

Chemical Industry Patent Benchmark



© Prof. Dr. Holger Ernst, Dipl.-Kfm. Nils Omland
WHU – Otto Beisheim School of Management
Burgplatz 2, 56179 Vallendar
Tel.: +49 261 6509-241
Fax: +49 261 6509-249
mailto: hernst@whu.edu, nomland@whu.edu
URL: www.whu.edu/tim

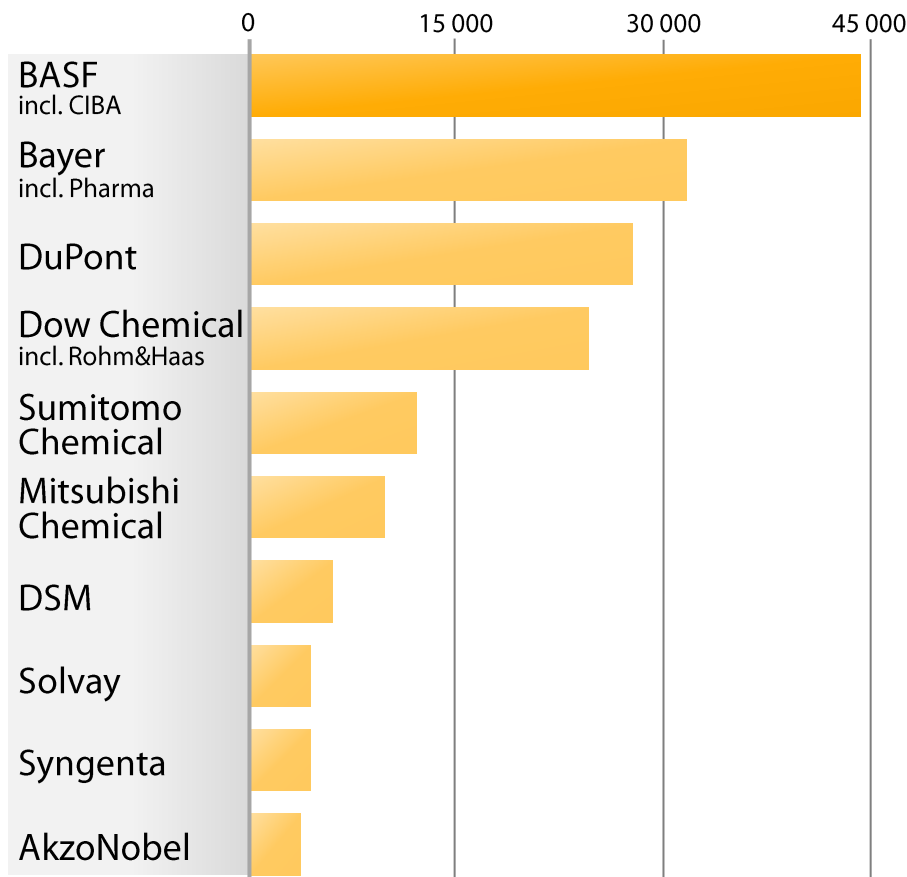
Excellence in
Management
Education

Overall Competitive Impact of the patent portfolio

BASF leads the chemical industry by a large margin

Patent Asset Index™

Overall Competitive Impact
Equivalent number of average patents



The benchmark compares the ten companies that invest most in R&D in chemicals

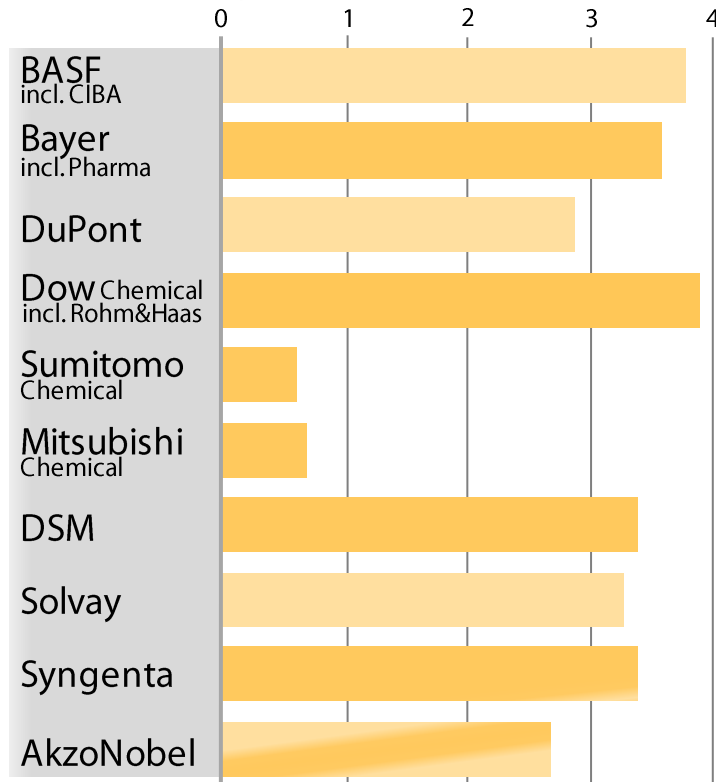
BASF has build the strongest chemical patent portfolio. During the last ten years, the company has invested more in R&D than its rivals (€ 14 bn).

Quality vs. quantity

Dow Chemical's patents tend to have a stronger Competitive Impact

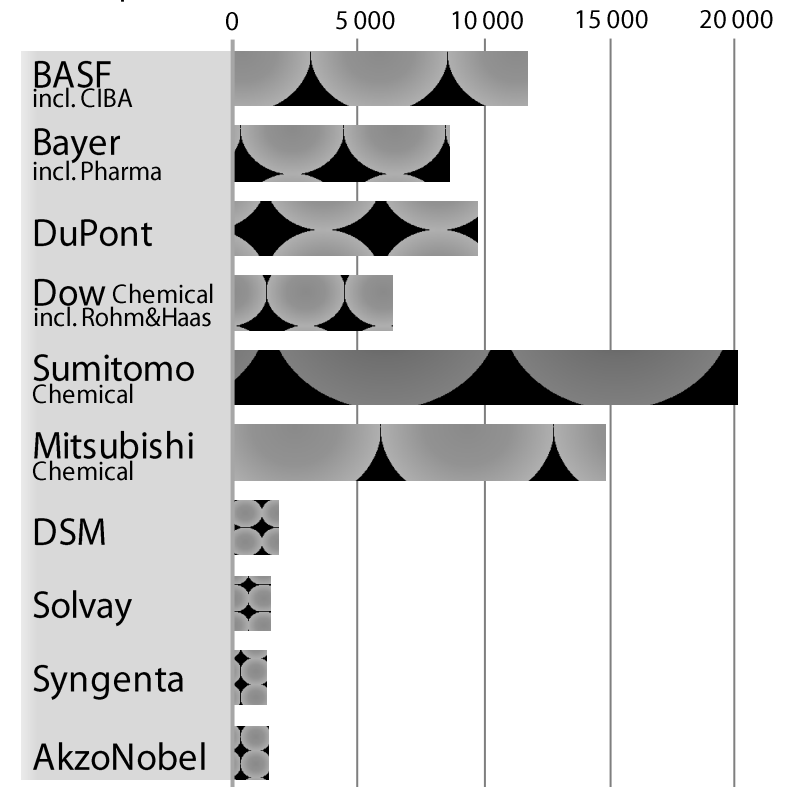
Competitive Impact™

Average contribution to competitive advantage
Worldwide average patent ≈ 1



Portfolio Size

Number of valid patents and pending patent applications
(Active patent families)

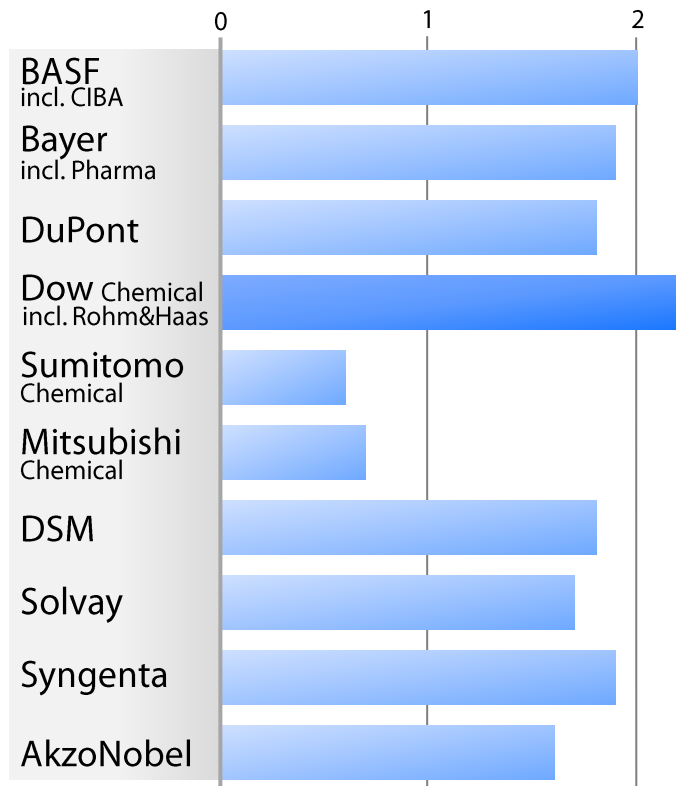


Due to peculiarities in Japanese patent law, Sumitomo Chemical and Mitsubishi Chemical create a high amount of national Japanese 'micro'-patents that have a low impact.

Dow Chemical's patents tend to be more relevant

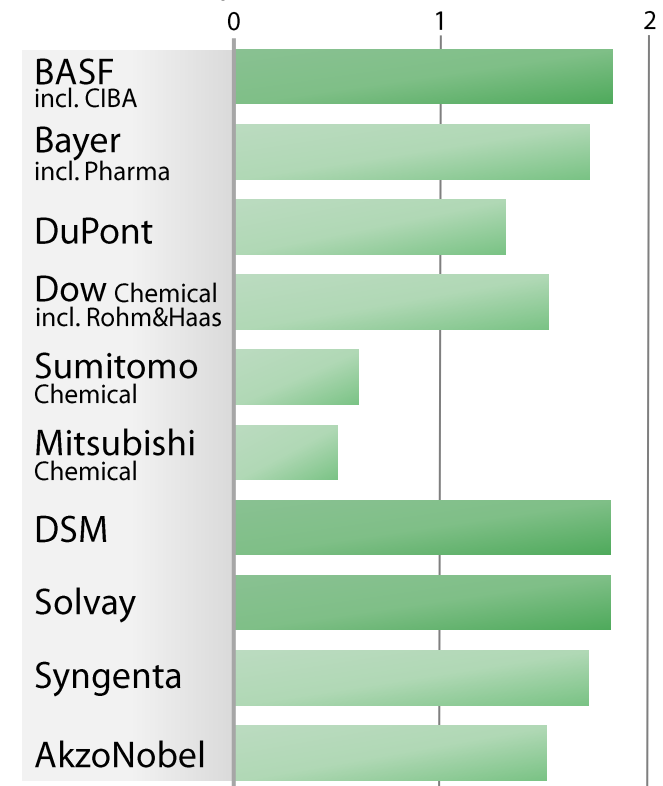
Technology Relevance™

Average importance for subsequent developments
Worldwide average patent = 1



Market Coverage™

Average extend of global patent protection
Stated as multiple of US market size



Average Technology Relevance is higher if a firm is more selective in filing patents.
Average Market Coverage is higher if a firm secures broad protection more often.

Comparison of benchmarking methods

The Patent Asset Index is the first reliable global patent benchmark

	Patent Asset Index	R&D exp.	The Patent Board	1790 Analytics
BASF (incl. CIBA)	1	2	2	3
Bayer*	2	1*	38	>
DuPont	3	3	1	1
Dow Chemical (incl. R&H)	4	4	3	2**
Sumitomo Chemical	5	7	18	15
Mitsubishi Chemical	6	6	14	5
DSM	7	10	>	>
Solvay	8	8	>	>
Syngenta	9	5	>	>
AkzoNobel	10	9	>	>

* Patent Asset Index and R&D exp. include pharmaceuticals. R&D exp. in chemicals rank #4.

** Rohm&Haas was ranked #2, Dow Chemical was ranked #8.

> Not within top 50 / top 20 companies ranked

In prior benchmarks, 4 out of the 10 firms that invest most in R&D are ranked lower than 50 (The Patent Board/The Wall Street Journal) or lower than 20 (1790 Analytics/IEEE Spectrum).

Source: Ernst/Omland: "The Patent Asset Index - A New Approach to Benchmark Patent Portfolios" (forthcoming).