



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Gadolinium Nickel Alloy

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1. Product and Company Identification

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Trade Name: Gadolinium Nickel  
Chemical Formula: Gd/Ni  
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  
H260: In contact with water releases flammable gases which may ignite spontaneously  
H317: May cause an allergic skin reaction  
H351: Suspected of causing cancer  
H372: Causes damage to organs through prolonged or repeated exposure

Precautionary Statements: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
P231+P232: Handle under inert gas. Protect from moisture  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P363: Wash contaminated clothing before reuse  
P370+P378: In case of fire: Use special powder for metal fires for extinction  
P402+404: Store in a dry place. Store in a closed container  
P405: Store locked up  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):	Powder/Pieces	Bulk
Health:	1	1
Flammability:	3	1
Physical:	2	1

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### 3. Composition

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Chemical Family:	Alloy
Additional Names:	None
Gadolinium (Gd):	
Percentage:	0-100 wt%
CAS #:	7440-54-2
EC #:	231-162-2
Nickel (Ni):	
Percentage:	0-100 wt%
CAS #:	7440-02-0
EC #:	231-111-4

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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:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Seek medical attention.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Firefighting Measures

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Flammability:	Flammable as powder and pieces
Extinguishing Media:	Do not use water for metal fires – use special extinguishing powder.
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:	Handle under dry protective gas. Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store under dry inert gas. 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, elemental, inhalable fraction, long-term value
Special Equipment:	None
Respiratory Protection:	Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Penetration time of glove material:	480 minutes
Eye Protection:	Safety glasses or goggles, Full face protection
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	Silver-grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Gadolinium powder and pieces, in contact with water, releases flammable gases.
Boiling Point:	N/A
Melting Point:	635-1480 °C
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:	Water, Acids, Acid chlorides, Halogens, Oxidizing agents
Incompatible Conditions:	Air, Water/moisture
Hazardous Decomposition Products:	Nickel oxides, Metal oxide fume

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	Causes irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose: N/A

Carcinogen: Nickel: Suspected of causing cancer  
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.  
ACGIH A5: Not suspected as a human carcinogen: Not suspected as a human carcinogen on the basis of properly conducted epidemiologic studies in humans. Studies have sufficiently long follow-up, reliable exposure histories, sufficiently high dose, and adequate statistical power to conclude that exposure to the agent does not convey a significant risk of cancer to humans. Evidence suggesting a lack of carcinogenicity in experimental animals will be considered if it is supported by other relevant data.

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## 12. Ecological Information

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Aquatic Toxicity:	Mild
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	Toxic for aquatic organism. May cause long lasting harmful effect on aquatic life. Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach any water sources.

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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:



Hazard Class:

4.1 Flammable solids, self-reactive substances and solid desensitized explosives.

Packing Group:

II

UN Number:

UN3089

Proper Shipping Name:

Metal powders, flammable, n.o.s. (Gadolinium Nickel)

Hazardous:

Hazardous as pieces:



Hazard Class:

4.1 Flammable solids, self-reactive substances and solid desensitized explosives.

Packing Group:

II

UN Number:

UN3178

Proper Shipping Name:

Flammable solid, inorganic n.o.s. (Gadolinium Nickel)

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## 15. Regulatory Information

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Sec 302 Extremely Hazardous:

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Sec 304 Reportable Quantities:

N/A

Sec 313 Toxic Chemicals:

Component: Nickel

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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.

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