

ISSUE 12  
April 2018

# theValenceGroup Chemicals M&A Review

## Highlights

- Chemicals M&A remains strong and the outlook for 2018 continues to be robust as company profits stay high
- Number of quality M&A targets decreasing as consolidation gathers speed and more businesses being divested in H1 2018
- \$12.5bn Akzo Specialty Chemicals divestment likely to see the creation of a new large European chemical champion
- New US shale gas cracker investment could be impacted by the recent global focus on plastics recycling
- The Valence Group 4<sup>th</sup> Chemicals M&A Conference to be held on October 30<sup>th</sup>, 2018

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**THE CARLYLE GROUP**

has agreed to acquire the  
Specialty Chemicals business of

**AkzoNobel**

The Valence Group acted as  
Financial Advisor to Carlyle

**US SILICA**

has agreed to acquire

**Ep Minerals**

a portfolio company of

**GOLDEN GATE CAPITAL**

The Valence Group issued a  
Fairness Opinion to the Board  
of Directors of U.S. Silica

**SK CAPITAL**

has acquired the Fire Safety and  
Oil Additives businesses of

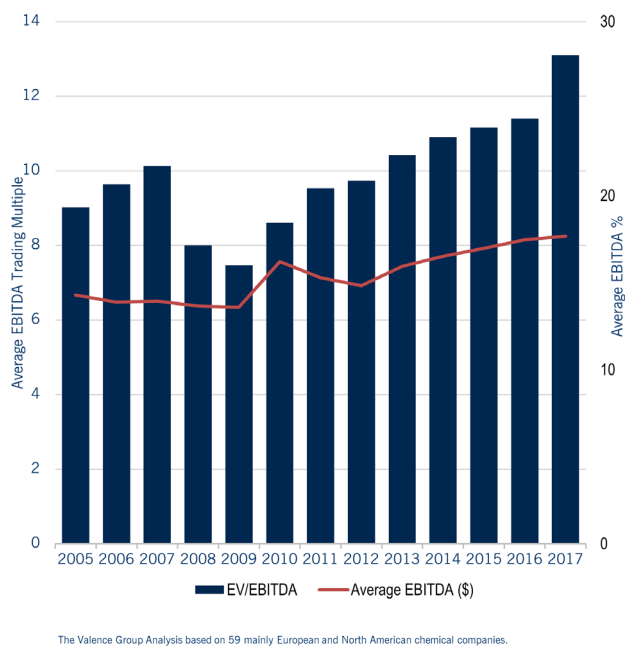
**AICL**

The Valence Group acted as  
Financial Advisor to SK Capital

## Chemicals M&A 2018 Outlook

Although 2017 was obviously a strong year for chemicals acquisitions with a range of deals being agreed such as BASF-Solvay Polyamide, SK Capital-ICL Fire Safety, HB Fuller-Royal Adhesives and Nova-Williams (Cracker), the larger question is, how long can the chemicals M&A market remain so robust? As can be seen in Figure 1, average trading multiples reached an all-time high in 2017, driven by a combination of factors such as the strength of global stock markets and the robust performance of traded chemical companies.

Figure 1: Chemical Company Trading Multiples and Profits

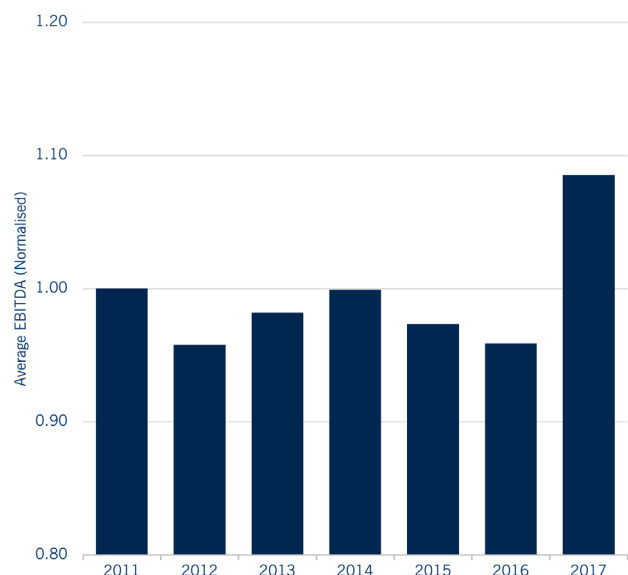


Indeed, chemical company profits have continued to grow at the vast majority of companies, with only those in upstream commodities and base polymers bucking the trend due to raw

material price changes. In US\$ terms, total overall profits for chemical companies have climbed steadily since 2012. This profit growth has to a large extent been responsible for the rise in trading multiples across chemical companies, although in 2017 valuations appear to have expanded beyond growth in profits. Whether this is sustainable will depend largely on future corporate profits, the level of M&A demand and, of course, the wider economic outlook.

However, looking at average corporate profits can also be misleading and closer examination reveals that the much of the growth of profits in 2017 came from more “focused chemical companies” as shown in Figure 2.

Figure 2: Focused Chemical Company Profits



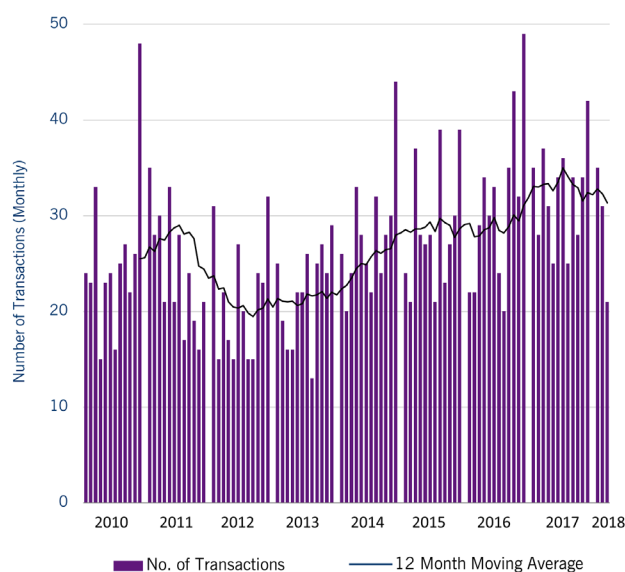
There was a relative boom in profitability in some sectors such as lithium and speciality inorganics, electronic chemicals, additives and food/personal care related products. This was largely responsible for much of the uplift in company profits and the strong rise in valuations. Additionally, M&A continued in many of these and other speciality sectors, consequently much of the increase in trading multiples was effectively driven by sector consolidation and specific sectors' profit outperformance. With a strong M&A pipeline, global GDP growth at a 7 year high and continued consolidation, there is little evidence that chemical industry profits will soften this year. Therefore our forecast for 2018 is that valuations are expected to remain at close to 2016/17 levels despite recent market volatility. Furthermore, as many of the growth sectors continue to increase profits, and deal flow continues apace, valuations could remain at the current levels for some time (notwithstanding any impacts from 'trade wars').

Interestingly, higher valuation levels have not dampened M&A volumes in chemicals (Figure 3) and we would expect transaction levels in 2018 to actually expand albeit only marginally. The scarcity of acquisition targets has led to a supply/demand mismatch with companies ever keener to acquire higher quality more downstream or speciality/performance chemicals businesses. Private equity companies have significant financial fire power and more Middle Eastern and Asian buyers are also keen to acquire. The most recent deals of 2018 demonstrate the strength of demand:

- Sabic - Clariant
- Carlyle - Akzo Specialty Chemicals
- Givauden - Naturex

Consequently, with so many factors underpinning chemicals M&A, our overall forecast for 2018 is actually an increase in chemical company M&A deal volume with little if any change in valuation levels across the industry.

Figure 3: Monthly Chemicals M&A Volumes



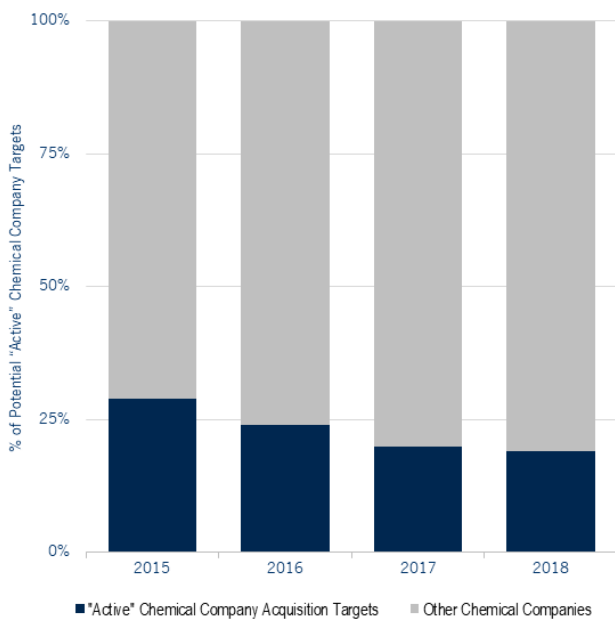
### Chemicals M&A “Active” Target Index

As noted above, another factor adding impetus to the market is the need to acquire more downstream performance and specialty chemicals. Maintaining a position as the industry consolidates and increasing competitive barriers to entry are vital to long term survival for many chemical companies.

One internal measure used within The Valence Group is termed the “Active” Target Index and is defined by the number of c. \$1bn+ companies and businesses potentially for sale (e.g. owned by financial sponsors or being targeted actively by possible buyers). The list of companies is predominantly comprised of higher value companies in the speciality/performance chemicals area. Despite the rather non-scientific nature of the index, it has proved to be a valuable guide to forecasting chemicals transactions on a yearly basis.

A disconcerting trend (from a buyers perspective), as shown in Figure 4, is that the number of available targets is declining to a level whereby there are now less than c. 25 'active' target companies. Although the number of targets can also rise again as companies decide to IPO, split or divest segments, this trend and lack of available high quality M&A opportunities clearly adds to supply/demand imbalance of chemicals M&A, thereby maintaining current valuation levels.

**Figure 4: Chemicals M&A "Active" Target Index**



Based on internal Valence Group analysis on chemical companies with c. EV > \$1bn 2018 as of 1/04/2018 and including Sabic-Clariant and Carlyle-Akzo Specialty Chemicals

The outlook for 2018 is for several larger acquisitions, especially as more financial sponsors divest businesses while public transactions are also likely. Therefore with decreasing target availability, the M&A market will largely be driven by sector consolidation as larger companies or financial sponsors continue to acquire more specialty/performance chemicals.

### Akzo Specialty Chemicals

The Akzo Specialty Chemicals divestment to Carlyle could be one of the most defining transactions of European chemicals. Unlike many other recent large chemicals deals, Akzo Specialty Chemicals could be regarded as a "deconsolidation" where the end result is the creation of one or more standalone chemical companies. As noted above and in previous Newsletters, most other chemical industry transactions either involved divestment of upstream chemicals or intermediates while more specialty/performance chemicals were acquired as part of a consolidation strategy. Akzo Specialty Chemicals could be totally different.

The portfolio consists of five business units each of which has some but restricted integration (Figure 5). Additionally, some segments within each business unit could also be regarded as having limited overlap. This opens up several options for the future of the business. A conventional private equity "buy, build and IPO" strategy would create a new European chemical company powerhouse with multiple growth avenues. However, a "buy and build" across business unit lines (or combinations of business units) could create two or more new powerful chemical companies encompassing product areas from chlorine through to more speciality additives. Any or all of these businesses would be leaders in their sectors.

With a relatively diverse portfolio built essentially from the ICI Specialities and Akzo Chemicals, several options exist for the business when run independently from the larger coatings business. Certainly, with further investment in growth products, expansion

across geographies and even the option of becoming a consolidator across parts of the chemical industry, there is scope for the business to transform into several Dutch-global powerhouse chemical companies. No doubt some streamlining of the businesses will also be involved.

The success of the standalone business will be a benchmark for transformation of the chemical industry. Larger chemical companies or chemical businesses within larger industrial portfolios could view the Akzo

Specialty Chemicals divestment as a reference and catalyst for further separation and the creation of more focused chemical companies. As shown in the last section, company performance, stock markets and shareholders all strongly suggest that narrower product or end market focus result in more successful chemical companies. Akzo and Dow/DuPont could start a new wave of chemical industry transformation.

The Valence Group acted as lead advisor to Carlyle on the acquisition of Akzo Specialty Chemicals

Figure 5: Akzo Specialty Chemicals Portfolio

Akzo Specialty Chemicals and Portfolio	Key Products	Description
€10.1bn EV	Industrial Chemistry	<ul style="list-style-type: none"> <li>Chlor-Alkali (Salt, Chlorine &amp; Chloromethanes)</li> <li>Monochloroacetic acid</li> </ul>
	Surface Chemistry	<ul style="list-style-type: none"> <li>Surfactants, Personal Care and Special Polymers</li> </ul>
€5bn Revenue	Pulp and Performance Chemicals	<ul style="list-style-type: none"> <li>Performance Chemicals</li> </ul>
		<ul style="list-style-type: none"> <li>Sodium Chlorate</li> </ul>
		<ul style="list-style-type: none"> <li>Hydrogen Peroxide</li> </ul>
€1bn EBITDA	Polymer Chemistry	<ul style="list-style-type: none"> <li>Organic Peroxides and Additives</li> </ul>
		<ul style="list-style-type: none"> <li>Metal Alkyls</li> </ul>
21 Businesses	Ethylene and Sulfur Derivatives	<ul style="list-style-type: none"> <li>Ethylene Amines &amp; Chelates</li> </ul>
		<ul style="list-style-type: none"> <li>Sulphur &amp; Polysulphides</li> </ul>
		<ul style="list-style-type: none"> <li>Re-Dispersable Polymer Powders</li> </ul>
		<ul style="list-style-type: none"> <li>Cellulosics</li> </ul>
67 Sites		<ul style="list-style-type: none"> <li>Mixed portfolio of intermediate and high performance products</li> <li>Strong growth across key platforms</li> <li>Niche and high growth position in more speciality products</li> <li>Integrated across amine chain</li> </ul>

### Sector Review – Polymer Packaging

For a number of years packaging has been the main driver of demand for polymers, accounting for c. 40% of total global resin demand. The sector has been growing at c. 4% CAGR, dominated by the food & beverage sector, and driven by population growth, expanding consumer spending in developing markets, increased demand for convenience foods and, in more recent years, the boom in internet shopping. These trends will continue to drive demand, with the food & beverage sector in particular increasing by as much as 20% by 2021.

However, as concerns regarding the environmental impact of plastics are building momentum, previous assumptions on continued polymer demand are now being challenged, as governments, consumers, retailers and FMCG companies all increasingly taking action to address plastics waste.

A report presented by the Ellen MacArthur Foundation, The New Plastics Economy showed that an estimated 8.3bn metric tonnes of plastic has been produced over the past 60 years. Of this, nearly 80% has gone to landfill or is present in the environment and less than 10% has been recycled. If current production and waste management trends continue, c. 12bn tonnes of plastic waste will be in landfills or in the natural environment by 2050.

The growing recognition of the scale of plastic waste is triggering action across the world. Industry leaders from the plastic-packaging supply chain have committed to a three-year initiative, guided by circular economy principles. The action plan calls for 70% of plastic packaging to be reused and recycled globally, up from today's recycling rate of 14%. The remaining 30% of plastic packaging needs fundamental redesign and innovation.

Increasingly public bodies, policy makers and Governments are laying out plans to address the waste challenge. One of the most high profile of these plans was the release of the EU's Plastics Strategy: all plastics packaging must be recyclable, compostable or reusable by 2030 and recycling rates must almost double.

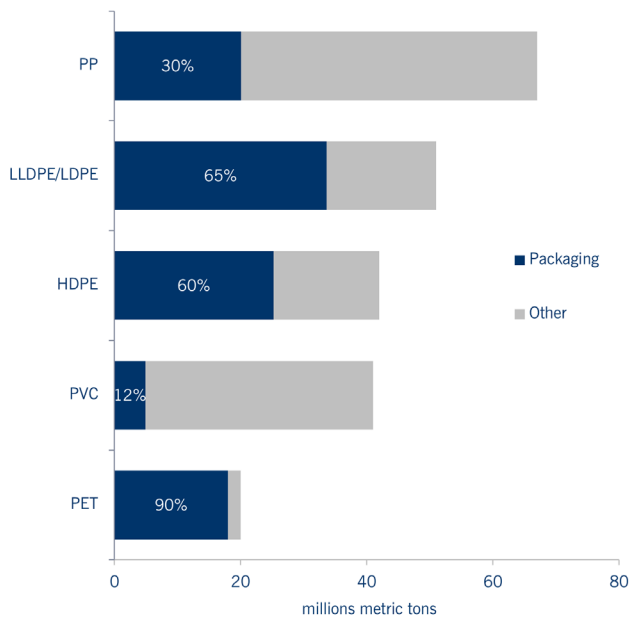
Therefore current assumptions of plastic packaging growth are likely to be impacted by restrictions being brought in to address the challenge of plastics waste. Polymer volume growth will be constrained by a combination of:

- Increased use of recycled resin displacing virgin resin
- Reduced consumption of single use plastic packaging e.g. bottled water, straws, cutlery etc.
- Reduced use of packaging by retailers especially on food items, especially films
- Shift to alternative materials e.g. paper vs. plastic film, reusable glass bottles for milk
- Continued lightweighting and downgauging of existing packaging

While some industry figures see the targets as overly ambitious, it seems inevitable that polymer demand will be impacted by changing attitudes to plastics, but the question remains by how much?

Polyethylene resins will see the largest impact, as demand is dominated by the packaging sector, accounting for c. 60% of consumption going into production of films and bottles (Figure 6). While current forecasts for PE growth in Europe to 2030 are relatively modest at c. 1 % CAGR, initial analysis suggests that the impact of sustainability initiatives could see growth stagnating or declining to c. -3% CAGR for some grades. What this means in terms of potential lost demand is that cumulative PE volumes could be lower by c. 10 to 15% equivalent to c. 15m metric tonnes in Europe alone.

**Figure 6: Polymers Consumption in Packaging**

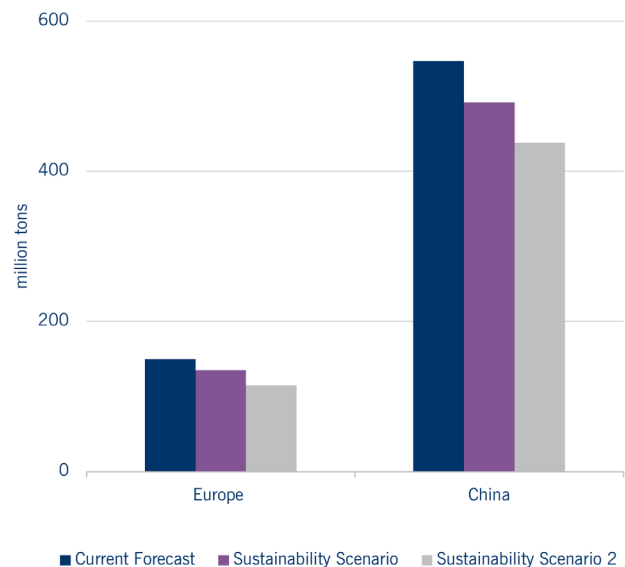


However, the scale of demand in markets such as China is eclipsing changes happening in Europe, although governments in developing markets are also increasingly focusing on the impact of plastic waste, introducing their own restrictions. China shows increasing commitments to the environment and health, with a ban on imports of scrap or recycled polymers, increasing investment in domestic recycling facilities and introducing initiatives such as mandatory garbage sorting enforced with fines and credits. If demand in China was impacted by similar rates as assumed for Europe, up to 100m metric tonnes of plastic demand could be lost (Figure 7).

While it is still unclear how much polymer demand will be impacted, it is evident that forecasting packaging growth will be difficult. Indeed, with huge shifts in public perception of the use of plastics, demand scenarios could be dramatically

lower than currently envisioned. This would radically alter the economics of building new shale gas-based crackers in the US, especially those planned for beyond 2020. Shale gas has delivered a substantial advantage to the US chemical industry but the nature of that benefit will need to change in the next decade as the world re-adjusts to less plastics and packaging. Current scenarios of never-ending growth of plastics are unrealistic.

**Figure 7: Polyethylene Cumulative Demand (2019-30)**



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# theValenceGroup

The Valence Group is a specialist investment bank offering M&A advisory services exclusively to companies and investors in the chemicals, materials and related sectors.

The Valence Group team includes a unique combination of professionals with backgrounds in investment banking, strategic consulting and senior management within the chemicals and materials industries, all focused exclusively on providing M&A advisory services to the chemicals and materials sector.

The firm's offices are located in New York and London.



a portfolio company of



**GOLDEN GATE CAPITAL**  
has acquired the bleaching clay & mineral absorbents business of



**BASF**  
The Chemical Company  
The Valence Group acted as advisor to Golden Gate



**ARCHROMA**  
LIFE ENHANCED  
a portfolio company of



**SK CAPITAL**  
has been recapitalized  
The Valence Group issued a fairness opinion to SK Capital



**Quaker**  
has agreed to acquire



**HOUGHTON**  
Fluid Partnerships Making a World of Difference  
The Valence Group provided a fairness opinion to the Board of Directors of Quaker Chemical



**NMC**  
NEW MOUNTAIN CAPITAL LLC  
has partnered with



**Gelest**  
The Valence Group acted as financial advisor to New Mountain Capital



**Niacet**  
has been sold to



**SK CAPITAL**  
The Valence Group acted as financial advisor to Niacet



**canexus**  
has agreed to be acquired by



**CHEMTRADE**  
The Valence Group acted as financial advisor to Canexus



**EVONIK**  
INDUSTRIES  
is acquiring the Silica business of



**HUBER**  
The Valence Group acted as financial advisor to Evonik



**ROCKWOOD** **THEBE**  
INVESTMENT CORPORATION  
and management are selling



**Safripol**  
preferred polymer partner  
to



**KAP**  
The Valence Group acted as financial advisor to Safripol



**EVONIK**  
INDUSTRIES  
is acquiring the Performance Materials Business of



**AIR PRODUCTS**  
The Valence Group acted as financial advisor to Evonik



**INEOS**  
has sold its expandable polystyrene business to



**synthos**  
chemical innovations  
The Valence Group acted as financial advisor to INEOS



**eurazeo**  
in partnership with



**MERIEUX** **ARDIAN**  
DEVELOPPEMENT  
has acquired



**novacap**  
from

**ARDIAN**  
The Valence Group acted as financial advisor to Eurazeo

**Arsenal** | Capital Partners  
has acquired



**Pacific Urethanes**  
Innovative Polyurethane Solutions  
The Valence Group acted as financial advisor to Arsenal Capital

  
SPECIALTY COATING SYSTEMS™


a portfolio company of

 BERWIND


has been sold to



The Valence Group acted as financial advisor to Berwind

 nubiola  
our passion your colors

has been sold to

 FERRO®

The Valence Group acted as financial advisor to the shareholders of Nubiola Group

Arsenal | Capital Partners  
has sold

 ROYAL  
ADHESIVES & SEALANTS

to

 AMERICAN SECURITIES

The Valence Group acted as financial advisor to Arsenal Capital

 INEOS SOLVAY  
THE WORD FOR CHEMICALS asking more from chemistry®

has sold certain chlorovinyls businesses for INOVYN, their PVC JV, to

 INTERNATIONAL CHEMICAL INVESTORS

The Valence Group acted as M&A advisor to INEOS and Solvay

 DSM

has sold its 65% interest in its Polymer Intermediates and Composite Resins businesses to

 CVC  
Capital Partners

The Valence Group acted as financial advisor to DSM

 Dow

has sold its Sodium Borohydride business to

 Vertellus™

a portfolio company of

 WIND POINT PARTNERS

The Valence Group acted as financial advisor to Dow Chemical

 cbpe  
capital

has sold

 Warwick  
Chemicals

to

 Lubrizol

The Valence Group acted as financial advisor to CBPE Capital

 ACCELLA  
PERFORMANCE MATERIALS

a portfolio company of

Arsenal | Capital Partners

has sold its plastisols business to

 PolyOne™

The Valence Group acted as financial advisor to Accella/Arsenal

 HSC CORPORATION  
(Zhangjiagang, China)

has been sold to

 CYG  
ChangYuan Group  
(Shenzen, China)


The Valence Group acted as financial advisor to the shareholders of HSC Corporation

 Permira

has acquired

 CABB

from

 Bridgepoint

The Valence Group acted as financial advisor to Permira

 TESSENDERLO  
GROUP

has sold its Compounds Business to

 MITSUBISHI  
CHEMICAL

The Valence Group acted as financial advisor to Tessenderlo

DSM  ExxonMobil  
Chemical

has sold

 DEXPLASTOMERS  
A DSM/EXXONMOBIL CHEMICAL JOINT VENTURE

to

 BOREALIS

The Valence Group acted as financial advisor to DSM and ExxonMobil

Arsenal | Capital Partners  
and

 FOSUN

have sold

 NOVOLYTE  
technologies

to

 BASF  
The Chemical Company

The Valence Group acted as financial advisor to Arsenal capital

 Solutia  
Ingenuity  
Productivity  
Performance

has been sold to

 EASTMAN

The Valence Group acted as independent advisor to the Board of Directors of Solutia

 PolyOne™

has acquired

 ColorMatrix

from

 Andax  
Group

The Valence Group acted as financial advisor to PolyOne and issued a Fairness Opinion to PolyOne's Board of Directors

 ARKEMA  
INNOVATIVE CHEMISTRY

has sold its  
Tin Stabilizer Business to

 pmc™

The Valence Group acted as financial advisor to Arkema