1. Product and Company Identification

Trade Name:	Iron Nickel Boron
Chemical Formula:	FeNiB
Recommended Use:	Scientific research and development
Manufacturer/Supplier:	LTS Research Laboratories, Inc.
Street:	37 Ramland Road
City:	Orangeburg
State:	New York
Zip Code:	10962
Country:	USA
Tel #:	855-587-2436 / 855-lts-chem
24-Hour Emergency Contact:	800-424-9300 (US & Canada) +1-703-527-3887 (International

2. Hazards Identification

Signal Word: Danger

Hazard Statements:
H228: Flammable solid
H317: May cause an allergic skin reaction
H350: May cause cancer
H360: May damage fertility or the unborn child
H372: Causes damage to organs through prolonged or repeated exposure
H410: Harmful to aquatic life with long lasting effects

Precautionary Statements:
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces- No smoking
P235+P410: Keep Cool. Protect from Sunlight
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/lighting/equipment
P260: Do not eat breathe dust/fume/gas/mist/vapors/spray
P264: Wash face, hands and any exposed skin thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P272: Contaminated work clothing should not be allowed out of the workplace
P280: Wear protective gloves/protective clothing/eye protection/ face protection
P281: Use personal protective equipment as required
P302+P350: IF ON SKIN: Wash gently with plenty of soap and water
P308+P313: If exposed or concerned: Get medical attention/advice
P333+P313: If skin irritation or rash occurs: Get medical attention/advice
P363: Wash contaminated clothing before reuse
P403+P233: Store in a well-ventilated place. Keep container tightly closed
P405: Store locked up
P407: Maintain airgap between stacks and pallets
P420: Store away from other materials
P501: Dispose of contents/container in accordance with local/national/international regulations

HMIS Health Ratings (0-4):

Health:	2
Flammability:	3
Physical:	1

3. Composition

Chemical Family:	Alloy
Additional Names:	N/A
Iron (Fe):	
Percentage:	0-100 wt%
CAS #:	7439-89-6
EC #:	231-096-4
Nickel (Ni):	
Percentage:	0-100 wt%
CAS #:	7440-02-0
EC #:	231-111-4
Boron (B):	
Percentage:	0-100 wt%
CAS #:	7440-42-8
EC #:	231-151-2

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim ingested or inhaled the substance. Give artificial respiration with the aid of pocket mask equipped with a one way valve or other proper respiratory medical device. Obtain medical attention immediately.
Ingestion:	Do not induce vomiting. Call a Poison Control Center immediately. Clean mouth with water and afterwards drink plenty of water.
Skin:	Wash affected area with mild soap and plenty of water. Obtain medical attention.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

5. Firefighting Measures

Flammability:	Flammable. Dust can form an explosive mixture in air.
Extinguishing Media:	Special powder or extinguishing powder for metal fires. Do not use water, foam or carbon dioxide (CO_2)
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust. If possible, soak up with inert absorbent material
Environmental Precautions:	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Do not allow the material to contaminate the ground water system.

7. Handling and Storage

Handling Conditions:	Wash thoroughly after handling. Wear personal protective equipment. Avoid inhalation and ingestion. Avoid dust formation. May form combustible dust concentrations in air. Do not let it get in to eyes, on skin or on clothing. Do not ingest
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	1 mg/m^3 as Ni, long-term value
Threshold Limit Value:	1.5 mg/m3 as Ni, inhalable fraction, long-term value
Special Equipment:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Respiratory Protection:	Dust Respirator
Protective Gloves:	Nitrile rubber gloves with minimum thickness of 0.11 mm
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

10. Reactivity

Stability:	Moisture Sensitive
Reacts With:	Oxidizing agents, acids, fluorine, halogenated agents, halogens, oxygen, nitriles, aldehydes
Incompatible Conditions:	Moisture/water, heat, avoid dust formation
Hazardous Decomposition Products:	Metal oxide fume, nickel oxides

11. Toxicological Information

Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause an allergic skin reaction
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	Causes damage to organs through prolonged or repeated exposure

Signs & Symptoms: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Aggravated Medical Conditions: N/A

Median Lethal Dose: 30 g/kg for rat by mouth (as Fe)

Carcinogen: IARC-2B: Possibly carcinogenic to humans
NTP: Reasonably anticipated to be a human carcinogen

12. Ecological Information

Aquatic Toxicity: Contains content harmful to aquatic organisms. May have long term adverse effects in the aquatic environment.
Iron (Fe): Toxicity to fish:
LC50 = 13.6 mg\L, 96h static (Morone saxatilis)
Nickel (Ni): Toxicity to Algae: EC50: 0.174 - 0.311 mg/L, 96h statc (Pseudokirchneriella subcapitata)
EC50: = 0.18 mg/L, 72h (Pseudokirchneriella subcapitata)
Toxicity to fish:
LC50: = 10.4 mg\L, 96h static (Cyprinus carpio)
LC50: = 1.3 mg\L, 96h semi static (Cyprinus carpio)
LC50: >100 mg\L, 96h (Brachyandio rerio)
Toxicity to water flea:
EC50: 1 mg\L, 48h Static (Daphnia magna)
EC50: >100 mg\L, 48h (Daphnia magna)
Boric Acid (H_3BO_3): Toxicity to fish:
LC50: 5600 mg\L 96h (Gambusia affinis)
EC50: 115-153 mg\L, 48h (Daphnia magna)

Persistent Bioaccumulation Toxicity: Is not likely mobile in the environment due to its low water solubility.

Very Persistent, Very Bioaccumulative: No

Notes: Do not empty into drains.
Contains a substance which is harmful to aquatic organisms.
Do not allow material to contaminate ground water system.
Do not empty into drains.

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous:	Hazardous as powder only.

Hazard Class:	4.1 Flammable solids
Packing Group:	II
UN Number:	UN3089
Proper Shipping Name:	Metal powders, flammable, n.o.s. (Iron Nickel Boron)

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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