

DOW PHOTO



NIGHT LIGHTS Dow once again tops the U.S. listing. Shown here is Dow's Midland, Mich., site.

TOP 50 CHEMICAL PRODUCERS

Big gains gave petrochemical firms a strong showing in the 2005 survey of U.S. companies

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C&EN'S 2005 SURVEY OF U.S. chemical producers shows an industry enjoying the best of times. Sales and operating profits have risen dramatically for most companies as strong demand for chemical products—particularly petrochemicals—has provided chemical makers the leverage needed to raise prices.

The Top 50 U.S. chemical companies had total sales of \$253.9 billion in this year's survey, which is based on 2004 financial results. The total marks a 23% increase over the \$206.4 billion tabulated in C&EN's 2004 survey.

Such an increase may seem hard to believe. However, revenues jumped significantly at many key companies near the top

of the list. In fact, out of the top 20 companies, all but DuPont and Mosaic posted double-digit sales growth.

Sales at Dow Chemical, which heads the ranking for the fourth straight year, grew by 23%, topping \$40 billion. Number two DuPont wasn't as fortunate: Its sales held steady at \$30.1 billion.

ExxonMobil Chemical's sales jumped by 38%, reaching \$27.8 billion and solidifying the company's position at third place in the ranking. Huntsman Corp.'s sales climbed a whopping 64% to \$11.4 billion, lifting it to fourth in this year's ranking, an improvement from sixth in the previous survey.

Equistar Chemicals jumped from number eight to number five because of a 42%

increase in sales to \$9.3 billion. This will be Equistar's last year in the ranking. On Dec. 1, 2004, Lyondell purchased Millennium Chemicals and thus the stake in the Equistar joint venture that it didn't already own. The combined sales would have been about \$17 billion, enough to give Lyondell a comfortable fourth place on the list. However, because the transaction was completed late in the year, results for Equistar and Millennium are included only in Lyondell's December results.

But Lyondell will have a full year of consolidated earnings from all three companies under its belt in 2005, so it should rise to the top five in C&EN's 2006 survey, barring significant acquisitions by other major companies.

At another petrochemical company, Chevron Phillips Chemical, sales increased by 34%, hitting \$9.2 billion. Despite the gains, the company slipped from fifth in the 2004 survey to sixth this year.

General Electric likewise slipped, from fourth to seventh. Its results have been restated to reflect a major restructuring of how it reports its chemical unit, however. GE's chemical sales increased by 17% to reach \$8.3 billion.

PPG Industries' sales increased by 11%, but it dropped one position to eighth in this year's ranking. Rounding out the top 10 are industrial gas makers Air Products & Chemicals at nine and Praxair at 10, both with gains of about 17% that propelled their sales to \$7.1 billion and \$6.6 billion, respectively.

IN ALL, 48 of the 50 companies posted increased sales. Moreover, one of the remaining companies, Mosaic, doesn't have sales comparable with last year's survey. The company was formed in October 2004 through the merger of IMC Global—ranked 20 on last year's list—with Cargill's fertilizer business. Because Mosaic's fiscal year ends May 31, versus the calendar year that IMC used, C&EN was unable to compare results. The merged company is roughly double IMC's size.

The survey also reflects a sharp rise in profits for U.S. chemical makers. Of the 45 companies that disclosed profits comparable with previous-year results, 36 re-

Of the 45 companies that disclosed profits comparable with previous-year results, 36 reported gains.

A VERY GOOD YEAR

Sales and profits jumped for most U.S. chemical producers in 2004

RANK		COMPANY	CHEMICAL SALES	CHANGE	CHEMICAL SALES AS	HEADQUARTERS	CHEMICAL OPERATING PROFITS ^a	CHANGE	CHEMICAL OPERATING PROFITS AS	OPERATING PROFIT	IDENTIFIABLE CHEMICAL ASSETS	CHEMICAL ASSETS AS	OPERATING RETURN ON
2004	2003		(\$ MILLIONS) 2004	FROM 2003	% OF TOTAL SALES		(\$ MILLIONS)	FROM 2003	% OF TOTAL OPERATING PROFIT	MARGIN ^b	(\$ MILLIONS)	% OF TOTAL ASSETS	CHEMICAL ASSETS ^c
1	1	Dow Chemical	\$40,161.0	23.1%	100.0%	Midland, Mich.	\$3,459.0	66.1%	100.0%	8.6%	\$33,834.0	73.7%	10.2%
2	2	DuPont ^d	30,130.0	-0.4	99.9	Wilmington, Del.	na	na	na	na	19,074.0	98.0	na
3	3	ExxonMobil ^e	27,781.0	37.6	9.5	Irving, Texas	3,428.0	139.4	13.5	12.3	21,154.0	10.8	16.2
4	6	Huntsman Corp.	11,437.9	63.6	100.0	Salt Lake City	159.4	132.0	25.8	1.4	9,436.5	100.0	1.7
5	8	Equistar Chemicals	9,316.0	42.3	100.0	Houston	498.0	nm	100.0	5.3	5,074.0	100.0	9.8
6	5	Chevron Phillips	9,238.0	33.7	100.0	The Woodlands, Texas	707.0	830.3	100.0	7.7	6,872.0	100.0	10.3
7	4	General Electric	8,290.0	17.1	5.4	Fairfield, Conn.	710.0	15.3	3.4	8.6	12,318.0	1.6	5.8
8	7	PPG Industries	7,309.0	10.6	76.8	Pittsburgh	1,068.0	13.7	89.5	14.6	5,720.0	64.0	18.7
9	9	Air Products ^f	7,050.7	16.9	95.1	Allentown, Pa.	916.5	40.6	98.8	13.0	9,372.0	93.3	9.8
10	12	Praxair	6,594.0	17.5	100.0	Danbury, Conn.	1,661.0	15.0	100.0	25.2	9,878.0	100.0	16.8
11	10	Eastman Chemical	6,580.0	13.4	100.0	Kingsport, Tenn.	374.0	67.7	100.0	5.7	5,872.0	100.0	6.4
12	11	Rohm and Haas	6,471.0	15.1	88.6	Philadelphia	na	na	na	na	6,997.0	69.3	na
13	13	Lyondell	5,968.0	57.0	100.0	Houston	105.0	nm	100.0	1.8	15,736.0	98.8	0.7
14	—	Mosaic ^g	5,300.0	na	100.0	Plymouth, Minn.	na	na	na	na	na	na	na
15	—	Celanese	5,069.0	10.1	100.0	Dallas	250.0	106.6	100.0	4.9	7,410.0	100.0	3.4
16	14	Occidental Petroleum	3,675.0	15.6	32.3	Los Angeles	414.0	94.4	9.6	11.3	3,470.0	16.2	11.9
17	15	Honeywell	3,497.0	10.4	13.7	Morristown, N.J.	184.0	35.3	6.2	5.3	3,239.0	10.4	5.7
18	16	Dow Corning	3,372.6	17.4	100.0	Midland, Mich.	442.2	29.8	100.0	13.1	4,816.4	100.0	9.2
19	17	Monsanto ^h	3,180.0	11.5	58.3	St. Louis	na	na	na	na	5,043.0	55.0	na
20	22	Lubrizol	3,155.6	54.0	100.0	Wickliffe, Ohio	300.7	75.3	100.0	9.5	4,566.3	100.0	6.6
21	18	Nalco	3,033.3	9.6	100.0	Naperville, Ill.	291.7	-4.5	100.0	9.6	5,933.9	100.0	4.9
22	19	Solutia	2,697.0	11.0	100.0	St. Louis	-66.0	nm	def	def	2,076.0	100.0	def
23	23	Crompton Corp.	2,384.7	17.4	93.5	Middlebury, Conn.	187.3	64.2	def	7.9	1,310.2	48.9	14.3
24	24	W.R. Grace	2,259.9	14.1	100.0	Columbia, Md.	334.5	22.5	100.0	14.8	3,538.9	100.0	9.5
25	33	Georgia Gulf	2,206.2	52.7	100.0	Atlanta	190.4	173.2	100.0	8.6	963.8	100.0	19.8
26	21	Engelhard	2,204.6	7.3	52.9	Iselin, N.J.	292.4	2.7	106.9	13.3	2,099.6	66.1	13.9
27	29	Sunoco	2,197.0	35.0	8.6	Philadelphia	153.0	82.1	15.4	7.0	1,582.0	19.6	9.7
28	25	FMC Corp.	2,051.2	6.8	100.0	Philadelphia	228.8	16.4	100.0	11.2	2,978.4	100.0	7.7
29	26	Hercules	1,997.0	8.2	100.0	Wilmington, Del.	262.0	-6.4	100.0	13.1	2,710.0	100.0	9.7
30	35	Westlake Chemical	1,985.4	39.5	100.0	Houston	242.9	278.9	100.0	12.2	1,592.5	100.0	15.3
31	27	Cabot Corp. ^f	1,934.0	7.7	100.0	Boston	207.0	93.5	100.0	10.7	2,426.0	100.0	8.5
32	28	Millennium	1,888.0	11.9	100.0	Red Bank, N.J.	101.0	-44.8	100.0	5.3	2,040.0	100.0	5.0
33	31	Cytec Industries	1,721.3	17.0	100.0	West Paterson, N.J.	165.2	13.9	100.0	9.6	2,226.1	100.0	7.4
34	34	Borden Chemical	1,686.0	17.5	100.0	Columbus, Ohio	92.3	30.9	100.0	5.5	1,044.1	100.0	8.8
35	32	Great Lakes Chemical	1,603.7	9.5	100.0	Indianapolis	55.8	232.1	100.0	3.5	1,801.5	100.0	3.1
36	—	Rockwood Specialties	1,597.2	100.3	91.6	Princeton, N.J.	na	na	na	na	4,680.2	86.1	na
37	—	Goodyear	1,532.6	25.5	8.3	Akron, Ohio	177.0	47.3	16.4	11.5	650.3	3.9	27.2
38	42	Albemarle	1,513.7	36.3	100.0	Richmond, Va.	123.3	19.8	100.0	8.1	2,442.7	100.0	5.0
39	36	Terra Industries	1,507.0	11.7	100.0	Sioux City, Iowa	114.7	314.1	100.0	7.6	1,685.5	100.0	6.8
40	37	H.B. Fuller ⁱ	1,409.6	9.5	100.0	St. Paul, Minn.	68.2	0.3	100.0	4.8	1,135.4	100.0	6.0
41	40	Ashland ^f	1,386.0	18.5	16.7	Covington, Ky.	87.0	180.6	13.1	6.3	842.0	11.2	10.3
42	43	Wellman	1,305.0	17.6	100.0	Shrewsbury, N.J.	24.0	71.4	100.0	1.8	1,166.9	100.0	2.1
43	39	Kerr-McGee	1,302.0	3.2	25.2	Oklahoma City	-81.0	68.8	def	def	1,543.0	10.6	def
44	45	Kronos Worldwide	1,128.6	11.9	100.0	Dallas	113.3	-19.2	100.0	10.0	1,121.9	82.9	10.1
45	44	Arch Chemicals	1,120.9	11.1	100.0	Norwalk, Conn.	44.9	88.7	100.0	4.0	1,100.0	100.0	4.1
46	46	ISP	1,023.5	14.6	100.0	Wayne, N.J.	152.8	15.3	100.0	14.9	1,442.9	100.0	10.6
47	48	Resolution Performance	993.0	27.1	100.0	Houston	76.0	85.4	100.0	7.7	911.0	100.0	8.3
48	47	Stepan	935.8	19.2	100.0	Northfield, Ill.	19.2	95.9	100.0	2.1	492.8	100.0	3.9
49	49	NewMarket Corp.	894.1	18.2	100.0	Richmond, Va.	16.1	-19.5	100.0	1.8	676.2	100.0	2.4
50	—	Sterling	851.7	44.2	100.0	Houston	-12.1	nm	def	def	473.6	100.0	def

a Operating profit is sales less administrative expenses and cost of sales. b Chemical operating profit as a percentage of sales. c Chemical operating profit as a percentage of identifiable assets. d Sales include a significant amount of nonchemical products. e Profits and profitability ratios are after tax. f Fiscal year ended Sept. 30. g Company was formerly IMC Global. Results are for the 12-month period ending Nov 30., which are not comparable to IMC results for fiscal 2003. h Fiscal year ended Aug. 31. Results for 2003 are for an 11-month period. i Fiscal year ended Nov. 27. def = deficit. na = not available. nm = not meaningful.

ALL THE RANKINGS

Top 50 U.S. producers in terms of chemical sales, operating profits, assets, and profitability

\$ MILLIONS	CHEMICAL SALES			CHEMICAL OPERATING PROFITS			CHEMICAL OPERATING PROFIT MARGIN			IDENTIFIABLE CHEMICAL ASSETS			RETURN ON CHEMICAL ASSETS		
	RANK			RANK			RANK			RANK			RANK		
	2004	2004	2003	2004	2004	2003	2004	2004	2003	2004	2004	2003	2004	2004	2003
Air Products	\$7,050.7	9	9	\$916.5	5	6	13.0%	8	10	\$9,372.0	8	5	9.8%	15	14
Albemarle	1,513.7	38	42	123.3	29	24	8.1	22	16	2,442.7	25	36	5.0	32	11
Arch Chemicals	1,120.9	45	44	44.9	39	37	4.0	36	35	1,100.0	41	44	4.1	35	36
Ashland	1,386.0	41	40	87.0	35	35	6.3	28	33	842.0	45	47	10.3	11	30
Borden Chemical	1,686.0	34	34	92.3	34	29	5.5	30	26	1,044.1	42	43	8.8	21	14
Cabot Corp.	1,934.0	31	27	207.0	20	23	10.7	14	21	2,426.0	26	25	8.5	22	27
Celanese	5,069.0	15	—	250.0	17	—	4.9	34	—	7,410.0	9	—	3.4	37	—
Chevron Phillips	9,238.0	6	5	707.0	7	27	7.7	24	39	6,872.0	11	10	10.3	11	39
Crompton Corp.	2,384.7	23	23	187.3	22	22	7.9	23	22	1,310.2	37	24	14.3	7	26
Cytec Industries	1,721.3	33	31	165.2	25	17	9.6	16	14	2,226.1	27	26	7.4	25	13
Dow Chemical	40,161.0	1	1	3,459.0	1	1	8.6	19	20	33,834.0	1	1	10.2	13	18
Dow Corning	3,372.6	18	16	442.2	9	7	13.1	6	8	4,816.4	17	13	9.2	20	22
DuPont	30,130.0	2	2	na	—	—	na	—	—	19,074.0	3	2	na	—	—
Eastman Chemical	6,580.0	11	10	374.0	11	12	5.7	29	32	5,872.0	13	11	6.4	28	32
Engelhard	2,204.6	26	21	292.4	14	9	13.3	5	6	2,099.6	28	33	13.9	8	3
Equistar Chemicals	9,316.0	5	8	498.0	8	46	5.3	31	—	5,074.0	15	15	9.8	15	—
ExxonMobil ^a	27,781.0	3	3	3,428.0	2	3	12.3	9	18	21,154.0	2	3	16.2	5	12
FMC Corp.	2,051.2	28	25	228.8	19	14	11.2	13	13	2,978.4	23	21	7.7	24	16
H.B. Fuller	1,409.6	40	37	68.2	37	32	4.8	35	23	1,135.4	39	42	6.0	29	19
General Electric	8,290.0	7	4	710.0	6	5	8.6	19	15	12,318.0	5	4	5.8	30	23
Georgia Gulf	2,206.2	25	33	190.4	21	30	8.6	19	27	963.8	43	45	19.8	2	10
Goodyear	1,532.6	37	—	177.0	24	—	11.5	11	—	650.3	47	—	27.2	1	—
W.R. Grace	2,259.9	24	24	334.5	12	11	14.8	3	7	3,538.9	20	20	9.5	19	6
Great Lakes Chemical	1,603.7	35	32	55.8	38	40	3.5	37	39	1,801.5	31	32	3.1	38	40
Hercules	1,997.0	29	26	262.0	16	10	13.1	6	2	2,710.0	24	22	9.7	17	5
Honeywell	3,497.0	17	15	184.0	23	19	5.3	31	31	3,239.0	22	19	5.7	31	29
Huntsman Corp.	11,437.9	4	6	159.4	26	31	1.4	42	41	9,436.5	7	6	1.7	41	41
ISP	1,023.5	46	46	152.8	28	20	14.9	2	3	1,442.9	36	35	10.6	10	8
Kerr-McGee	1,302.0	43	39	-81.0	45	45	def	—	—	1,543.0	35	31	def	—	—
Kronos Worldwide	1,128.6	44	45	113.3	31	18	10.0	15	4	1,121.9	40	39	10.1	14	4
Lubrizol	3,155.6	20	22	300.7	13	16	9.5	18	17	4,566.3	19	27	6.6	27	9
Lyondell Chemical	5,968.0	13	13	105.0	32	43	1.8	39	—	15,736.0	4	9	0.7	42	—
Millennium Chemicals	1,888.0	32	28	101.0	33	15	5.3	31	10	2,040.0	30	28	5.0	32	6
Monsanto	3,180.0	19	17	na	—	38	na	—	42	5,043.0	16	16	na	—	42
Mosaic	5,300.0	14	—	na	—	—	na	—	—	na	—	—	na	—	—
Nalco	3,033.3	21	18	291.7	15	8	9.6	16	8	5,933.9	12	12	4.9	34	23
NewMarket Corp.	894.1	49	49	16.1	42	38	1.8	39	33	676.2	46	48	2.4	39	33
Occidental Petroleum	3,675.0	16	14	414.0	10	13	11.3	12	19	3,470.0	21	18	11.9	9	20
PPG Industries	7,309.0	8	7	1,068.0	4	4	14.6	4	5	5,720.0	14	14	18.7	3	2
Praxair	6,594.0	10	12	1,661.0	3	2	25.2	1	1	9,878.0	6	7	16.8	4	1
Resolution Performance	993.0	47	48	76.0	36	34	7.7	24	24	911.0	44	46	8.3	23	25
Rockwood Specialties	1,597.2	36	—	na	—	—	na	—	—	4,680.2	18	—	na	—	—
Rohm and Haas	6,471.0	12	11	na	—	—	na	—	—	6,997.0	10	8	na	—	—
Solutia	2,697.0	22	19	-66.0	44	47	def	—	—	2,076.0	29	23	def	—	—
Stepan	935.8	48	47	19.2	41	42	2.1	38	38	492.8	48	49	3.9	36	37
Sterling Chemicals	851.7	50	—	-12.1	43	—	def	—	—	473.6	49	—	def	—	—
Sunoco	2,197.0	27	29	153.0	27	26	7.0	27	24	1,582.0	34	34	9.7	17	21
Terra Industries	1,507.0	39	36	114.7	30	36	7.6	26	36	1,685.5	32	40	6.8	26	35
Wellman	1,305.0	42	43	24.0	40	41	1.8	39	37	1,166.9	38	41	2.1	40	38
Westlake Chemical	1,985.4	30	35	242.9	18	33	12.2	10	29	1,592.5	33	37	15.3	6	27

NOTE: There are 45 companies ranked for operating profits, 42 ranked for chemical operating profit margins, 49 ranked for chemical assets, and 42 ranked for return on chemical assets. **a** Reported after-tax profits only. **def** = deficit. **na** = not available.

ported gains. Aggregate profits for the group rose from \$11.0 billion to \$18.3 billion—an increase of 66%.

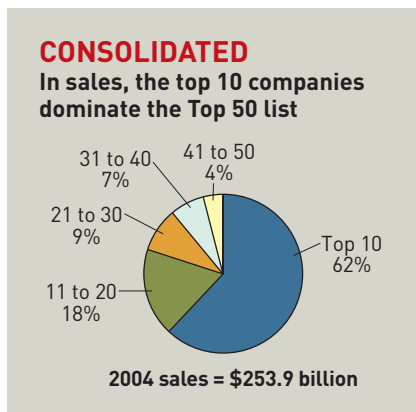
In addition to Mosaic, several new entries appear on the 2005 Top 50 list. Celanese, which moved its headquarters from Frankfurt, Germany, to Dallas as it went public, enters the list at number 14 with just over \$5 billion in sales.

Rockwood Specialties, which has grown through acquisitions of Laporte, Dynamit Nobel, and other chemical businesses, debuts at 36 in the survey.

Goodyear Tire & Rubber Co. rejoins the list after being dropped last year because it was in the process of restating its results and didn't have numbers ready in time. Sterling Chemicals, which sometimes makes the list near the bottom, is included in this year's survey at the number 50 slot.

NL Industries and Ethyl Corp. are listed in the ranking under the names Kronos Worldwide and Newmarket Corp., respectively.

Several companies, in addition to IMC, are missing from the survey this year. Ferro, number 30 in last year's survey, cannot



be included because, like Goodyear a year before, it is restating annual results. CF Industries, 38th a year ago, is also late with results.

Lubrizol's 2004 purchase of Noveon,

ranked 41st in last year's survey, took Noveon off the list and helped lift Lubrizol's sales by more than 50%. Lubrizol climbed only two spaces, to 20th, in this year's survey, although it will likely move up a bit more next year with a full year of Noveon's revenues.

Finally, Sigma-Aldrich, which posted some \$775 million in sales from chemical manufacturing in 2004, missed making the survey this year because its sales were too low.

C&EN's ranking of U.S. sales at the Top 25 foreign-owned companies has undergone a few important changes. Notably, BASF, with \$10.2 billion in U.S. sales, has taken the lead from Bayer.

Bayer's slide in the rankings occurred largely because the firm's results have been split between two separate entries to reflect its spin-off of the industrial chemical company Lanxess. Bayer finishes fourth with \$4.5 billion in U.S. sales, while Lanxess debuts at the 15th spot in the for-

BASF TAKES THE LEAD

Petrochemical producers and diversified chemical makers posted big gains among foreign-owned companies

RANK			U.S. CHEMICAL SALES (\$ MILLIONS)	CHANGE FROM 2003	U.S. CHEMICAL SALES AS % OF TOTAL U.S. SALES	COUNTRY	CHEMICAL OPERATING PROFITS ^a (\$ MILLIONS)	CHANGE FROM 2003	OPERATING PROFIT MARGIN ^b	IDENTIFIABLE CHEMICAL ASSETS (\$ MILLIONS)	OPERATING RETURN ON CHEMICAL ASSETS ^c
2004	2003	COMPANY	2004								
1	2	BASF	\$10,155.6	13.2%	100.0%	Germany	\$306.0	2367.7%	3.0%	\$8,738.9	3.5%
2	3	Shell Oil	6,159.0	41.0	6.0	The Netherlands	na	na	na	na	na
3	4	Atofina	4,631.4	13.6	20.7	France	na	na	na	na	na
4	1	Bayer	4,475.2	7.3	43.5	Germany	na	na	na	na	na
5	5	ICI	3,156.4	-7.2	100.0	U.K.	102.6	-48.6	3.3	1,633.2	6.3
6	6	Degussa	2,830.9	-5.7	100.0	Germany	na	na	na	2,439.1	na
7	7	Air Liquide	2,783.3	5.0	96.1	France	380.0	9.8	13.1	3,365.2	11.3
8	12	Nova Chemicals	2,390.0	33.6	100.0	Canada	-94.0	nm	def	1,303.0	def
9	9	BOC ^d	2,233.1	-1.7	100.0	U.K.	141.9	-15.7	6.4	na	na
10	8	Dainippon Ink & Chemicals ^e	2,205.5	-8.1	100.0	Japan	64.9	14.1	2.9	2,514.0	2.6
11	15	Shin-Etsu ^e	1,967.5	11.8	100.0	Japan	220.6	2.1	11.2	2,629.3	8.4
12	10	Akzo Nobel	1,913.3	-12.3	69.3	The Netherlands	na	na	na	na	na
13	11	Syngenta	1,869.0	1.1	81.0	Switzerland	na	na	na	na	na
14	14	Rhodia	1,813.5	14.8	100.0	France	na	na	na	635.6	na
15	—	Lanxess	1,706.5	4.0	16.6	Germany	na	na	na	na	na
16	16	Agrium	1,687.0	8.3	100.0	Canada	na	na	na	332.0	na
17	17	Potash Corp.	1,668.9	2.4	100.0	Canada	67.8	nm	4.1	1,722.6	3.9
18	—	Arkema	1,600.0	6.7	7.2	France	na	na	na	na	na
19	19	DSM	1,564.7	21.9	100.0	The Netherlands	na	na	na	na	na
20	18	Solvay	1,381.8	-7.1	61.4	Belgium	na	na	na	na	na
21	20	Ciba Specialty Chemicals	1,099.1	-3.5	100.0	Switzerland	na	na	na	533.5	na
22	24	Cognis	957.7	0.4	100.0	Germany	32.3	-7.2	3.4	597.0	5.4
23	21	Sasol ^f	952.8	-14.8	86.9	South Africa	na	na	na	na	na
24	22	Alfa Group	898.8	5.7	64.0	Mexico	na	na	na	na	na
25	23	Clariant	890.7	-2.1	100.0	Switzerland	21.7	nm	2.4	169.8	12.8

^a Operating profit is sales less cost of sales and administrative expenses. ^b Chemical operating profit as a percentage of sales. ^c Chemical operating profit as a percentage of identifiable chemical assets. ^d Fiscal year ended Sept 30. ^e Fiscal year ended March 31. ^f Fiscal year ended June 30. **def** = deficit. **na** = not available. **nm** = not meaningful.

COMPILING THE TOP 50

C&EN ranks chemical producers by sales, defined as sales of chemical and allied products, except pharmaceuticals. Ranking the companies by chemical sales is the only way that privately held companies and some diversified producers can be included. If, for example, C&EN used market capitalization, the ranking couldn't include General Electric or ExxonMobil.

Because chemical sales are derived from company annual reports, non-chemical products often creep in. For instance, DuPont includes sales of seeds along with agrochemicals in its agricultural and nutrition segment.

C&EN does not restate prior-year results, except when a company changes accounting procedures. Nor does C&EN routinely restate prior-year rankings.

In the list of foreign-owned companies, C&EN uses sales administered by the U.S. headquarters of the companies. These figures are as close to the U.S. sales as possible, but companies don't post regional sales consistently. For Shell Oil, U.S. sales are listed, but for BASF, North American sales are given. A comparison of total global operations of chemical producers is scheduled to appear in the July 18 issue of C&EN.

To compile the information for the lists, C&EN uses, for the most part, official company documents such as annual reports and 10-K filings with the Securities & Exchange Commission. For privately held and some foreign-owned companies, company interviews are used.

eign ranking, with \$1.7 billion in U.S. sales.

Even though Atofina launched a similar spin-off—the performance chemicals maker Arkema—its ranking has not slipped. In fact, Atofina is third in this year's foreign ranking, an improvement over the fourth place it held last year. Arkema makes its debut on the list at number 18.

Shell Chemicals, usually third in the foreign ranking, has climbed to second this year after its sales improved by 41%, to \$6.2 billion.

Rounding out the top five foreign companies, ICI again finishes fifth, despite a 7.2% decrease in sales that gave it \$3.2 billion in U.S. revenues for the year.

Missing from the foreign ranking this year is Celanese, which is now on the U.S. list, and UCB, which sold its surface specialties unit to Cytec Industries.

Big changes expected for next year include a full year of earnings for Equistar and Millennium under the Lyondell umbrella. Hexion Specialty Chemicals—to be made up largely from number 34 Borden Chemical and number 47 Resolution Performance Products—will debut next year. With more than \$4 billion in an-

nual sales, Hexion looks certain to be one of the 20 largest U.S. chemical companies. And Basell, the polypropylene joint venture between Shell and BASF, is being purchased by a consortium led by Access Industries and the Chatterjee Group. Chemtura will be Crompton Corp.'s new name after it completes its merger with Great Lakes Chemical. This may lead to publicly reported earnings by the time C&EN runs the next edition of the Top 50 list. ■

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