

Market Study: World Biocide Market

Markets, Products, Applications, Innovations,
Chances & risks, Competition, Prospects to 2015

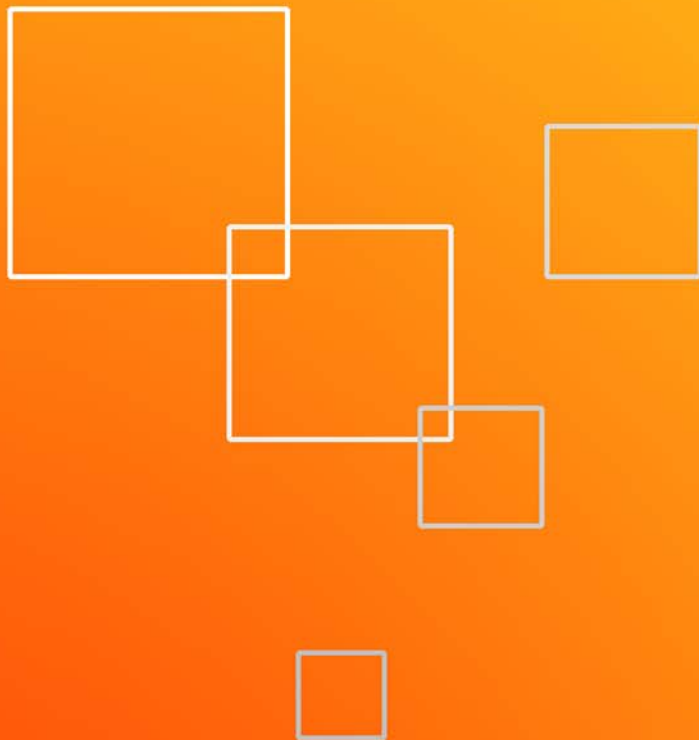


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Note:

EUR 1 = US\$1.3

Regions:

North America: US, Canada, Mexico (NAFTA region)

Asia Pacific: Countries of Asia, Australia, New Zealand

Asia Pacific*: Asia Pacific excluding Japan

Markets: excl. markets in agro-forestry and medicines

As disinfectants, preservatives, antiseptics, or antifouling agents, biocides find application in a wide range of areas. The use of biocides to prevent or control microbiological growth has become indispensable in many of industrial and consumer goods.

In term of value

Water treatment is traditionally the most important application market, and will remain the largest one in the near future. It accounts for roughly 20% of the total biocide demand and presents below average growth. Estimated at US\$1.28 billion in 2008, the demand is forecast to reach US\$1.34 billion at 2.5% p.a. by 2010 and to approach US\$1.7 billion at 4.5% p.a. by 2015.

Wood preservation, another major application market of biocides, demonstrate similar growth prospect to that of water treatment. With estimated market size of US\$770 million in 2008, it makes up 12% of the global biocide consumption. The total wood preservative market is expected to reach US\$ 1 billion by 2015.

With the industrialization of food supply, food & beverage has grown from a tiny application market to the second largest one for the biocide suppliers during the last two decades. Already exceeding US\$1 billion in 2008, the biocide demand in food & beverage is expected to grow at 4% p.a. to reach US\$1.1 billion by 2010 and to approach US\$1.5 billion at 5.5% p.a. by 2015.

Personal care and cosmetics is another application market where biocides are experiencing more promising growth prospect than in food & beverage. Personal care and cosmetics is not only the fastest growing but also the most lucrative market for biocide suppliers. In term of value, personal care & cosmetics accounts for roughly 13% of the total biocide demand, with US\$830 million in 2008. The demand is projected to reach US\$910 million by 2010 and surpass US\$1.2 billion by 2015.

(Vol. I, P.37)

some European countries. There is an increase in the use of bromine and bromine-based products as oxidizers and of organic biocides as non-oxidizers.

Expansion in new branches

Biocides find increasing use in some new branches, either to prolong lifespan of these products, or due to the development of these branches. A typical example is wood-plastic composites (WPC). WPC is initially used for out-door building material, but now also increasingly used for window and door frames, and indoor furniture. International market for WPC grows rapidly for its advantages over wood and the notion that WPC uses plastic and wood wastes. Like plastics, WPC also needs biocides to prevent the growth of mold and other destructive bacteria, which drives the biocide market.

Another example is the pulp and paper industry. The expanding use of recycled paper and paperboard as fiber raw materials has made pulp and paper industry an established application market for biocides.

Concerns over food safety drive biocide market in food and beverage processing

The bacteria can cause serious illness in humans. As processed food and beverage is penetrating and expanding in every family, the concerns over food safety grow from both consumer side and the government side. Such concerns drive market demand on cleaning, disinfecting and preservative chemicals in food and beverage processing.

Price Increase for Industrial Biocides

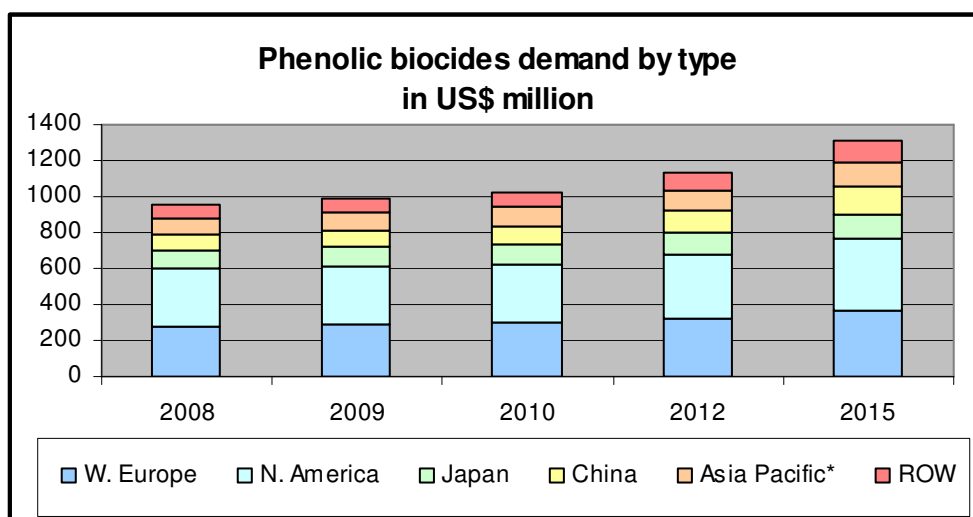
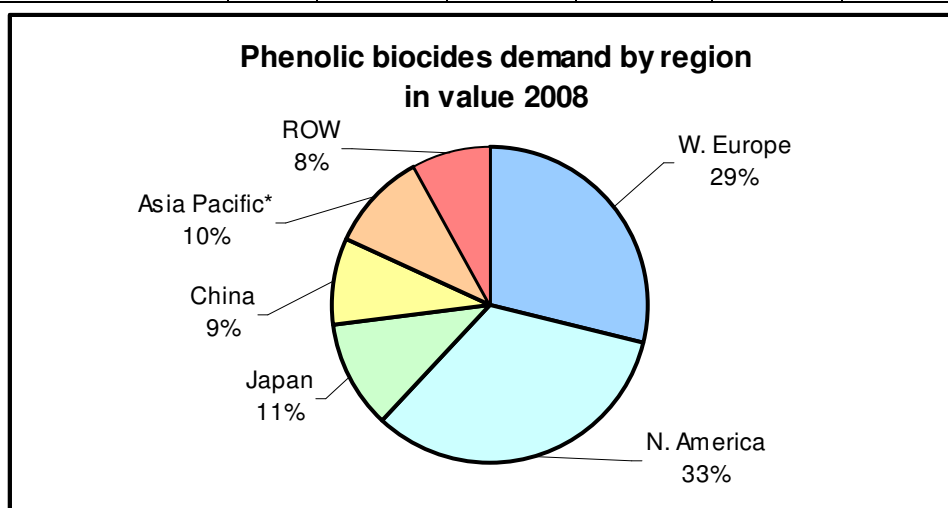
The biocide market saw significant price increase in 2008, led by global top biocide suppliers. Despite economic crisis and fall of raw material prices, the margin of overall chemical industry still remain low due to the ever stricter regulations. Price increase is a therefore one of the suppliers' measures to compensate the lost margin.

(Vol. I, P. 47)

4.5.2.2 Phenolic biocides demand by region

Phenolic biocides demand by region in US\$ million

| | 2008 | 2009 | 2010 | AAGR | 2012 | 2015 | AAGR |
|---------------|------|------|------|------|------|------|------|
| W. Europe | 278 | 287 | 295 | 2,5% | 320 | 361 | 4,0% |
| N. America | 317 | 325 | 332 | 2,0% | 361 | 407 | 4,0% |
| Japan | 106 | 108 | 111 | 2,0% | 119 | 132 | 3,5% |
| China | 86 | 92 | 98 | 6,0% | 117 | 152 | 9,0% |
| Asia Pacific* | 96 | 100 | 105 | 4,0% | 118 | 141 | 6,0% |
| ROW | 77 | 80 | 84 | 4,0% | 94 | 113 | 6,0% |
| Total | 960 | 992 | 1025 | 3,0% | 1129 | 1306 | 5,0% |



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5.4.3 Market trends and chances

Meetings tighter regulations

Biocides in personal care & cosmetics face ever stricter regulations than biocides in most other applications since they have direct contact to consumers. For example, these products are regulated in the US by FDA under the cosmetic provisions of the law.

In recently years, preservative suppliers are under mounting pressure to protect both human health and the environment.

Developing regions offer a lot of opportunities for biocides

Rapidly growing consumption of personal care products and cosmetics in developing regions also offers a lot of opportunities for preservative manufactures. Markets such as China, Eastern Europe, India, and South America continue to present growing demand for personal care biocides on the back of increasing consumption rates and the fact that consumers are increasingly aware of health protection and discriminatory about ingredients in the products they purchase.

The developing regions are not only promising markets for commodity biocides but also for high value biocides as well as novel products.

Biocide blends for broader spectrum protection

Alternatives to the traditional preservatives are introduced as biocide suppliers are under regulatory pressure and public concern over their safety and environmental impact. However few alternatives have the same broad protection as the traditional ones. Most new generation preservatives are therefore based on combination of two or more biocides to offer broader spectrum protection.

Alternatives to Parabens

High value personal care products & cosmetics makers, e.g. producers of prestige makeup, dermatology brands and “Natural” brands are replacing
(Vol. I P.221)

Eka Chemicals AB (Sweden)

Lilla Bommen 1,

Göteborg

Sweden

Phone: 46 (0)31 58 70 00

Fax: 46 (0)31 58 79 20

<http://www.eka.com>

Year of foundation: 1895

Sales 2007: EUR 990 million

Number of employees: 2703

Company profile

Eka Chemicals AB operates as a wholly owned subsidiary of Akzo Nobel NV

Eka Chemicals is one of the world's leading manufacturers of bleaching and performance chemicals for the pulp and paper industry. The company also develops and markets specialty chemicals for other industrial applications.

The company's product line include Paper chemicals, Bleaching chemicals, Water treatment chemicals, Separation Products, Colloidal Silica, Expancel, Purate, Fine Chemicals, Permascand, etc.

Biocides:

Eka provides biocides based on chlorine dioxide, potassium chlorate, sodium chlorate. It offers biocides for water treatment under the brand ClO₂ Purate®. Eka ClO₂ Purate is a patented and proprietary formulation of sodium chlorate, hydrogen peroxide and stabilizers. It is combined with sulfuric acid in Eka's SVP-Pure® generator to produce a chlorine dioxide solution.

Eka ClO₂ Purate is used in typical water treatment applications such as drinking water, cooling towers, process water, waste water, phenol destruction, odor control, and more. It is also used in small non-wood pulp mills.

(Vol. II, P. 92)



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| Code | Product | Page | Price Hardcopy* | Price Hardcopy+CD** |
|------------|---|------------|--|--|
| C4651 | World Biocide Market Volume I | Ca. 240 | <input type="checkbox"/> EUR 1190 | <input type="checkbox"/> EUR 1390 |
| C4652 | World Biocide Market Volume II | Ca. 300 | <input type="checkbox"/> EUR 590 | <input type="checkbox"/> EUR 690 |
| C4650 | World Biocide Market Total (Volume I + II) | Ca. 540 | <input type="checkbox"/> EUR 1590 | <input type="checkbox"/> EUR 1790 |
| Sum | | | <input type="checkbox"/> EUR _____ | <input type="checkbox"/> EUR _____ |

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