The ICIS Top M&A

Our inaugural listing of the ICIS Top Mergers & Acquisitions provides key information on all the notable chemical transactions worldwide

JOSEPH CHANG NEW YORK

e are pleased to bring you the first instalment of the ICIS Top Mergers & Acquisitions (M&A), an annual listing of the important deals in the global chemical sector – changes in control that could impact your supply chains.

It isn't easy keeping track of all the changes in the chemical industry, especially as the years go by. Once there were companies such as ICI, Arco Chemical, Quantum Chemical, Ciba Specialty Chemicals, Hercules and ISP – mow part of other entities. In today's M&A market, it's less about the big takeovers, and more about selling off pieces of portfolios.

In this issue we attempt to cover all the notable chemical transactions completed in 2013. This include deals covered by ICIS, as well as some select additions. Deal prices are included where disclosed, along with sales of the target business. Currencies are converted to US dollars based on exchange rates at the end of 2013.

On a geographic basis, we track the buyer headquarters (HQ) as well as that of the seller. In the listing, we exclude fertilizers as well as industrial gases, yet include packaging and chemical distribution. Private equity is the emerging story for chemical M&A in 2014. In our 2013 listing of completed deals, 10 out of 98 transactions involved private equity buyers. A preliminary count so far in 2014 has private equity buyers in 12 out of 48 deals.

There is no perfect M&A listing but our goal is to bring you those deals that are most relevant to you as buyers and sellers of chemicals, analysts and senior executives.

We strive to continually refine our process in tracking chemical M&A, adjusting information and data to suit your needs. For this, we welcome your feedback!



Top chemical deals

We break down the sector's major deals in 2013 by close date, price paid and sales of the target asset. Hot areas for M&A include oilfield chemicals and water treatment

ICIS TOP M	ERGERS & ACQUI	SITIONS 2013 – MAII	N LISTING B <u>y C</u>	LOSE DATE	. <u> </u>		
Completed	Buyer	Target	Seller	Price	Sales (target)	Countries (buyer/target)	Businesses
30-Dec-13	Rockwool Group	BASF Wall Systems	BASF	-	-	Denmark/ Germany	Facade insulation and finishing systems
30-Dec-13	Private investors	Plastik Uzlovaya	SIBUR	Rb 575m (\$17.5m)	-	Russia/Russia	Styrene, expandable polystyrene (EPS), acrylonitrile butadiene styrene (ABS)
11-Dec-13	Bauminas Quimica	Kemira WaterSolutions Brazil	Kemira	-	\$68m	Brazil/Finland	Iron and aluminium coagulants
10-Dec-13	Calumet Specialty Products Partners	Bel-Ray	-	-	-	US/US	Lubricating oils and greases
10-Dec-13	Elekeiroz	Oxo-gas plant	Air Products	R70m (\$29.8m)	-	Brazil/Brazil	Oxo-gas plant in Bahia, Brazil, to produce butanol, octanol and 2-ethyl hexanoic acid
10-Dec-13	Brenntag	Inorganics distribution business	Kemira	-	€15m (\$20.7m)	Germany/ Denmark	Chemical distribution - hydrochloric acid, sulphuric acid and caustic soda in Denmark
09-Dec-13	Oman Oil Company	Oxea	Advent International	-	€1.5bn (\$2.07bn)	Oman/Germany	Oxo alcohols and products
06-Dec-13	Mason Wells	Rigid medical packaging unit	Sealed Air	\$125m	\$100m	US/US	Rigid medical packaging
04-Dec-13	Saint-Gobain	LS Kunststofftechnologie	-	-	-	France/Germany	Polymer components for automotive, medical and industrial
03-Dec-13	Makhteshim Agan	Agrovita	-	-	-	Israel/Slovakia	Distribution of crop protection products
03-Dec-13	A. Schulman	Network Polymers	-	\$49.5m	\$65.2m	US/US	Plastics compounding
03-Dec-13	Nexeo Solutions	Chemical Specialists and Development (CSD-Startex)	-	-	\$205.5m	US/US	Chemical distribution
02-Dec-13	W.R. Grace	Polypropylene catalysts unit	Dow Chemical	\$500m	-	US/US	Polypropylene (PP) licensing and catalysts, UNIPOL PP process technology
Dec-13	International Chemical Investors Group	Allessa	-	-	-	Germany/ Germany	Fine chemicals
Dec-13	Ecolab	Purate	AkzoNobel	-	\$23m	US/Netherlands	Water treatment
22-Nov-13	Wembley Acquisitions	Nylon Corporation of America	-	-	\$40m	US/US	Nylon 6 engineering resins
18-Nov-13	Cabot	NHUMO (60% stake)	Grupo Kuo	\$105m	-	US/Mexico	Carbon black
31-0ct-13	Solvay	Chemlogics	-	\$1.345bn	\$500m	Belgium/US	Oilfield chemicals
31-0ct-13	BASF	Verenium	-	\$62m	-	Germany/US	Enzyme development
31-0ct-13	Grand Astor	China PS business	Chevron Phillips Chemical	-		China/US	Polystyrene (PS)
09-0ct-13	Aquafil Group	Nylon 6 carpet yarns unit	Domo Chemicals	-	€50m (\$68.8m)	Italy/Germany	Nylon 6 carpet yarns
08-0ct-13	INVISTA	Specialty polyester products unit	ADVANSA	-	-	US/Netherlands	Specialty polyester products
08-0ct-13	Albemarle	Cambridge Chemical	-	-	-	US/UK	Electronic chemicals and materials
08-0ct-13	Brenntag	Chemical distribution unit	Zytex Group	€10.2m (\$14.0m)	-	Germany/India	Chemical distribution – food ingredients, enzymes
01-0ct-13	Sika	Building adhesives unit	AkzoNobel	€260m (\$358m)	Swfr228m (\$256m)	Switzerland/ Netherlands	Building adhesives
01-0ct-13	KODA Distribution	Specialty Professional Products (SPP)	-	-	-	US/US	Specialty chemicals distribution - insect control, crop protection
01-0ct-13	ALTANA	Clay-based additives unit	Rockwood Holdings	\$635m	\$191m	Germany/US	Clay-based additives for coatings, oil and gas drilling fluids, inks, household care products

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					Sales	Countries	
Completed)1-Oct-13	Buyer Kemira	Target 3F Chimica	Seller -	Price €85m (\$117m)	(target) €70-75m (\$100m)	(buyer/target) Finland/Italy	Businesses Polyacrylamide (PAM) plastics
1-0ct-13	Urea Casale	Melamine high- pressure process technology	Borealis	-	-	Switzerland/ Austria	Melamine high-pressure process technology
1-0ct-13	SK Capital Partners	Textile, paper and emulsions units	Clariant	Swfr 425m (\$477m)	\$1.3bn	US/Switzerland	Textile specialities, paper solutions and emulsion products businesses
1-0ct-13	Lion Idemitsu Composites	PPS resins unit	Idemitsu Kosan	-	-	Japan/Japan	Polyphenylene sulfide (PPS) resin
0-Sep-13	Clariant	Organic pigments	Jiangsu Multicolor Fine Chemical	-		Switzerland/ China	Organic pigments
80-Sep-13	Ravago	Europe EPS business	Styron	-	-	Belgium/US	Expandable polystyrene (EPS)
80-Sep-13	Degremont	Industrial Water Management France	BASF	-	-	Germany/France	Water treatment chemicals and service
6-Sep-13	Air Liquide	Voltaix	-	-	-	France/US	Electronics materials
23-Sep-13	Melrob Group	Eurolabs	-	-	-	UK/UK	Chemical distribution – organics and intermediates to the pharmaceutical, agrochemical and specialty chemicals sectors
.9-Sep-13	Kemira	Soto Industries				Finland/Canada	Specialty chemicals and services for the pulp and paper industry
.6-Sep-13	Sherwin-Williams	US, Canada paints and coatings unit	Comex	\$90m	-	US/Mexico	Paints and coatings
.3-Sep-13	LANXESS	Phosphorus chemicals unit	Thermphos International	-		Germany/ Netherlands	Phosphorus pentoxide and polyphosphoric acid business in France
2-Sep-13	H2 Equity Partners		Tessenderlo	-	£140m (\$231m)	Netherlands/UK	Polyvinyl chloride (PVC) profiles
.2-Sep-13	Sika	Texsa India	Soprema	-	Swfr 23m (\$26m) – both Texas India and Mexico	Switzerland/ France	Waterproofing membranes
5-Sep-13	IMCD	Makeni	-	-	R200m (\$85m)	Netherlands/ Brazil	Chemical distribution – specialties
4-Sep-13	Cinven	CeramTec	Rockwood	€1.49bn (\$2.05bn)	\$546.7m	US/Germany	High-performance advanced ceramics materials and products
3-Sep-13	Innospec	Chemsil Silicone/ Chemtec Chemical	-	-	-	UK/US	Silicone-based formulations for the personal care industry
3-Sep-13	A. Schulman	Perrite	Vita Group	\$52m	\$140m	US/UK	Thermoplastics
9-Aug-13	Huntsman	Oxid	-	\$75m	\$86m	US/US	Specialty urethane polyols
9-Aug-13	Synalloy	Color Resources	-	\$4.55m		US/US	Chemical, colorant and contract packaging tolling services
9-Aug-13	IMCD	Paceco Industrial Supplies	-	-	-	Netherlands/ Singapore	Chemical distribution – engineering an specialty plastics
1-Aug-13	Valspar	Inver Group	-	-	€160m (\$220m)	US/Italy	Industrial coatings
1-Aug-13	INEOS Barex	Polyacrylonitrile unit	Mitsui Chemicals	-	-	Switzerland/ Japan	Polyacrylonitrile (PAN)
6-Jul-13	Cathay Investments	Umeco distribution product line	Cytec Industries	£5.5m (\$9.1m)	-	UK/US	Chemical distribution – composite and process materials
0-Jul-13	Sika	JMTexsa (Mexico)	Soprema	-	Swfr 23m (\$26m) – both JMTexsa and Texsa India	Switzerland/ France	Waterproofing membranes
1-Jul-13	Serafin Group	CONICA Sports Surfaces	BASF	-	€40m (\$55m)	Germany/ Germany	Flooring systems for running tracks, ten courts and playgrounds; EPDM granules
1-Jul-13	Mitsui Chemicals	Heraeus Kulzer	-	€450m (\$620m)	€350m (\$482m)	Japan/Germany	Dental products and materials
7-Jun-13	Invest AG consortium	Lenzing Plastics (85% stake)	Lenzing	€88m (\$121m)	€109m (\$150m)	Austria/Austria	Thermoplastic films and tapes, polytetra fluoroethylene (PTFE) and acrylic fibres
L9-Jun-13	Quest Specialty Chemicals	US Chemical & Plastics	-	-	-	US/US	Automotive refinishing – paints and coatings, plastic fillers, putties, other collision repair accessories

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				LOSE DATE		On web !	
Completed	Buyer	Target	Seller	Price	Sales (target)	Countries (buyer/target)	Businesses
19-Jun-13	Mitsubishi Chemical	TPE, PVC compounding units	Tessenderlo	-	€120m (\$165m)	Japan/Belgium	Thermoplastic elastomers (TPE) and polyvinyl chloride (PVC) products for building, automotive, cabling
17-Jun-13	Sika	Everbuild	-	-	Swfr 90m (\$101m)	Switzerland/UK	Construction chemicals
14-Jun-13	Brenntag	Blue Sky Environment	-	-	A\$5.6m (\$5.0m)	Germany/ Australia	Chemical distribution - AdBlue in Australia
12-Jun-13	Domo Chemicals		Aquafil		€100m (\$138m)	Belgium/Italy	Engineering plastics
06-Jun-13	H.B. Fuller	Plexbond Quimica	-	-	\$20m	US/Brazil	Polyurethane (PU) specialties and polyester resins
06-Jun-13	BASF	Deutsche Nanoschicht	-	-	-	Germany/ Netherlands	Technologies for chemical coatings and thin films for high-temperature superconductors
03-Jun-13	Stepan	North American polyester resins unit	Bayer MaterialScience	-	\$64m	US/Germany	Polyester resins (polyols)
)3-Jun-13	KMG Chemicals	Ultra Pure Chemicals	OM Group	\$63.3m	\$93.8m	US/US	High-purity process chemicals
29-May-13	Mitsubishi Plastics	Quadrant Engineering Plastics	-	-		Japan/US	High-performance engineering plastics – ultra-high-molecular-weight (UHMW) polyethylene (PE), nylon, acetal
20-May-13	PPG Industries	Deft	-	-	-	US/US	Aerospace coatings
16-May-13	Univar	Quimicompuestos	-	-		US/Mexico	Chemical distribution - commodities in Mexico
L6-May-13	KODA Distribution Group	E.W. Kaufmann	-	-	-	US/US	Chemical distribution – coatings, adhesives sealants, elastomers (CASE) market
L5-May-13	Chemtura	DayStar Materials (50%, for full control)	UP Chemical	- ¢17Em	-	US/South Korea	High-purity metal organic precursors for the light-emitting diode (LED) market
)1-May-13)1-May-13	Westlake Chemical SK Capital	Antioxidant and UV	CertainTeed Chemtura	\$175m \$200m		US/France	Polyvinyl chloride (PVC) pipe, fittings, profiles and foundation businesses Antioxidants and UV stabilisers
52 may 20	Partners	stabilizers units	onomula	¢200m		00,00	
01-May-13	Arsenal Capital	Arnco	-	-	-	US/US	Polyurethane (PU) products
22-Apr-13	Mitsubishi Chemical		-	-	-	Japan/US	Polyvinyl chloride (PVC) compounding
L6-Apr-13	EMS Group	EFTEC (remaining 50% stake)		Swfr 60m (\$67m)	Swfr 82m (\$92m)	Switzerland/ Czech Republic	Bonding, coating, sealing and damping automotive materials
16-Apr-13	Haltermann	Petrochem Carless	HIG Capital	-	£350m (\$577m)	Germany/UK	Condensates including naphtha and kerosene, aromatic solvents, drilling fluids process oils and performance fuels
L0-Apr-13	Ecolab	Champion Technologies	-	\$2.3bn	\$1.3bn	US/US	Oilfield chemicals and services
05-Apr-13	LANXESS	PCTS Specialty Chemicals	-	-	•	Germany/ Singapore	Biocides for water-based paints
)3-Apr-13	Arkema	AEC Polymers (60% stake)	-	-	€3.5m (\$4.8m)	France/France	Structural adhesives, methacrylate glues
)3-Apr-13	Advent International	Coatings resins unit	Cytec Industries	\$1.01bh	\$1.6bn	US/US	Coating resins
)3-Apr-13	W.R. Grace	Chemind Construction Products		-		US/Australia	Waterproof coatings for commercial, residential, and civil buildings and structure
)3-Apr-13	Anichem FZC	Sasol Gulf	Sasol	-	-	UAE/South Africa	Linear alkyl benzene sulphonate (LAS) including plant in Dubai
01-Apr-13 01-Apr-13	PPG Industries Brenntag	North American architectural coatings Lubrication Services	AkzoNobel	\$1.05bn \$42m	\$1.5bn \$135m	US/Netherlands Germany/US	Architectural coatings Chemical distribution – lubricants and
28-Mar-13	Johnson Matthey	(LSi) Formox	Perstorp	-	-	UK/Sweden	chemicals for the oil and gas industry Formaldehyde technology and catalysts
L1-Mar-13	BASF	TDI unit	Ciech	-	-	Germany/Poland	Toluene diisocyanate (TDI)
Var-13	Mitsui Chemicals	KOC Solution (51% stake)	-	-	-	Japan/South Korea	Plastic optical lenses monomers
Mar-13	Clariant	Cosmetic Raw Materials (CRM) International	-	-	-	Switzerland/ France	Natural cosmetic ingredients
22-Feb-13	Osterman	Quimtec	-	-	-	US/Costa Rica	Chemical distribution – polyethylene (PE) in Central America
20-Feb-13	Elementis	Hi-Mar Specialty Chemicals	-	\$33m	\$14.5m	UK/US	Defoamers to the coatings, construction and oilfield drilling industries

ICIS TOP MERGERS & ACQUISITIONS 2013 – MAIN LISTING BY CLOSE DATE

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Completed	Buyer	Target	Seller	Price	Sales (target)	Countries (buyer/target)	Businesses
06-Feb-13	Heraeus	Solar pastes unit	Ferro	-	-	Germany/US	Conductive pastes for solar cells
04-Feb-13	BRCS Group	Chemres	-	-	-	Netherlands/ Austria	Chemical distribution
01-Feb-13	OpenGate Capital	Profialis	Tessenderlo	-	-	US/Belgium	Polyvinyl chloride (PVC) profiles
31-Jan-13	PMC Group	Polymer stabilisers, solid lubricants unit	Dow Chemical	-	-	US/US	Methyl tin stabilisers and solid lubricants for polymers
31-Jan-13	Novozymes	Bio-Products	logen	C\$67.5m (\$63.1m)	-	Denmark/Canada	Industrial enzymes
21-Jan-13	Bayer CropScience	Prophyta	-	-	-	Germany/ Germany	Microbial crop protection products
16-Jan-13	Ten Cate	Amber Composites	-	-	-	Netherlands/UK	Thermoset composite materials for the automotive and industrial markets
14-Jan-13	Croda	Innovachem	-	\$2.8m	\$1.5m	UK/US	Personal care ingredients
07-Jan-13	Golden Gate Capital	ArrMaz Custom Chemicals	Snow Phipps	-	-	US/US	Mining and fertilizer chemicals, nitrogen additives and products used in asphalt paving, plus water treatment consulting

NOTE: Excludes fertilizers, industrial gases. Currency conversion rates – based on rates on 31 December 2013: \$1 = Euro (€) 0.7263, UK pound (£) 0.6064, Canadian dollar (C\$) 1.0694, Swiss franc (Swfr) 0.8902, Brazil real (R) 2.3484, Russia rouble (Rb) 32.8228, India rupee (Rs) 61.7744

	AND ACQUISITIONS -			Salaa Ś	Countrioo	
Buyer	Target	Seller	Price, \$m	Sales, \$m (Target)	Countries (buyer/target)	Businesses
Ecolab	Champion Technologies	-	2,300	1,300	US/US	Oilfield chemicals and services
Cinven	CeramTec	Rockwood	2,050	546.7	US/Germany	Advanced ceramics
Solvay	Chemlogics	-	1,345	500	Belgium/US	Oilfield chemicals and services
PPG Industries	North American architectural coatings unit	AkzoNobel	1,050	1,500	US/Netherlands	Architectural coatings
Advent International	Coatings resins unit	Cytec Industries	1,010	-	US/US	Coating resins
ALTANA	Clay-based additives unit	Rockwood Holdings	635	191	Germany/US	Clay-based additives
Mitsui Chemicals	Heraeus Kulzer	-	620	482	Japan/Germany	Dental materials
W.R. Grace	PP catalysts unit	Dow Chemical	500	-	US/US	PP licensing and catalysts
SK Capital Partners	Textile, paper and emulsions units	Clariant	477	1,300	US/Switzerland	Textile and paper chemicals, emulsions
Sika	Building adhesives unit	AkzoNobel	358	256	Switzerland/Netherlands	Building adhesives
SK Capital Partners	Antioxidant and UV stabilizers units	Chemtura	200	-	US/US	Antioxidants, UV stabilisers
Westlake Chemical	PVC products unit	CertainTeed	175	-	US/France	PVC pipe, fittings, profiles
Mason Wells	Rigid medical packaging	Sealed Air	125	100	US/US	Rigid medical packaging
Invest AG consortium	Lenzing Plastics (85% stake)	Lenzing	121	150	Austria/Austria	Thermoplastic films, PTFE, acrylic fibres
Kemira	3F Chimica	-	117	100	Finland/Italy	PAM plastics
Cabot	NHUMO (60% stake)	Grupo Kuo	105	-	US/Mexico	Carbon black
Sherwin-Williams	US, Canada paints and coatings unit	Comex	90	-	US/Mexico	Paints and coatings
Huntsman	Oxid	-	75	86	US/US	Specialty urethane polyols
EMS Group	EFTEC (remaining 50% stake)	D PLAST	67	92	Switzerland/Czech Republic	Bonding, coating, sealing and dampin auto materials
KMG Chemicals	Ultra Pure Chemicals	OM Group	63.3	93.8	US/US	High-purity process chemicals
Novozymes	Bio-Products	logen	63.1	-	Denmark/Canada	Industrial enzymes
BASF	Verenium	-	62	-	Germany/US	Enzyme development
A. Schulman	Perrite	Vita Group	52	140	US/UK	Thermoplastics
A. Schulman	Network Polymers		49.5	65.2	US/US	Plastics compounding
Brenntag	Lubrication Services (LSi)	-	42	135	Germany/US	Chemical distribution – oilfield chemica
Elementis	Hi-Mar Specialty Chemicals	-	33	14.5	UK/US	Defoamers for coatings, construction oilfield
Elekeiroz	Oxo-gas plant	Air Products	29.8	-	Brazil/Brazil	Butanol, octanol, 2-EH
Private investors	Plastik Uzlovaya	SIBUR	17.5	-	Russia/Russia	Styrene, EPS, ABS

NOTE: Deals with disclosed values \$10m or higher. Price and sales figures have been converted to US dollars based on the exchange rates of 31 December, 2013

ICIS TOP M&A



Businesses

Coating resins

Oxo alcohols and products

Oilfield chemicals and services

Textile and paper chemicals,

Architectural coatings

Sales \$m Countries Buyer Target Seller (Target) Price, \$m (buyer/target) **Oman Oil Company** Oxea Advent International 2,070 Oman/Germany US/US Advent International Coatings resins unit Cytec Industries 1,600 1,010 **PPG Industries** North American AkzoNobel 1,500 1,050 US/Netherlands architectural coatings unit Ecolab Champion Technologies -1,300 2,300 US/US US/Switzerland **SK Capital Partners** Textile, paper and Clariant 1,300 477

ICIS TOP MERGERS AND ACQUISITIONS - BY SALES OF TARGET

ramTec emlogics raeus Kulzer ilding adhesives unit	HIG Capital Rockwood - - AkzoNobel	577 546.7 500 482	- 2,050 1,345	Germany/UK US/Germany	Condensates Advanced ceramics
emlogics raeus Kulzer ilding adhesives unit rocell	- -	500			Advanced ceramics
eraeus Kulzer ilding adhesives unit rocell	- - AkzoNobel		1,345		
ilding adhesives unit rocell	- AkzoNobel	482		Belgium/US	Oilfield chemicals and services
rocell	AkzoNobel		620	Japan/Germany	Dental materials
		256	358	Switzerland/Netherlands	Building adhesives
er Group	Tessenderlo	231	-	Netherlands/UK	PVC profiles
o. o. oup	-	220	-	US/Italy	Industrial coatings
emical Specialists d Development (CSD- artex)	-	205.5	-	US/US	Chemical distribution
ay-based additives it	Rockwood Holdings	191	635	Germany/US	Clay-based additives
E, PVC compounding its	Tessenderlo	165	-	Japan/Belgium	TPE, PVC products for building, automotive, cabling
nzing Plastics (85% ake)	Lenzing	150	121	Austria/Austria	Thermoplastic films, PTFE and acrylic fibres
rrite	Vita Group	140	52	US/UK	Thermoplastics
	Aquafil	138	-	Belgium/Italy	Engineering plastics
brication Services Si)		135	42	Germany/US	Chemical distribution - oilfield chemicals
erbuild	-	101	-	Switzerland/UK	Construction chemicals
Chimica	-	100	117	Finland/Italy	PAM plastics
gid medical packaging it	Sealed Air	100	125	US/US	Rigid medical packaging
tra Pure Chemicals	OM Group	93.8	63.3	US/US	High-purity process chemicals
TEC (remaining 50% ake)	D PLAST	92	67	Switzerland/Czech Republic	Bonding, coating, sealing and damping auto materials
id	-	86	75	US/US	Specialty urethane polyols
akeni	-	85	-	Netherlands/Brazil	Chemical distribution - specialties
e DeWolf Companies	-	70.5	-	US/US	Chemical distribution - CASE
lon 6 carpet yarns it	Domo Chemicals	68.8	-	Italy/Germany	Nylon 6 carpet yarns
mira WaterSolutions azil	Kemira	68	-	Brazil/Finland	Iron and aluminium coagulants
twork Polymers	-	65.2	49.5	US/US	Plastics compounding
	Bayer MaterialScience	64	-	US/Germany	Polyester resins (polyols)
NICA Sports Surfaces	BASF	55	-	Germany/Germany	Sports-related flooring systems
lon Corporation of nerica	-	40	-	US/US	Nylon 6 engineering resins
lTexsa (Mexico), Texsa dia	Soprema	26	-	Switzerland/France	Waterproofing membranes
rate	AkzoNobel	23	-	US/Netherlands	Water treatment
organics distribution siness	Kemira	20.7	-	Germany/Denmark	Chemical distribution - hydrochloric acid, sulphuric acid, caustic soda
exbond Quimica	-	20	-	US/Brazil	PU specialties, polyester resins.
Mar Specialty emicals	-	14.5	33	UK/US	Defoamers for coatings, construction, oilfield
ri boi gittin Talic in tin tin tin tin tin tin tin tin tin	rite rication Services) rbuild Chimica d medical packaging a Pure Chemicals EC (remaining 50% (e) d teni DeWolf Companies DeWolf Companies on 6 carpet yarns on 6 carpet yarns ina WaterSolutions zil work Polymers th American rester resins unit NICA Sports Surfaces on Corporation of erica exsa (Mexico), Texsa a ate ganics distribution iness dbond Quimica Mar Specialty micals	viteVita GroupAquafilrication Servicesrbuild-chimica-chimicaSealed Aird medical packagingSealed Aira Pure ChemicalsOM GroupEC (remaining 50% (e)D PLASTDeWolf Companies-DeWolf CompaniesDomo Chemicalson 6 carpet yarnsDomo Chemicalswork Polymers-Namerican (e)Bayer MaterialScienceNCA Sports SurfacesBASFon Corporation of ericaSoprema alateateAkzoNobelganics distribution inessKemiradate Specialty micals-	vitaVita Group140Aquafil138rication Services-135rbuild-101chimica-100d medical packagingSealed Air100d medical packagingSealed Air100a Pure ChemicalsOM Group93.8EC (remaining 50%D PLAST92d-86ceni-86DeWolf Companies-70.5DeWolf Companies-68.8n 6 carpet yarnsDomo Chemicals68.8na WaterSolutionsKemira68work Polymers-65.2n Corporation of erica-55on Corporation of erica-20ateAkzoNobel23ganics distribution inessKemira20.7fars-20fars Specialty micals-20	Vita Group 140 52 Aquafil 138 - rication Services - 135 42 rbuild - 101 - chimica - 100 117 d medical packaging Sealed Air 100 125 a Pure Chemicals OM Group 93.8 63.3 EC (remaining 50% D PLAST 92 67 d - 86 75 dereini - 85 - DeWolf Companies - 70.5 - on 6 carpet yarns Domo Chemicals 68.8 - on 6 carpet yarns Domo Chemicals 68.8 - on 6 carpet yarns Domo Chemicals 64 - on Corporation of erica Soprema 26 - on Corporation of erica Soprema 20.7 - ate AkzoNobel 20.7 -	iteVita Group14052US/UKAquafil138-Belgium/Italyrication Services ()-135 42 Germany/USrbuild-101-Switzerland/UKChimica-100117Finland/Italyd medical packagingSealed Air100125US/USa Pure ChemicalsOM Group93.863.3US/USa Pure ChemicalsOM Group93.863.3US/USEC (remaining 50%)D PLAST9267Switzerland/Czech Republicdeni-8675US/USdeni-86.8-Netherlands/BrazilDeWolf Companies-68.8-US/USand 6 carpet yarmsDomo Chemicals68.8-US/USand KerniraBayer MaterialScience64-US/USand Corporation of erica-55-Germany/GermanyullCA Sports SurfacesBASF55-US/USexes (Mexico), Texa againes distribution granicaSoprema20.7-Witzerland/Franceand carporation of erica-23-US/Netherlandsate ate papeidistributionKemira20.7-Witzerland/Denmarkate carporation of erica-20-US/Netherlandsate carporation of erica-20-US/Netherlandsate carporation of erica-20

Sales and price have been converted to US dollars based on the exchange rates of 31 December, 2013



ICIS Deal of the Year is Oman Oil/Oxea



The Oman Oil Company's acquisition of oxo-alcohols producer Oxea is a game changer for the firm, giving it a platform for global downstream expansion

NIGEL DAVIS LONDON

CIS Chemical Business has chosen Oman Oil Company's (OOC) acquisition of oxo-alcohols producer Oxea from Advent International as the "ICIS Deal of the Year" for 2013. Oxea has 1.3m tonnes of oxo products capacity and generated sales of €1.5bn (\$2.1bn) in 2012.

The acquisition is estimated to be among the largest made in chemicals last year, and is important from a strategic perspective in oil and petrochemicals. The deal marks the exit from a well performing business by one of the largest and most experienced global private equity firms and the entry into a growing downstream market by an increasingly important Middle East petrochemicals producer.

"OOC's downstream business unit looks at businesses and investments that expand our feedstock and capabilities of chemical building blocks into value chains that benefit from Oman's unique geostrategic location," said Philippe Raynaud de Fitte, executive vice president, downstream businesses at OOC, in an interview with ICIS.

"The Oxea acquisition matches perfectly our expansion plans. It strengthens our position in the global chemical sector and contributes to our long-term downstream strategy, while substantially reinforcing Oxea's growth," he added.

In making the acquisition, OOC is supporting the sultanate's "Vision 2020" economic development programme which is aimed at diversifying the Oman economy across different businesses and away from oil.

"With its international presence in Europe and North America, leading technology, efficient platform and longstanding experience in the oxo segment, Oxea will support our further expansion into the chemical sector," said H.E. Nasser bin Khamis Al Jashmi, chairman of Oman Oil Company, at the time of the deal.

"In addition, it provides adequate scope for growth in the Duqm Special Economic Zone, expected to become a major regional hub for steel industries and hydrocarbon product storage, as well as for the refining and petrochemicals sector," noted de Fitte.

INTEGRATION, EXPANSION OPPORTUNITY

It is the integration and expansion opportunity downstream for OOC that is the cornerstone of the deal. Oman is sometimes forgotten when talking about petrochemicals in the Middle East but the sultanate will become an increasingly important player in the sector. It is expected to benefit from the World Expo in Dubai in 2020 and the World Cup in Qatar in 2022.

Production capacity is increasing as these two major events approach.

"In the next decade \$15bn worth of investments are planned for the Duqm Special Economic Zone development. The Oxea acquisition is one of the steps towards creating an international industrial and business hub at Duqm and creating thousands of opportunities for local businesses to capitalise on," said de Fitte.

OOC is looking at building a refinery and petrochemical complex in Duqm in a joint venture with Abu Dhabi's International Petroleum Investment Co (IPIC).

"Our direct investment at this stage includes a large scale refinery and a massive crude storage terminal. In the near future, an oxo chemical manufacturing plant is part of the plan – it will enjoy direct access to feedstock, creating a vertically integrated supply chain. In addition, it enjoys the geo-strategic location of Duqm, which grants direct access to major trade flows towards Asia and Africa," said de Fitte.

"The refinery at Duqm will be producing large volumes of naphtha and this will provide the main feedstock to a world scale integrated chemical complex that is currently being planned. The key benefit is to create vertically integrated value chains," he added.

Also in the sultanate, Oman Refineries and Petroleum Industries Co (Orpic) is currently working on the front-end engineering and design (FEED) of a \$3.6bn integrated plastics project in Sohar that is due to be completed in 2018. The company already has aromatics and polypropylene (PP) production capacities.

The project includes an 800,000 tonne/ year mixed feed steam cracker, an 838,000 tonne/year linear low density polyethylene (LLDPE)/high density PE (HDPE) swing plant, a 215,000 tonne/year polypropylene (PP) plant; and a 46,000 tonne/year benzene unit.

Orpic is owned by the Sultanate of Oman and Oman Oil Company SAOC, a sultanate-owned company that is seeking investment opportunities in the energy sector outside Oman.

OOC's acquisition of Oxea was struck in October 2013 and completed two months later in December. HSBC served as financial advisor to OCC on the deal. Legal advisors included Vinson & Elkins, with support from Deloitte and Ernst & Young. Nexant acted as technical and commercial advisors, while Pilko & Associates participated as HSE (heatlth, safety and environment) advisor.

Apart from its takeover of Oxea, Oman Oil has a 90% stake in Oman's Salalah Methanol, a 50% stake in Oman India Fertilizer and a 50% holding in Sohar PTA/PET in the polyester chain.

PRIVATE EQUITY ROLE

The Oxea story illustrates the role that private equity continues to play in re-shaping the petrochemical industry through merg-

ers and acquisitions (M&A). As created by Advent, Oxea levers the expertise in oxo products amassed by former industry majors like Germany's Hoechst and Degussa.

"In the near future, an oxo chemical manufacturing plant is part of the plan – it will enjoy direct access to feedstock, creating a vertically integrated supply chain"

PHILIPPE RAYNAUD DE FITTE Executive vice president, downstream businesses, OOC

It was created in 2007 from businesses owned by now US-based chemicals producer Celanese and acquired for €408m by Advent International. They included a joint venture with Degussa, now Evonik.

Under Advent, the business has reportedly flourished and the product portfolio expanded towards high-margin oxo derivatives.

TECHNOLOGY ASPECTS

Those derivates are the alcohols, aldehydes and ketones vitally important in downstream chemicals and materials manufacture. They are made using a reaction called hydroformulation. The 75th anniversary of the filing of a patent for the oxo process by German chemist, Otto Roelen, then research director with Ruhrchemie was celebrated last year.

Roelen's work on hydroformulation set the stage for the development of industrialscale organometallic chemistry.

The process enabled the production of aldehydes from olefins and opened up synthetic routes to alcohols and other oxo products. The anniversary was commemorated in Germany in late September with a symposium at Oxea's Ruhrchemie plant where a plaque was unveiled.

Oxea, as created by Advent, has a broad portfolio of more than 70 oxo chemicals with operations in the Americas, Europe and Asia.

GLOBAL PLAYER

The link to Oman will aid Oxea's expansion strategy, especially in growth markets in Asia while OOC would benefit from Oxea's reach into European and North America markets. Oxea started basic engineering for a 2-ethylhexanol (2-EH) and an n-propanol unit at its production facility in Bay City, Texas, US this year. Both units are scheduled to be on stream in late 2016.

Oxea produces 2-EH in Oberhausen, Germany, and this will be its first plant in North America. It already produces n-propanol at Bay City.

The basic engineering work in the US will be used for the construction of the company's Asian oxo chemicals platform in Duqm, Oman.

About 52% of OOC's portfolio consists of local investments with the remaining being international. While the company aims to maintain a strong local presence, it is also exploring strategic international investments and partnerships in a variety of sectors, noted de Fitte.

"In a similar vein to the Oxea acquisition, future petrochemicals foreign investments will be geared towards increasing our technological footprint and leveraging this with Oman's strategic location in order to competitively engage high-growth emerging markets and complement integration of our value chains," de Fitte said.

As Advent relinquished control of Oxea, it complimented Oxea management on creating a competitive business.

"We are convinced that the strengths and objectives of OOC and Oxea are highly complementary and that both sides will benefit from the partnership," said managing director and head of Advent International's chemical practice, Ronald Ayles.

"We wish Oxea all the best as it enters into a new phase of its corporate development," he added. ■

Additional contribution from Joseph Chang







Competition is growing fierce among private equity firms

M&A competition is heating up

The outlook is for healthy activity in 2014 as the stars align for deal-making. However, mega deals are scarce, and the field of private equity buyers is getting crowded

JOSEPH CHANG NEW YORK

If the factors are lining up for a robust global mergers and acquisitions (M&A) market in chemicals – from a good supply of assets for sale, bountiful private equity capital, cheap and available financing, and rising valuations. Transactions are mostly in the mid-market, as there is little appetite for mega deals on the part of chemical companies. In the meantime, competition is growing fierce among private equity firms.

"Private equity buyers are facing more limited strategic buyer competition. Part of the reason is that the businesses being sold are not the best, and the other is that they are often not a priority for the strategic buyers," said Peter Young, president of investment bank Young & Partners. "The challenge for private equity buyers has been the level of competition from other private equity investors who are targeting chemicals, and also concerns about how they will exit down the road if the business is of limited interest to strategic buyers, and if IPOs [initial public offerings] continue to be few and far between in chemicals," he added.

Where 10 years ago, there may have been one or just be a handful of private equity firms bidding on a chemical asset, the field has become increasingly crowded. In some auctions, a dozen of these buyers have advanced to the second round, sources in the financial community noted.

While high valuations are good for sellers, some private equity buyers are feeling the pinch as multiples march higher.

"Private equity firms are interested but are feeling the higher multiples. It is tough to find

deals at attractive prices in these frothy auction situations," said Leland Harrs, managing director and head of chemicals at investment bank Houlihan Lokey.

"Private equity continues to be exceptionally aggressive, beating strategic buyers," said Mario Toukan, managing director and head of chemicals investment banking at KeyBanc Capital Markets.

In cases where there are many private equity players bidding in an auction, the ones with a focus on chemicals can gain an edge.

"Some PE firms try to dabble in chemicals, but the ones that are successful know the space. As a seller looks at the playing field where everyone has a big checkbook and cheap financing, industry expertise raises the certainty level of a close," said Toukan.

"Most sellers get a lot of comfort from buyers that know the space and that can get their arms around complex industry-specific issues. They are more likely to win the deal versus an industry agnostic buyer," he added.

Private equity firms with a strong focus on the chemical sector include Arsenal Capital Partners, SK Capital Partners, CCMP Capital Advisors and American Securities.

"Private equity is increasingly crowded and competitive, and has been evolving from a generalist model to a specialist model," said Chris Cerimele, managing director at investment bank Grace Matthews.

Recent announced deals involving private equity include Rhone Group/ASK Chemicals, Goldman Sachs, Koch/Flint Group, Open-Gate Capital/Solvay's Europe PVC compounding unit, HIG Capital/American Pacific, Clayton, Dubilier & Rice/Ashland Water Technologies, Arsenal/Danlin Industries and Arsenal/Kel-Tech.

LEVERAGE LEVELS HIGH

Availability of debt financing on good terms and at high leverage levels has been the strongest since before the financial crisis of 2008-2009, according to most investment bankers.

"Larger businesses being sold at say 10 times EBITDA [earnings before interest, tax, depreciation and amortisation] or more can currently get leverage of 6-7 times. Leverage can range from 4-7



"The challenge for private equity buyers has been the level of competition from other private equity investors who are targeting chemicals" PETER YOUNG

President, Young & Partners

times, depending on the business," said Telly Zachariades, partner at investment bank The Valence Group.

"We are back to the leverage levels we last saw in 2006

"Ten years ago, companies were building for segmentation, diversification and scale. Now the trend is just the opposite – many are looking to downsize"

MARIO TOUKAN Manging director, KeyBanc Capital Markets

and 2007 with low equity contribution requirements of 20-25%, historically low interest rates, and equity return targets which in some case can be below 20%. That is a pretty potent concoction bringing the stars in alignment for private equity," he added.

Private equity firms have a substantial amount of equity capital and the availability of debt at attractive rates has allowed them to be very competitive in the M&A marketplace as buyers, noted Young of Young & Partners.

"Lenders are allowing very high debt/EBITDA ratios for deals, and interest rates, although a bit higher than a year ago, are still very attractive. Debt covenants are also very generous in favour of the private equity buyers," Young said.

LOFTY VALUATIONS

That in no small part, is contributing to surging M&A valuations in the chemical group, as well as seller expectations of achieving those high valuations.

"Seller expectations are high, driven by cycle peak valuations in the public market. This is also linked to the financing market,' said Houlihan Lokey's Harrs.

"Seller expectations are through the roof – we've not seen them higher in 10 years. Public valuations are strong and we're seeing private equity owned businesses thinking about IPOs," said KeyBanc's Toukan.

US public valuations for chemical companies are pretty lofty at 10.7 times EBITDA, noted the banker.

So far, PQ Corp, owned by The Carlyle Group, and Trinseo (Styron), owned by Bain Capital, have filed for IPOs, aiming to raise up to \$450m and \$200m, respectively. Orion Engineered Carbons, owned by Rhone Group and Triton Capital, is also exploring an IPO, according to one banker.

"You're seeing these IPOs now because we're at the point where the chemical industry is on the upside of the cycle," said The Valence Group's Zachariades.

The public market is also in many cases valuing chemical companies at or above transaction levels, he noted.

"Public company valuations are coming in above M&A valuations and DCF [discounted cash flow – another way to value assets]. Either the public markets are predicting a much stronger outlook for the industry, or companies are currently overpriced. Either way, it's a great time to take advantage if you can," Zachariades said.

The median specialty chemical company M&A multiple in 2013 was a healthy 9.5 times EBITDA, although less than 10.4X EBITDA in 2012, noted Allan Benton, vice chairman and the head of the chemical practice at investment

bank Scott-Macon. "Good quality specialty

"Good quality specialty chemical companies with high margins, can command double-digit multiples," said Benton.



"We are back to the leverage levels we last saw in 2006 and 2007 with low equity contribution requirements of 20-25%, historically low interest rates, and equity return targets"

TELLY ZACHARIADES Partner, The Valence Group

One example is the announced sale of food and beverage ingredient systems firm Performance Chemicals & Ingredients Company (dba SensoryEffects) to Balchem for \$567m, or 10.7 times estimated 2014 EBITDA, he noted.

SPINOFFS, DUAL TRACKS

Other companies are planning tax-free spinoffs of chemical units to existing shareholders. This includes FMC splitting into two units – ag and health & nutrition, and FMC Minerals (soda ash, lithium); DuPont spinning off its performance chemicals segment (TiO2, fluoroproducts) and US forest products company Rayonier spinning off performance fibers (cellulosic specialties for applications in coatings, plastics, cosmetics and pharmaceuticals).

In some cases, companies filing for IPOs or planning spinoffs are pursuing dual-track exits, signaling that the asset would be available for sale.

"Some of these assets will probably be sold. Companies are separating to optimise value, so it is definitely possible. However, some are too big to be sold – there are just not a lot of groups looking to make big deals," said Toukan. The lack of mega deals - say \$3bn in size or larger - has been noticeably absent lately, where they had once been prominent in the mid-2000s up to the financial crisis of 2008-2009.

On the demand side, "the story is complicated", said Young of Young & Partners. "Although strategic buyers have been active, they have been somewhat selective. They are also cautious about doing very large deals."

"Ten years ago, companies were building for segmentation, diversification and scale. Now the trend is just the opposite – many are looking to downsize," KeyBanc's Toukan said.

Indeed chemical companies over the past several years have narrowed their focus, evident from major divestitures by Dow Chemical, DuPont, PPG Industries, Ashland, Rockwood, Clariant, Solvay and Chemtura.

"Many companies have been making a proactive effort to streamline their portfolios. A cleaner story can put you in a more favourable position with investors, and there is a growing sense that having multiple different businesses is not really an advantage," said Cerimele from Grace Matthews.

Look for further divestiture activity, especially from Europe-based companies. Belgium's Solvay is looking to sell its Eco Services (sulphuric acid regeneration) unit. Germany's LANXESS has a new CEO – a development which can often result in asset sales.

RISE OF THE ACTIVIST

But the rise of activist investor participation in the market has accelerated that trend.

"Now in many cases activists have come in, taken positions in companies, and are pushing them to shed non-performing or noncore assets," Cerimele added.

"Activists are more active in the chemical industry because a lot of businesses are not trading at the proper valuation," said Toukan.

On the supply side, there has been an increase in of assets for sale from chemical companies, "in a few cases under pressure from shareholder activists", said Young of Young & Partners.



"6-7 years ago people were writing off the US chemical industry... Shale gas has changed that. Chemicals was once the road less travelled. Now more people are waking up to the possibilities"

CHRIS CERIMELE Managing director, Grace Matthews Dow is in the process of carving out its chlorine and epoxy resins businesses for potential sale or partnership, and is targeting overall divestitures expected to result in pre-tax proceeds of \$4.5bn-\$6bn – revised in March from its previous target of \$3bn-\$4bn, which represents the chlorine/epoxy carve-out.

Dow has attracted the attention of activist investor Dan Loeb and his hedge fund Third Point. Loeb has publicly pushed for Dow to split its petrochemicals and

"Good quality specialty chemical companies with high margins, can command double-digit multiples" ALLAN BENTON

Vice chairman, Scott-Macon

specialty chemicals businesses. Speculation has been gaining in the investment community that Dow could separate its agricultural chemicals and seed business as well.

However, not everyone is focused on selling just yet. "There hasn't been a huge rush to the exits. Some companies want to increase EBITDA before a sale," said Houlihan Lokey's Harrs.

"They don't expect the market to deteriorate drastically and have good earnings visibility for the next 6-9 months. They are looking for a quantifiable improvement they are confident of achieving. However, some that are holding onto assets appear to be trying to time their exit to perfection," he added.

OUTLOOK 2014

Overall, the chemical M&A market is poised to see strong activity in 2014, though perhaps not as strong as in the last peak in 2011.

"Baring a significant economic or financial disruption, we will have a strong M&A market this year, but do not expect a barnburner. There is a noticeable lack of very large deals," said Young of Young & Partners.

"Even the announced Dow divestitures are only moderately large and many will not start until the third quarter. Dow is working though the carving out of the operations to be divested, which may push the deal completion dates to 2015. Further, a number of corporate restructurings are being done as spinoffs rather than M&A deals, with DuPont and FMC as examples," he added.

Young characterises the chemical M&A market as one of "a particular personality. It's like a baseball team that hits singles and doubles instead of home runs," he said, referring to the lack of mega deals. "That doesn't mean they're not winning the game."

KeyBanc's Toukan also sees a higher level of activity in 2014 with a strong start in the first quarter, but not to pre-crisis levels in terms of number of deals.

"The stars are aligning – you have corporate and private equity divestitures, cheap financing and high leverage multiples, and strong M&A valuations. All the drivers for M&A are there," he said.

"The M&A market is a factor of many levers – CEO confidence, debt availability, the cost of debt, leverage multiples, and plentiful supply of businesses to acquire. As you check off the boxes, it's hard to imagine a better environment," said The Valence Group's Zachariades.

SHALE GAS IMPACT

One of the new drivers for M&A activity in the US is shale gas. While direct investment to build or expand chemical capacity to take advantage of cheap feedstock has boomed to the tune of over \$100bn, shale gas has also opened the minds and wallets of buyers.

"Shale gas has opened people's minds to the chemical sector. Many are looking to chemicals as a way to play shale gas," said Cerimele from Grace Matthews.

Some obvious plays are oilfield chemicals and water treatment – sectors that support the production of hydrocarbons.

"Oilfield chemicals are on fire right now and the growth rates are phenomenal. M&A valuations are in the low double-digits [on EBITDA]," said KeyBanc's Toukan.

"Both financial and strategic buyers are looking to extend their presence or gain a foothold in oilfield chemicals. This is a burgeoning subsector and companies are trying to differentiate themselves with new formulations," said Houlihan Lokey's Harrs.

Arsenal Capital has been amassing assets in oilfield chemicals with acquisitions of Kel-Tech, Danlin Industries in 2014 and Flowchem (pipeline chemicals) in 2013. Calumet Specialty Products is buying Anchor Drilling Fluids for \$235m. Solvay acquired Chemlogics for in 2013 for \$1.35bn, or 10.7 times EBITDA.

Other hot areas of chemical M&A activity include water treatment, coatings, adhesives, food ingredients, plastics compounding and construction chemicals, bankers noted.

Shale gas may also be improving sentiment towards the US chemical industry in general.

"6-7 years ago people were writing off the US chemical industry. Overall manufacturing was moving offshore and there was not nearly as much investment domestically in the sector, which was viewed as having limited growth prospects," said Grace Matthews' Cerimele.

"Shale gas has changed that. Chemicals was once the road less travelled. Now more people are waking up to the possibilities," he added. ■





N&A to transform micals che

Amidst a dynamic global landscape, many chemical companies are racing to use M&A to make themselves fit for future growth and prosperity

ANTON TICKTIN VALENCE GROUP

erger and acquisition (M&A) volumes are likely to hit a three year high in 2014, with the potential of soon reaching the 2007 high point (see top graph).

Several factors are now either underpinning confidence or providing an impetus for chemicals deals: companies looking to boost revenues in often low-growth environments, strong and increasingly healthy company balance sheets, a plentiful supply of low-cost debt, shale gas, activist investors and highly competitive private equity. If that was not sufficient, all regions are now actively and simultaneously repositioning their chemicals industries and employing M&A as one of the main tools to change their portfolios.

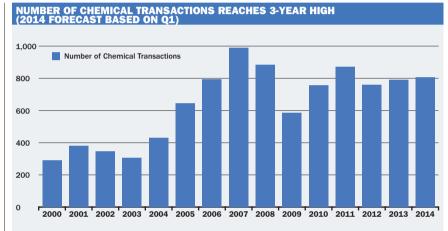
With this increasing activity, valuations will remain robust. Trading multiples are already at a 15 year high as investors believe shale gas and better economic fundamentals will combine with low interest rates.

The consequence will soon be a chemical industry almost unrecognisable from that of just a few years ago

Furthermore, transaction multiples which were more subdued, have now also started to rise above the historic average (see bottom graph). The combination of both high profitability and valuations could also result in increased transaction values.

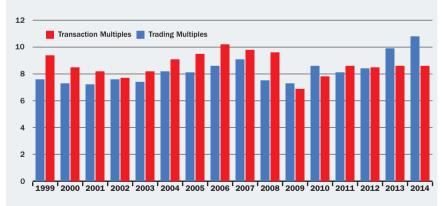
MID-TERM TRANSFORMATION

In the mid-term, the chemicals industry will continue to transform itself. Growing Asian and Middle Eastern companies are moving further into chemical intermediates beyond their initial commodity focus, forcing established chemical companies to realign their strategies and portfolios. The US chemical industry has seen companies



SOURCE: The Valence Group NOTE: Excludes deals under 310m

CHEMICAL TRADING AND TRANSACTION MULTIPLES RISE (EV/EBITDA)



SOURCE: The Valence Group NOTE: Based on the US and Europe

expanding both upstream and downstream as shale gas has offered North American companies an unexpected feedstock and energy advantage.

In reaction, European companies have realised that exiting uncompetitive commodities and intermediates and moving downstream is quickly becoming the most viable option. The consequence will soon be a chemical industry almost unrecognisable from that of just a few years ago.

Much of this transformation will be achieved through M&A. The eventual "winners" are likely to be those who are early in reshaping their portfolios by acquiring some combination of performance chemicals, feedstock advantage and more service-driven chemical companies. Areas such as food ingredients, agrochemicals, catalysts or oil and gas chemicals and of, course C2 (ethylene



chain) advantaged chemicals have all become target areas. Indeed many of these acquisitions are often so-called "step-outs", driven by the need to find growth and/or longer term competitive advantage.

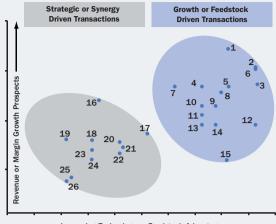
STEP-OUT DEALS

Most interestingly, a Valence Group review of acquisitions in chemicals shows these "stepout" deals are the most admired by chemical industry executives (see transactions 1-16, right). Furthermore, these types of acquisitions are also deemed most successful by senior chemicals industry executives. Arguably these transactions have done most to reposition companies and increase value.

The result of this increased downstream focus and activity will be a consolidation in the so called "specialty" chemicals area. Companies such as Solvay, BASF and DSM will carry on acquiring smaller competitors while divesting upstream businesses. This expansion further downstream will result in even larger acquisitions as higher quality opportunities become increasingly scarce.

But the surprising consequence of this could be an even stronger European chemical

CHEMICALS M&A DEALS (SELECTED)



Increasing Technology or Feedstock Advantage

SOURCE: The Valence Group

industry - having been first to act it could become the most sheltered from global competitors and actually benefit in the mid-term. As a famous European philosopher wrote, "that which does not kill us makes us stronger" - a thought many European chemical companies hope is correct.

Transactions 1-16:

BASF - Engelhard

DuPont – Danisco Ecolab – Nalco

IPIC - Nova Rhodia – Suzhuo HiPro Solvay – Rhodia

Ashland - ISP

Georgia Gulf – PPG

Syngenta – Devgen

Transactions 17-26:

Gulf Oil - Houghton

Birla - Columbian Chemicals

Lanxess - DSM Elastomers Lonza – Arch Olin – KA Steel

Oman Oil – Oxea PolyOne – Spartech Synthomer – Polymer Latex

Rain Commodities - Ruetgers

Borealis - DSM/Exxon Plastomers

Albemarle – Akzo Catalysts Altana – Rockwood Clays

BASF - Becker Underwood BASF - Novolyte

ChemChina – Mahkteshim-Agan Clariant – Sued Chemie DSM – Fortitech

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