

SHELL



GLOBAL TOP 50

Dow and BASF retain the top two spots, but the chemical businesses of three big oil companies edge DuPont out of the top five of C&EN's annual survey

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FOR FIVE YEARS, DOW CHEMICAL, BASF, AND DUPONT have been in the top three of C&EN's survey of the global Top 50 chemical companies, although not always in that order. But this year's ranking contains a dramatic upset: Perennial third-place holder DuPont has been nudged out and pushed into the number six slot.

Supplanting DuPont are the chemical businesses of three oil giants: Royal Dutch/Shell, Exxon Mobil, and Total. And underscoring the impact of high oil and petrochemical prices, the remaining members

of the top 10 feature three more olefins giants—China Petroleum & Chemical (Sinopec), BP's chemicals unit, and Saudi Basic Industries Corp. (SABIC)—as well as Germany's Bayer.

This year's ranking pulls together 50 companies whose combined worldwide sales in 2005 were \$665.6 billion, based on financial reports for the year. That is an increase of 15% over the 2004 figure, at constant exchange rates. The sales cutoff for the Top 50 in this year's ranking is \$5.4 billion, a 3% increase over the previous year's cutoff.

As in last year's ranking, sales of the world's major companies reflect the impact of rising oil prices and the attendant rise in petrochemical prices. Only six of the Top

GLOBAL TOP 50

Oil companies' operations nudge DuPont out of third place, while Dow and BASF maintain dominance

RANK		COMPANY	CHEMICAL SALES (\$ MILLIONS) 2005	CHANGE FROM 2004	CHEMICAL SALES AS % OF TOTAL SALES	HEAD-QUARTERS COUNTRY	CHEMICAL OPERATING PROFITS ^a (\$ MILLIONS)	CHANGE FROM 2004	PROFITS AS % OF TOTAL OPERATING PROFIT	OPERATING PROFIT MARGIN ^b	IDENTIFIABLE CHEMICAL ASSETS (\$ MILLIONS)	CHEMICAL ASSETS AS % OF TOTAL ASSETS	RETURN ON CHEMICAL ASSETS ^c
2005	2004												
1	1	Dow Chemical	\$46,307	15%	100%	U.S.	\$5,413	57%	100%	12%	\$45,934	100%	12%
2	2	BASF	43,682	14	82	Germany	5,107	17	67	12	30,232	68	17
3	4	Royal Dutch/Shell	34,996	19	11	U.K./Netherlands	1,219	31	3	4	12,087	6	10
4	5	Exxon Mobil ^d	31,186	12	12	U.S.	3,943	15	15	13	19,496	9	20
5	6	Total	27,794	11	16	France	1,679	24	6	6	8,175	6	21
6	3	DuPont ^e	25,330	-16	90	U.S.	na	—	—	—	18,155	98	—
7	9	China Petroleum & Chemical	21,121	25	21	China	1,746	-24	2	8	14,157	22	12
8	8	Bayer ^f	20,654	14	61	Germany	2,563	82	73	12	24,731	54	10
9	7	BP	20,627	-3	8	U.K.	-668	nm	def	def	12,756	16	def
10	11	SABIC	18,947	20	91	Saudi Arabia	8,213	57	93	43	32,656	89	25
11	13	Formosa Plastics ^g	18,747	19	59	Taiwan	2,392	-22	8	13	16,083	56	15
12	—	Lyondell Chemical ^h	18,606	212	100	U.S.	1,487	1,316	100	8	14,794	100	10
13	10	Mitsubishi Chemical	17,945	12	82	Japan	911	-17	4	5	14,053	73	7
14	12	Degussa	14,630	5	100	Germany	972	-8	100	7	16,804	100	6
15	16	Mitsui Chemicals	13,372	20	100	Japan	533	-27	100	4	12,069	100	4
16	15	Huntsman Corp.	12,962	13	100	U.S.	980	56	100	8	8,871	100	11
17	32	Ineos Group ⁱ	12,400	77	100	U.K.	na	—	—	—	na	—	—
18	14	Akzo Nobel	11,758	-1	73	Netherlands	867	-35	47	7	5,664	37	15
19	19	Sumitomo Chemical	11,458	18	81	Japan	674	26	5	6	4,850	48	14
20	17	Air Liquide	11,388	6	88	France	1,951	10	94	17	17,263	85	11
21	20	Toray Industries	11,297	12	87	Japan	747	17	6	7	11,988	86	6
22	24	Chevron Phillips	10,707	16	100	U.S.	934	32	100	9	6,960	100	13
23	18	ICI	10,583	4	100	U.K.	1,002	15	100	10	9,409	100	11
24	—	Basel ^l	10,582	—	100	Netherlands	954	nm	100	9	8,937	100	11
25	25	Shin-Etsu Chemical	10,244	17	100	Japan	1,683	22	100	16	15,178	100	11
26	21	DSM	10,202	6	100	Netherlands	1,006	65	100	10	12,480	100	8
27	23	Dainippon Ink & Chemicals	9,126	0	100	Japan	449	3	100	5	8,808	100	5
28	27	Lanxess	8,901	18	100	Germany	35	-62	100	0	5,404	100	1
29	30	BOC	8,385	19	100	U.K.	1,027	11	100	12	6,337	100	16
30	28	PPG Industries	7,964	9	78	U.S.	1,060	-1	100	13	5,622	65	19
31	29	Asahi Kasei	7,927	13	58	Japan	580	0	59	7	6,807	55	9
32	40	Solvay	7,833	20	74	Belgium	839	26	74	11	6,038	48	14
33	34	ENI	7,787	16	9	Italy	252	-37	1	3	3,979	6	6
34	31	Air Products	7,743	10	95	U.S.	999	9	100	13	9,776	94	10
35	35	Praxair	7,656	16	100	U.S.	1,948	17	100	25	10,491	100	19
36	42	Yara	7,168	7	100	Norway	593	3	100	8	4,753	100	13
37	41	Rohm and Haas	7,064	9	88	U.S.	na	—	—	—	6,555	67	—
38	36	Eastman Chemical	7,059	7	100	U.S.	788	111	100	11	5,773	100	14
39	37	Reliance Industries	6,718	-1	36	India	1,071	25	6	16	2,607	12	41
40	26	General Electric ^e	6,606	9	4	U.S.	867	53	4	13	na	—	—
41	33	Clariant	6,566	-4	100	Switzerland	295	-42	100	5	5,879	100	5
42	39	Sasol	6,547	-1	60	South Africa	494	238	22	8	6,011	43	8
43	38	Rhodia	6,330	8	100	France	121	-128	100	2	7,029	100	2
44	43	Syngenta	6,307	5	78	Switzerland	996	40	116	16	8,135	70	12
45	49	Celanese	6,070	20	100	U.S.	644	158	100	11	7,445	100	9
46	45	Borealis	5,992	4	100	Denmark	139	-30	100	2	4,287	100	3
47	46	Ciba Specialties	5,955	6	100	Switzerland	-100	nm	def	def	8,518	100	def
48	48	Nova Chemicals	5,617	7	100	Canada	454	-20	100	8	5,217	100	9
49	47	Teijin	5,516	6	65	Japan	504	87	6	9	5,771	67	9
50	42	LG Chem ^{e,k}	5,468	5	75	South Korea	279	-30	68	5	1,452	27	19

NOTE: Financial figures converted at the 2005 average exchange rates of \$1.00 U.S. = 0.803 euros, 0.549 British pounds, 1.246 Swiss francs, 3.74 Saudi riyals, 110.11 Japanese yen, 32.131 Taiwanese dollars, 44.00 Indian rupees, 8.194 Chinese yuan, 6.361 South African rand, 6.441 Norwegian crowns, and 1.211 Canadian dollars. **a** Operating profit is sales less administrative expenses and cost of sales. **b** Chemical operating profit as a percentage of chemical sales. **c** Chemical operating profit as a percentage of identifiable chemical assets. **d** Profits and profitability ratios are after-tax. **e** Sales include a significant amount of nonchemical products. **f** Excludes Lanxess. **g** Includes group companies Formosa Plastics Corp., Nan Ya Plastics, Formosa Chemicals & Fibre, and Formosa Petrochemical. **h** Reflects acquisition of Millennium Chemicals in December 2004 and integration of Equistar joint venture. **i** C&EN estimate. **j** Shell/BASF joint venture became independent in 2005. **k** Nonconsolidated data. **def** = deficit. **na** = not available. **nm** = not meaningful.

50 showed a decline in sales, mainly because of divestitures.

This year's survey also points out that chemical industry profitability is continuing to increase, with an aggregate operating profit margin of 9.1%, up from 8.1% in last year's ranking. The new survey's profit margin is particularly healthy compared with that of two years ago, when a profit margin of 5.5% was the lowest point in the industry cycle.

The general rise in profit margin must be set against the fact that 14 companies showed a drop in operating profits. However, only two—BP and Ciba Specialty Chemicals—reported an actual operating loss; both companies have been involved in major restructuring projects.

This year's survey of the world's top chemical companies shows global business trends diverging from those in the U.S., as spotlighted in C&EN's U.S. Top 50 (C&EN, May 15, page 23). In that survey, changes in the ranking were due largely to the acquisition of a few large chemical producers by others.

Such engorged companies are, of course, part of this year's global ranking. One of the major examples is Lyondell Chemical, which was not even on last year's ranking but has catapulted into 12th position this year, following its December 2004 purchase of Millennium Chemicals. That buy integrated both Millennium and the Millennium-Lyondell joint venture, Equistar, into Houston-based Lyondell.

The other major example was Ineos, which has been on an acquisition binge over the past two years. Because it is privately held, the company reports no figures. But by manipulating sales numbers that Ineos revealed during its acquisition of BP's Innovene polymers unit, completed in December 2005, C&EN has estimated Ineos' 2005 sales at \$12.4 billion—good enough to claim 17th slot, up from number 32 in last year's ranking.

AS A COUNTERPOINT to the acquisitions, however, this year's global ranking features several spin-offs. Top of the list is Basell, formerly a 50-50 joint venture between Shell and BASF that specializes in polymers. By becoming an independent company last year, it hence qualifies to join this year's rankings along with its former parents.

Similarly, Lanxess, at number 28, became fully independent from Bayer last year. And number 36, the fertilizer maker Yara, continues to strengthen following its demerger from Norsk Hydro in 2004. Norsk Hydro is left with a small chemicals business and no longer qualifies for the survey on its own.

Alan Bigman, chief financial officer of Basell, explained at an investors' conference

SPENDING

Strong pickup in capital spending is not matched for R&D

	CHEMICAL CAPITAL SPENDING			CHEMICAL R&D SPENDING		
	2005 (\$ MILLIONS)	% CHANGE FROM 2004	% OF CHEMICAL SALES	2005 (\$ MILLIONS)	% CHANGE FROM 2004	% OF CHEMICAL SALES
Dow Chemical	\$1,597	20%	3%	\$1,073	5%	2%
BASF	1,635	-22	4	1,323	8	3
Shell Chemicals	599	-31	2	na	—	—
Exxon Mobil	654	-5	2	na	—	—
Total	1,388	23	5	na	—	—
DuPont	1,340	9	5	1,336	0	5
China Petroleum & Chemical	1,443	—	7	na	—	—
Bayer	1,140	69	6	1,139	0	6
BP	789	-15	4	na	—	—
SABIC	2,026	76	11	na	—	—
Lyondell Chemical	249	200	1	91	122	1
Mitsubishi Chemical	696	74	4	na	—	—
Degussa	1,013	13	7	436	1	3
Mitsui Chemicals	739	73	6	337	6	3
Huntsman Corp.	339	50	3	96	15	1
Akzo Nobel	453	-7	4	352	-2	3
Sumitomo Chemical	878	-1	8	na	—	—
Air Liquide	1,214	12	11	134	4	1
Toray Industries	892	55	8	na	—	—
Chevron Phillips	177	-7	2	41	-2	0
ICI	288	-1	3	268	0	3
Basell	301	—	3	156	—	2
Shin-Etsu Chemical	1,088	13	11	291	15	3
DSM	499	20	5	361	1	4
Dainippon Ink & Chemicals	382	-8	4	135	-7	2
Lanxess	313	-10	4	126	-20	1
BOC	723	55	9	79	4	1
PPG Industries	221	117	3	na	—	—
Asahi Kasei	427	2	5	na	—	—
Solvay	690	67	9	132	4	2
ENI	139	-24	2	na	—	—
Air Products	930	32	12	133	5	2
Praxair	877	31	12	80	4	1
Yara	228	29	3	16	-24	0
Rohm and Haas	293	2	4	273	4	4
Eastman Chemical	343	38	5	162	5	2
Reliance Industries	857	204	13	na	—	—
Clariant	279	20	4	175	-20	3
Sasol	864	14	13	21	-43	0
Rhodia	356	15	6	154	-21	2
Syngenta	168	31	3	509	2	8
Celanese	212	1	4	91	1	2
Borealis	275	15	6	51	0	1
Ciba Specialties	221	-7	4	242	5	4
Nova Chemicals	419	73	8	50	4	1
Teijin	481	46	9	na	—	—
LG Chem	333	45	6	na	—	—

na = not available.

this spring that Basell was acquired by Access Industries on Aug. 1, 2005, for about \$5.6 billion. Access, founded in 1986 by

investor Len Blavatnik, retained the Basell management team to continue the company's strategy and vision, Bigman said.

TOP 50 OPERATIONS

Mixed Picture On Spending For The Future

The world's major chemical companies went on a spending spree in 2005 that reflects the healthy improvement in their profits, according to C&EN's ranking of the global Top 50 companies.

Combined capital spending in 2005 soared by 27.6% over 2004, to nearly \$31.5 billion. Moreover, capital spending as a percentage of total sales picked up as well, reversing a dip the year earlier. Capital spending of 4.7% of chemical sales, however, is still the second lowest in the 10 years that C&EN has examined this measure as part of its ranking of the industry.

The increase in capital spending was led by the major Japanese companies, which boosted their investment by 26.3% over 2004 levels. The U.S. followed closely, with the major U.S. companies increasing their aggregate capital investment by 21.0%. Even European producers increased their spending by 9.6%.

Spurring European investment was a resurgent German chemical industry, the largest in the region. Werner Wenning, president of the German Chemical Industry Association and chairman of Bay-

er, said at the association's half-year press conference earlier this month that investments by the country's producers "are not only about modernization and rationalization of chemical plants but, because of the strong demand for chemicals, also about capacity increases."

The R&D front, however, gives a much less encouraging picture of the global chemical industry.

Combined R&D spending by those 32 companies reporting this figure for chemical operations was up by 1.2% in 2005, to \$9.9 billion. As a percentage of chemical sales, however, R&D spending fell from 1.8% in 2004 to 1.6% in 2005. That marks the fourth year in a row that the proportion of R&D spending has fallen; it is now precisely half the level of 1998.

U.S. companies upped their R&D spending, however, by 4.5% to a total of \$3.4 billion in 2005. Lagging behind, however, Europe's industry showed yet another decline in spending: Combined R&D spending for European companies in C&EN's rankings this year was down by 2.4%, accelerating the decline of 0.1% shown in 2004.

"Basell is able to implement new strategies faster and more efficiently under its new structure," he said. It is especially nimble at moving into far-flung activities, including a joint venture in Saudi Arabia, a petrochemical complex in Kazakhstan, new polypropylene and polyethylene plants in Poland, and projects in Argentina, China, Australia, and the U.S.

Basell's activities reinforce the ever-intensifying global nature of the chemical industry. Curiously, though, firms in the traditional chemical-producing regions of the U.S., Europe, and Japan maintained their share of world chemical sales in this year's survey. That is true even though the companies, and the number of companies, in each region have changed. The C&EN ranking charts two years of sales and operating profits at 2005 currency exchange rates.

This year, a baker's dozen of U.S. chemical companies are on the list, down one from 14 last year. The 13 companies this

year showed combined sales in 2005 of \$195.3 billion, up 13.0% from the previous year. This is 29.3% of the total for all 50 firms, a proportion unchanged from last year's ranking.

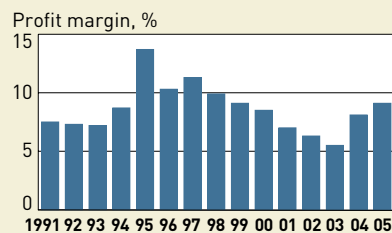
The largest chunk of sales was contributed by Europe, whose 22 companies, up from 21, had combined sales of \$300.5 billion. That figure is up 15.6% from the previous year, but the Europeans' share of total world sales this year is 45.1%, only slightly changed from the 44.9% of the previous year.

Japan is the third historical source of chemical industry giants. It has eight companies in the ranking, the same number as last year, with combined 2005 sales of \$86.9 billion, an increase of 12.8% over 2004. The Japanese firms made up 13.0% of global chemical sales in the survey, down just slightly from 13.3% the previous year.

Meanwhile, in contrast to the past few years in which companies in "other" geographic areas have earned an increasing

UP AGAIN

Profit margins continued their rebound in 2005

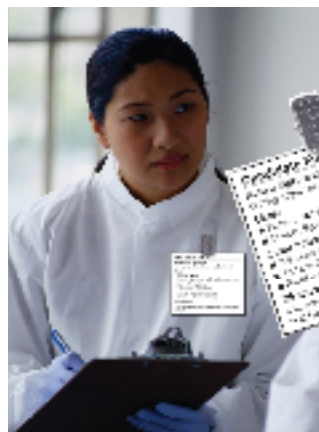


NOTE: Based on C&EN's annual listing of the global Top 50 chemical producers.

share of the total, in this year's ranking, the percentage held by these companies was actually down a whisker, by 0.1%. Seven companies are included in this category, the same number—and firms—as in last year's ranking. Their combined sales in 2005, however, zoomed up by 14.8% over 2004.

As C&EN predicted last year, Equistar and Millennium Chemicals both dropped out of the ranking, consumed by Lyondell. However, the prediction that the new fertilizer company Mosaic would make its debut failed to come to pass, as its 2005 sales of \$4.4 billion were almost \$1 billion under this year's cutoff figure.

Next year's ranking, however, should show the inclusion of another spin-off, Arkema, which was demerged from Total in the spring. Total still has a sizable chemicals business, so it will remain part of the Top 50, although no longer in the top five or 10. Similarly, BP's place in next year's ranking will drop significantly following the sale of Innovene to Ineos. ■



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