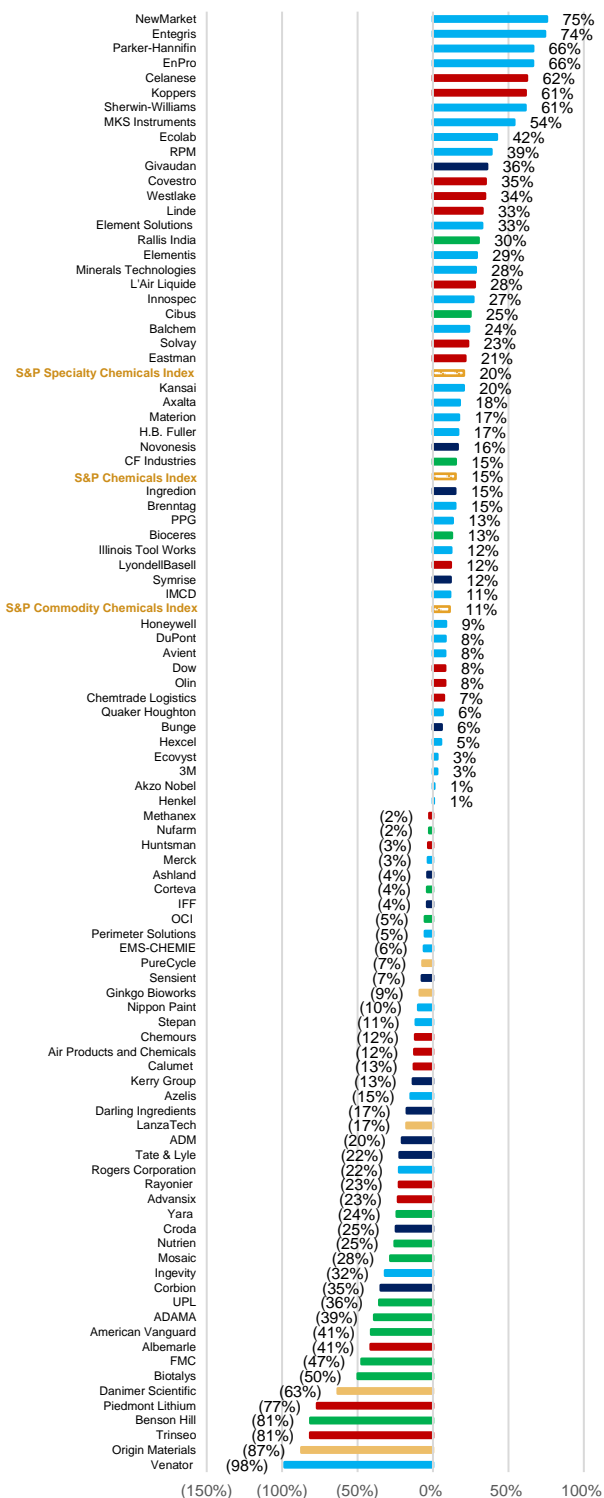
Source: Factset as of March 28th, 2024, third-party providers.

Advanced Materials and Chemicals

Share Price Performance

1 Year

3 Years



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

Source: Factset as of March 28th, 2024, third-party providers.

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