

Material Safety Data Sheet

Safeguard

Chemical product and company identification

Product Name:	Safeguard	Manufacturer:	Safeguard Inc.
Grade:	Technical		P.O. Box 922
Product Use:	Industrial Manufacturing		Wading River, N.Y.
Chemical Family:	Inorganic Borates	Emergency Phone Number:	
CAS registry:	#1303-96-4		516-929-3273

Hazard Identification

Emergency overview

Safeguard is a clear liquid substance that is not flammable, combustible, or explosive, and has low acute oral and dermal toxicity.

Potential ecological effects

Large amounts of Safeguard can be harmful to plants and other species. Therefore, releases to the environment should be minimized.

Potential Health Effects

Routes of exposure

Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because Safeguard is poorly absorbed through intact skin.

Inhalation

Occasional mild irritation effects to nose and throat may occur from inhalation of Safeguard dust at levels greater than 10 mg/m.

Eye Contact

Safeguard is non-irritating to eyes in normal industrial use.

Skin Contact

Safeguard does not cause skin irritation to intact skin.

Ingestion

Products containing Safeguard are NOT intended for ingestion. Safeguard has a low acute toxicity. Small amounts (e.g. a teaspoon full) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Cancer

Safeguard is not a known carcinogen.

Reproductive/Developmental

Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effects on reproduction.

Target Organs

No target organs have been identified in humans. High dose animal ingestion studies indicate the testes are the target organs in male animals.

Signs and Symptoms of Exposure

Symptoms of accidental over-exposure to Safeguard have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting and diarrhea with delayed effects of skin redness and peeling.

First Aid Measures

Inhalation

If symptoms such as nose or throat irritation are observed, remove person to fresh air.

Eye Contact

Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

Skin Contact

No treatment necessary because non-irritating.

Ingestion

Swallowing small quantities will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

Fire Fighting Measures.

General Hazard

None, because Safeguard is not flammable, combustible or explosive. The product is itself retardant.

Extinguishing Media

Any fire extinguishing media may be used on nearby fires, flammability classification (29 CFR 1910.1200): Non-flammable solid.

Accidental Release Measures

General

Safeguard is a water-soluble clear liquid that may, at high concentrations, cause damage to trees or vegetation by root absorption.

Land Spill

Vacuum, shovel or sweep up safeguard and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during cleanup and disposal. No personal protective equipment is needed to clean up land spills.

Spillage into Water

Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal

environmental background level. Safeguard is a non-hazardous waste when spilled or disposed of as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261).

Handling and Storage

General

No special handling precautions are required. Good housekeeping procedures should be followed.

Storage Temperature

Ambient

Storage Pressure

Atmospheric

Exposure Controls/Personal Protection

Engineering Controls

Use local exhaust ventilation to keep airborne concentrations of Safeguard below permissible exposure levels.

Personal Protection

Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators should be used. Eye goggles and gloves are not required for normal industrial exposures.

Physical Chemical Properties

Appearance

Clear, odorless liquid

Specific Gravity

1.71

Vapor Pressure

Negligible @ 20 C

Melting Point

62 C (144 F) (heated in closed space)

pH @ 20 C

6.0 (0.1% solution); 5.1 (1.0% solution); 3.7 (4.7% solution)

Molecular Weight

381.37

Stability and Reactivity

General

Safeguard is a stable product, but when heated it loses water, eventually forming anhydrous borax (Na B O)

Incompatible Materials and Conditions to Avoid

Safeguard reacts as a weak acid which may cause corrosion of base metals. Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

Hazardous Decomposition

None

Toxicological Information

Ingestion

Low acute oral toxicity; LD in rats is 4,500 to 5,000 mg/kg body weight.

Skin/Dermal

Low acute dermal toxicity; LD in rabbits is greater than 10,000 mg/kg of body weight. Safeguard is poorly absorbed through the intact skin

Inhalation

Low acute inhalation toxicity; LC in rats is greater than 2.0 mg/L

Skin Irritation

Non-irritant

Eye Irritation

Draize test in rabbits produced eye irritation effects. Safeguard is not considered to be a human eye irritant in normal industrial use.

Sensitization

Safeguard is not a skin sensitizer

Reproductive/Developmental Toxicity

Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrates developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed.

Carcinogenicity/Mutagenicity

No evidence of carcinogenicity in mice. No mutagenic activity was observed for boric acid in a battery of short-term mutagenicity assays.

Human Data

Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust, recent epidemiology study under the condition of normal occupational exposure to borate dusts indicated no effect on fertility.

Ecological Information

Phytotoxicity

Safeguard is an essential micronutrient for healthy growth of plants; however it can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimize the amount of Safeguard to the environment.

Algal Toxicity

Green algae, *Scenedesmus subspicatus* – 96-hr EC = 24 mg B/L

Invertebrate toxicity