MSDS
Material Safety Data sheet

Gillespie Borate

Chemical Product and Company Identification

Product Name: Gillespie Borate

Manufacturer: Hammill & Gillespie
154 South Livingston Avenue
Livingston, NJ 07039 USA

Grades: Technical

Chemical formula: Mixture of $Na_2O{\cdot}2CaO{\cdot}5B_2O_3{\cdot}16H_2O$ and various mineral aluminates, silicates, and carbonates.

Chemical Family and CAS Registry numbers: Inorganic Borates, 12007-56-6 and 1319-33-1

Composition/Information on Ingredients

This product is composed of a mixture of the minerals Ulexite ($Na_2O{\cdot}2CaO{\cdot}5B_2O_3{\cdot}16H_2O$) with various clay minerals (aluminum silicates) and alkaline earth carbonates and silicates. This material contains approximately 25% B_2O_3, 23% CaO, 4% total alkali and 31% loss on ignition.

Hazard Identification

Emergency Overview:
Gillespie Borate is a gray-white mineral that is not flammable, combustible, or explosive, and it presents no unusual hazard if involved in a fire. Gillespie Borate presents little or no hazard to humans and has low acute oral and dermal toxicity. Care should be taken to minimize the amounts of Gillespie Borate released to the environment to avoid ecological effects.

Potential Ecological effects:

An excess of Gillespie Borate can be harmful to boron-sensitive plants and other ecological systems.

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 Gillespie Borate is not absorbed through intact skin.
Inhalation: Occasional mild irritation effect to nose and throat may occur from inhalation of Gillespie Borate dusts at levels greater than 10 mg/m.
Eye contact: Gillespie Borate is not irritating to eyes in normal industrial use.
Skin contact: Gillespie Borate does not cause irritation to intact skin.
Ingestion: Products containing Gillespie Borate are not intended for ingestion. Gillespie Borate has a relatively low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects.. Swallowing amounts larger than that may cause gastrointestinal symptoms.
Cancer: Gillespie Borate is not considered a carcinogen.
Reproductive: Long-term high dose animal ingestion studies have demonstrated reproductive effects in male animals. A human study of occupational exposure to borate dust showed no adverse effect to reproduction.
Developmental: High dose animal ingestion studies have demonstrated developmental effects in fetuses of pregnant animals, including fetal weight loss.
Target Organs: No target organ has 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 borate products have been associated by ingestion or by 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: No specific treatment is necessary since Gillespie Borate is not likely to be hazardous by inhalation. Prolonged exposure to dust levels in excess of regulatory limits should always be avoided.
Eye contact: Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medial attention.
Skin contact: No treatment is necessary because Gillespie Borate is non-irritating.
Ingestion: Swallowing less than one teaspoon will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.
Note to Physicians: Observation only is required for adult ingestion of a few grams of GB. For ingestion of larger amounts, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analysis of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning to guide treatment. (Further information: Litovitz, T.L., Norman, S. A., Veltri, J. C., Annual Report of the American Association of Poison control Centers Data collection system., Am. J. Energ. Med. 1986; 4:427-458).

Fire fighting Measures

General Hazard: None, since Gillespie Borate is not flammable, combustible, or explosive. The product itself is a flame 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: Excessive amounts of Gillespie Borate released to the environment may cause damage to trees or vegetation by root absorption.
Land Spill: Vacuum, shovel or sweep up Gillespie Borate and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. The use of eye goggles is recommended during the clean up of the spills

Water Spill: Gillespie Borate will cause localized contamination of surrounding waters depending on the quantity dissolve in the waters. At high concentrations some damage to local vegetation, fish and other aquatic life may be expected.
GB is a non-hazardous waste when spilled or disposed of, as defined in the Resource conservation and Recovery Act (RCRA) regulation (40 CFR 261).

Handling and Storage

Storage temperature:	Ambient
Storage Pressure:	Atmospheric
Special Sensitivity:	Moisture causes some caking

General: Avoid contact with eyes and wash thoroughly after handling. Dry indoor storage is recommended. Good housekeeping procedures should be followed to minimize dust generation and accumulation.

Exposure controls/Personal Protection

Engineering Controls: Use Local exhaust ventilation to keep airborne concentrations of Gillespie Borate dust below permissible exposure levels.
Personal Protection: Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators must be used. Eye goggles and gloves are recommended, especially in excessively dusty environments.

Occupational Exposure Limits:
GB is listed/regulated by OSHGA, California OSHA and ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust".
OSHA: PEL = 15 mg/m^3 total dust and 5 mg/m^3 respirable dust
ACGIH: TLV = 5 mg/m^3
California OSHA: PEL = 5 mg/m^3
PEL = Permissible Exposure Limit
TLV = Threshold Limit Value

Physical and chemical Properties

Appearance:	Off-white mineral powder	**Viscosity:**	Not applicable
Bulk Density:	50 - 60 lbs/ft^3	**Boiling Point**	Not applicable
Vapor Pressure:	Negligible at 20° C	**Flash Point:**	None

Stability and Reactivity

General: Gillespie Borate is a stable product
Incompatible Materials and conditions to Avoid:
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

Other Information

Product Label Text Hazard Information

- May be harmful if swallowed
- May cause reproductive harm or birth defects based on animal data.
- Avoid contamination of food or feed.
- Not for food, drug or pesticidal use.
- Refer to MSDS
- Keep Out of Reach of Children

National Fire Protection Association Classification (NFPA)
Health: 0
Flammability: 0
Reactivity: 0

Hazardous Materials Information systems (HMIS):
Blue (Acute Health): 0
Red (Flammability): 0
Yellow (Reactivity): 0