

Lignosulfonates

June 2023

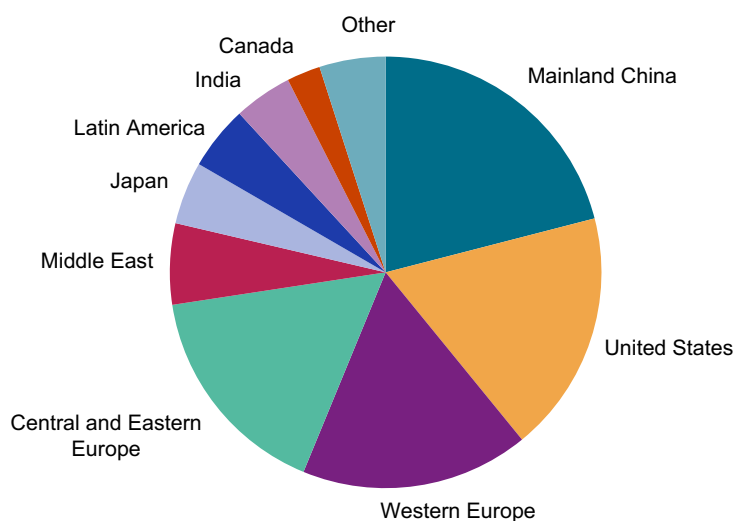
Abstract

The two most abundant biopolymers on earth are cellulose and lignin. Both are harvested from trees. Cellulose is the main constituent of plant cell walls and of vegetable fibers such as cotton. Lignins are formed in the cell walls of wood and provide structure to the plant. They do not degrade or rot easily. Cellulose is separated from lignin to make paper and packaging materials, while lignin is much less desired and often burned for fuel. Some lignin is recovered in the form of lignosulfonates, which are used mainly as dispersants.

Lignosulfonates consist of a mixture of sulfonated lignin, sugars, sugar acids, resins, and inorganic chemicals. Most lignosulfonates are obtained from the spent pulping liquor of sulfite pulping operations; some are also produced by postsulfonation of lignins obtained by sulfate pulping (kraft process). Recovered coproduct lignosulfonates may be used with little or no additional treatment or they may be converted to specialty materials with the chemical and physical properties adjusted for specific end-use markets.

The following pie chart shows world consumption of lignosulfonates:

World consumption of lignosulfonates — 2023



Data compiled April 28, 2023.
Source: S&P Global Commodity Insights.
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The largest-volume use of lignosulfonates is in concrete admixtures, but they are also used in a wide variety of functions where they serve as dispersants and binders in the construction, mining, agricultural, and many other industries. Use in concrete admixtures has stagnated, or even decreased, in Western Europe, the United States, mainland China and Japan as a result of competition from polycarboxylate-based products that feature higher performance with higher concrete strength. However, use of lignosulfonates in developing countries continues to increase as it displays properties that are sufficient for many projects and is priced lower than competitive products.

Most of the end uses are well established. A few new applications have been commercialized, including use as a feed additive for swine, as a preservative in corn and cob maize silage, and as a dispersant in foodstuffs and drink for carotenoids and fat-soluble vitamins.

In the longer run, the industry is hoping that demand for lignosulfonates will grow because of its “greenness,” since it is sourced from renewable feedstocks. Lignosulfonates could conceivably be converted to aromatic monomers and oligomers or can be modified by traditional chemistry in water.

The industry consists of many smaller, independent producers, especially in mainland China. There have been considerable reductions in capacity over the last 20 years, and the industry could consolidate further. The two largest lignosulfonate producers are Borregaard LignoTech and Rayonier. Together, these two companies accounted for nearly 43% of world lignosulfonate capacity as of April 2023.

The majority of the lignosulfonates produced at sulfite pulping operations are not isolated and are burned for fuel, as the market is limited. Since lignosulfonates have a relatively low monetary value, shipping costs usually make transportation of the liquids over long distances prohibitive. Dried lignosulfonates dominate overseas trade and overland lignosulfonate trade over distances greater than 500 miles (800 kilometers).

The global market for lignosulfonates is forecast to grow slowly, at an average annual rate of about 1.9%.

For more detailed information, see the table of contents, shown below.

S&P Global’s Chemical Economics Handbook – Lignosulfonates is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including



Global summary;
regional coverage



Producers with
annual capacities
and plant sites



Production figures
and trends



Consumption and
forecasts by end use
application



Manufacturing
processes and
environmental issues



Trade - imports
and exports

Key benefits

S&P Global's Chemical Economics Handbook – Lignosulfonates has been compiled using primary interviews with key suppliers and organizations, and leading representatives from the industry in combination with S&P Global's unparalleled access to upstream and downstream market intelligence and expert insights into industry dynamics, trade, and economics.

This report can help you

- Identify trends and driving forces influencing chemical markets
- Forecast and plan for future demand
- Understand the impact of competing materials
- Identify and evaluate potential customers and competitors
- Evaluate producers
- Track changing prices and trade movements
- Analyze the impact of feedstocks, regulations, and other factors on chemical profitability

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