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## 1. Product and Company Identification

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Trade Name: Nickel Niobium Titanium Alloy  
Chemical Formula: NiNbTi  
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)

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## 2. Hazards Identification

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Signal Word: Danger



Hazard Statements:

- H228: Flammable solid
- H250: Catches fire spontaneously if exposed to air
- H317: May cause an allergic skin reaction
- H351: Suspected of causing cancer
- H372: Causes damage to organs through prolonged or repeated exposure
- H412: Harmful to aquatic life with long lasting effects
- EUH018: In use may form combustible dust concentrations in air

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
- P222: Do not allow contact with air
- P231: Handle under inert gas
- P240: Ground/bond container and receiving equipment
- P241: Use explosion-proof electrical/ventilating/lighting/equipment
- P260: Do not 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
- P273: Avoid release to the environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P281: Use personal protective equipment as required
- P302+P352: IF ON SKIN: Wash with soap and water
- P308+P313: IF exposed or concerned: Get medical advice/attention

P333+P313: If skin irritation or a rash occurs: Get medical advice/attention  
P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages  
P363: Wash contaminated clothing before reuse  
P370+P378: In case of fire: Use CO<sub>2</sub>, dry sand, dry chemical or foam for extinction  
P403+P233: Store in a well-ventilated place. Keep container tightly closed  
P405: Store locked up  
P422: Store contents under inert gas  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	2
Flammability:	4
Physical:	1

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### 3. Composition

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Chemical Family:	Alloy
Additional Names:	None

Nickel (Ni)

Percentage:	0-100 wt%
CAS #:	7440-02-0
EC #:	231-111-4

Niobium (Nb)

Percentage:	0-100 wt%
CAS #:	7440-03-1
EC #:	231-113-5

Titanium (Ti)

Percentage:	100 wt%
CAS #:	7440-32-6
EC #:	231-142-3

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### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	N/A

Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Seek medical attention.
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Ingestion:	Rinse mouth with water. Do not induce vomiting. Seek medical attention.
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Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.
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Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.
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## 5. Firefighting Measures

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Flammability:	Flammable as powder
Extinguishing Media:	Do not use water for metal fires. Use alcohol-resistant foam, dry chemical or carbon dioxide.
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.

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## 6. Accidental Release Measures

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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.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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## 7. Handling and Storage

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Handling Conditions:	Wash thoroughly after handling.
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.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	1 mg/m <sup>3</sup> as Ni, long term-value
Threshold Limit Value:	1.5 mg/m <sup>3</sup> as Ni, long term-value
Special Equipment:	None
Respiratory Protection:	Use a recommended dust respirator or mask. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Acids, Strong oxidizing agents, Sulphur compounds, Hydrogen gas, Oxygen, Methanol, Organic solvents, Aluminum, Fluorine, Ammonia, Halogens, Chlorinated solvents
Incompatible Conditions:	Reacts violently with water, Heat, flames and sparks, Moisture sensitive, Air sensitive, Pyrophoric
Hazardous Decomposition Products:	Nickel/Nickel oxides, Niobium oxides, Titanium/Titanium oxides

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## 11. Toxicological Information

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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:	Rash, Itching, Swelling, Trouble breathing, tingling of hands and feet, Dizziness, Lightheadedness, Chest pain, Muscle pain or flushing
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	LD50 Oral - Rat - male and female - > 9,000 mg/kg for Ni LD50 Oral - Rat - female - > 2,000 mg/kg for Nb
Carcinogen:	IARC-2B: Possibly carcinogenic to humans: limited evidence in human in the absence of sufficient evidence in experimental animals. NTP-R: Reasonably anticipated to be a carcinogen, limited evidence of carcinogenicity from epidemiologic studies.

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## 12. Ecological Information

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Aquatic Toxicity:	Harmful with long lasting effects LC50 – Oncorhynchus mykiss – 15.3 ml/g – 96 h for Ni
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	Insoluble in water, may persist
Notes:	N/A

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## 13. Disposal Considerations

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

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#### 14. Transportation Data

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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. (Nickel Niobium Titanium Alloy)

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#### 15. Regulatory Information

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

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#### 16. Other Information

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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.

Document Last Revised:

02/04/2020

