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SAFETY DATA SHEET

Section 1. Identification

Product Name: Tris(pentaflourophenyl)borane
Product Type: Solid
CAS Number: 1109-15-5.
Product Number: B9155
Product Manufacturer: Ereztech LLC
11555 Medlock Bridge Road, Suite 100
Johns Creek, GA 30097
Product Information: (888) 658-1221
In case of an emergency: (888) 658-1221 (for spill, leak, fire or exposure)
*** Contact manufacturer for all non-emergency calls.

Section 2. Hazards Identification

Emergency Overview

Appearance/Odor: White to pale gray powder, odor not determined.

Classification: ACUTE TOXICITY, ORAL; - Category 3, H301
SKIN CORROSION/IRRITATION; - Category 2, H315
SERIOUS EYE DAMAGE/EYE IRRITATION; - Category 2A
SPECIFIC TARGET ORGAN TOXICITY, SINGLE EXPOSURE; - Category 3, H335
HAZARDOUS TO THE AQUATIC ENVIRONMENT, ACUTE TOXICITY; - Category 1, H400
HAZARDOUS TO THE AQUATIC ENVIRONMENT, CHRONIC TOXICITY; - Category 1, H410

Signal word : DANGER

Hazard statements:
H301: Toxic if swallowed.
H315: Causes skin irritation.
H319: Causes eye irritation.
H335: May cause respiratory irritation.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Section 2. Hazards Identification

Hazard pictograms:

Precautionary statements

Prevention:

P261: Avoid breathing dust.
P264: Wash exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340: IF INHALED: Removed victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical attention/advice.
P362: Take off contaminated clothing and wash before reuse.
P391: Collect spillage.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved wasted disposal plant.

GHS label elements

General: None.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards not otherwise classified: None known.

Section 3. Composition/Information on Ingredients

Substances

Formula : $C_{18}BF_{15}$
Molecular weight : 511.98 g/mol
CAS-No. : 1109-15-5

Ingredient Name	%	CAS Number
Tris(pentaflourophenyl)borane	100	1109-15-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First Aid Measures

Description of Necessary First Aid Measures

General Advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue rinsing.

Skin Contact: Wash off contaminated skin with soap and plenty of water. Get medical attention if irritation develops and persists or if burns occur.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Call a POISON CENTER or doctor/physician.

Ingestion: Call a physician or POISON CONTROL CENTER immediately. Rinse mouth. Do NOT induce vomiting. Remove dentures if any. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most Important Symptoms/Effects, Acute And Delayed Potential Acute Health Effects

Eye Contact: May cause immediate or delayed severe eye irritation. Symptoms may include severe pain, profuse tearing, and redness.

Inhalation: Inhalation may irritate the respiratory tract. Symptoms may include coughing, wheezing, laryngitis, shortness of breath, headache and nausea. Symptoms may be delayed. Absorption through the lungs can occur causing symptoms similar to ingestion. Convulsions may occur. There may be a loss of consciousness.

Section 4. First Aid Measures

Skin Contact: May produce painful irritation or contact dermatitis. Absorption through the skin may be fatal.

Ingestion: May cause painful irritation of mouth and throat. Vomiting may occur. Convulsions may occur. There may be a loss of consciousness.

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician: Treat symptomatically.

Specific Treatments: No specific treatment.

Protection of First Responders: No action taken shall be taken involving any personal risk without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire Fighting Measures

General Hazards: None known.

Suitable Extinguishing Media: Use sand, dry chemical powder, foam or carbon dioxide (CO_2). Suitable extinguishing media for the surrounding fire should be used. Fight larger fires with water spray or alcohol resistant foam. Use water spray to cool containers.

Unsuitable Extinguishing Media: None known.

Unusual Fire and Explosion Product of Combustion: Decomposition products may include carbon oxides, hydrogen fluoride and borane/boron oxide fumes.

Protection of Firefighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Fire-fighters should wear appropriate protection equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in a positive pressure mode.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

For Non-emergency Personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid inhalation of dust. Provide adequate ventilation. Wear respiratory protection. Put on appropriate personal protective equipment.

Section 6. Accidental Release Measures

For Emergency Responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental Precautions: Do not allow dispersal of spilled material and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for Containment

Small Spill: Sweep up material without creating dust and place in an appropriate waste disposal container. Do not flush spill area with water or aqueous cleaning solution. Dispose of via a licensed waste disposal contractor.

Large Spill: Contain and collect spillage without creating dust and place in dry container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Do not flush spill area with water or aqueous cleaning product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Precautions: Avoid contact with skin and eyes. Keep container tightly sealed. Avoid inhalation of dusts. Avoid prolonged exposure. Provide adequate ventilation. Store in cool/dry place in tightly closed container.

Protective Measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dusts. Keep in the original container kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

General Occupational Hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and Storage

Safe Storage Conditions: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidizing agents, water/moisture, air) and food and drink. Keep container tightly closed and sealed until ready for use. Store locked up.

Section 8. Exposure Controls/Personal Protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and conduct regular repairs. Waste from these procedures should be handled in accordance with Section 13.

Occupational Exposure Limits: No exposure limits noted for this material.

Engineering Controls: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Provide an eyewash/shower station.

Environmental Exposure Controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual Protection Measures

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Remove all soiled and contaminated clothing immediately. Do not inhale dusts. Avoid contact with eyes and skin. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles, faceshield (8-inch minimum). Refer to 29 CFR 1910.133, ANSI Z87.1, or European Standard EN166.

Section 8. Exposure Controls/Personal Protection

Skin Protection

Hand Protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Chemical-resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Neoprene or nitrile rubber.

Other Skin Protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

Physical State: Powder.

Color: White to pale gray.

Odor: No data available.

Odor Threshold: No data available.

pH: No data available.

Melting Point: 126 - 131°C.

Section 9. Physical and Chemical Properties

Boiling Point: No data available.
Flash Point: No data available.
Auto-ignition temperature: No data available.
Specific Gravity: No data available.
Vapor Pressure: No data available.
Vapor Density: No data available.
Water Solubility: No data available.
Evaporation Rate: No data available.
Viscosity: No data available.
VOC Content: No data available.

VOCs are calculated following the requirements under 40 CFR, Part 59, Subpart C for Consumer Products and Subpart D for Architectural Coatings.

Section 10. Stability and Reactivity

Reactivity: No specific data available.

Chemical Stability: Stable at normal ambient temperature and pressure and under recommended storage conditions.

Conditions to Avoid: Heat, light, water/moisture.

Incompatible Materials: Strong oxidizing agents, strong acids, trialkylaluminum compounds.

Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products formed under fire conditions: carbon oxides, hydrogen fluoride and borane/boron oxide fumes. In the event of a fire: see section 5.

Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological Information

Information on Toxicological Effects

Acute Toxicity

Product/Ingredient Name	Result	Species	Dose	Exposure
Tris(pentaflourophenyl)borane	LD50 Oral	Rat	100-150 mg/kg	-

Irritation/Corrosion : No specific data available.

Sensitization : No specific data available.

Germ Cell Mutagencity : No effects known.

Section 11. Toxicological Information

Carcinogenity

IARC	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
NTP	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.
OSHA	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.
Reproductive Toxicity	:	This product is not expected to cause reproductive or developmental effects.
Teratogenicity	:	No specific data available.
Specific Target Organ Toxicity (single exposure)	:	Respiratory tract irritation.
Specific Target Organ Toxicity (repeat exposure)	:	No specific data available.
Aspiration Hazard	:	No specific data available.
Information on the likely routes of exposure	:	No specific data available.
Additional Information	:	None

Section 12. Ecological Information

Numerical Measures of Toxicity

Toxicity to Fish	:	No specific data available.
Toxicity to daphnia and other aquatic invertebrates	:	No specific data available.
Toxicity to algae	:	No specific data available.

Persistence and Degradability

Biodegradability	:	No specific data available.
Bioaccumulative potential	:	No specific data available.
Mobility in soil	:	No specific data available.
Other Adverse Effects	:	Toxic to aquatic organisms. Toxic to soil organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13. Disposal Considerations

Waste Treatment Methods

Product Dispose of in accordance with local, state, and federal regulations. Refer to 40 CFR 260-299 for complete waste disposal regulations. Consult your local, state, or federal agency before disposing of any chemicals.

Contaminated packaging Empty containers retain product residue (solids and dusts) and can be dangerous.

Section 14. Transport Information

	DOT	IMDG	IATA
UN Number	UN2811	UN2811	UN2811
UN Proper Shipping Name	TOXIC SOLID, ORGANIC, N.O.S. Tris(pentaflourophenyl) borane	TOXIC SOLID, ORGANIC, N.O.S. Tris(pentaflourophenyl) borane	TOXIC SOLID, ORGANIC, N.O.S. Tris(pentaflourophenyl) borane
Transport Hazard Classes	6.1	6.1	6.1
Packing Group	III	III	III
Environmental Hazards	Yes	Yes	Yes
Additional Information	-	-	-

Special Precautions for User : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transporting in Bulk According to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

Section 15. Regulatory Information

TSCA (Toxic Substance Control Act):
This product is not listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory). Use of this product is restricted to research and development only. This product must be used under the supervision of a technically qualified individual as defined by the TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

Section 15. Regulatory Information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
None known.

Massachusetts Right To Know Components
No components are subject to Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
No components are subject to Pennsylvania Right to Know Act.

New Jersey Right To Know Components
No components are subject to New Jersey Right to Know Act.

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

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Section 16. Other Information

The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

HMIS Rating

HEALTH	**2**
FLAMMABILITY	**0**
PHYSICAL HAZARD	**0**

History

Date of printing : 4/12/16

Date of issue/Date of Revision : 4/12/16

Date of previous issue : None

References : None available

Abbreviations and Acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DOT: US Department of Transportation
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
HMIS: Hazardous Materials Identification System
IARC: International Agency For Research on Cancer
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
IMDG: International Maritime Code for Dangerous Goods
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
SARA: Superfund Amendments and Reauthorization Act
VOC: Volatile Organic Compound

Disclaimer

The information herein is believed to be accurate and is presented in good faith; however, no warranties or representations are made by Ereztech LLC regarding the accuracy or completeness of the information. Ereztech LLC shall not be liable for any damages resulting from the handling, or from the contact with the above product.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.