



Answers to questions about **LIGNOSULFONATES**

Q. What are lignosulfonates and where do they come from?

A. Lignosulfonates are complex polymers derived from trees. The wood from trees is composed mainly of three macromolecular components – cellulose, hemicellulose and lignin. In the sulfite pulping process, the lignins are sulfonated so they become water-soluble and thus can be separated from the insoluble cellulose. The soluble lignins are called lignosulfonates.

Q. What are lignosulfonates used for?

A. Lignosulfonates are extremely versatile and are used in a wide variety of industrial applications. While generally associated with dust control and surface stabilization for roads, they are used as binders, dispersants, emulsifiers and sequestrants in a host of products such as gypsum board, animal feed pellets and micronutrient systems.

Q. Are lignosulfonates “environmentally friendly?”

A. Extensive studies have been conducted to evaluate the effects of lignosulfonates on the environment. Results show that they are not harmful to plants, animals or aquatic life when properly manufactured and applied. Lignosulfonates have been used as a treatment for dirt roads in Europe and the U.S. since the 1920’s.

Q. Do lignosulfonates contain heavy metals?

A. Lignosulfonates are derived from wood and thus contain the metals that are naturally present in trees. The levels and types of metals vary depending upon the types of trees and the soil on which they were grown.

The amount of metals typically found in lignosulfonates is well below one part per million (ppm). The industry has voluntary standards for the levels of heavy metals in lignosulfonates.

Q. Do lignosulfonates contain dioxins?

A. Dioxins are occasionally associated with the pulp bleaching process used in the wood pulp industry. However, since lignosulfonates **are removed from the pulp prior to bleaching**, dioxins are not manufactured into the product.

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However, just as with other substances, lignins can contain trace amounts of dioxins if they come into contact with dioxin-containing materials. The U.S. Environmental Protection Agency (EPA) reported in 1994 that the major source of dioxin is airborne contamination from incineration. Consequently, dioxins are practically ubiquitous.

Q. Are lignosulfonates toxic?

A. Lignins are no more toxic than table sugar. In other words, they are relatively harmless. Animal toxicity studies reveal that baking soda, table salt and Vitamin C all are significantly more toxic than lignins.

Perhaps the best testimony to the safety of lignosulfonates is the fact that the U.S. Food and Drug Administration has issued nine approvals for their use in food contact applications. They also approved for use as a pelletizing and binding aid in animal feeds.

Q. Can lignosulfonates trigger asthma attacks?

A. No, in fact, when used as a dust suppressant they can help to control particulate matter that might otherwise induce asthmatic symptoms.

Lignosulfonate solutions coat individual road particles with a thin adhesive-like film that binds the particles together thereby controlling dust that might otherwise adversely affect asthmatics.

Q. Can lignosulfonates decompose into sulfur?

A. The sulfur bound in lignosulfonates is oxidized to sulfate – not sulfur – after application. There are no studies in the scientific literature citing sulfate as a causative factor in asthmatic reactions.

