



1. Product and Company Identification

Trade Name: Iron Aluminum Nickel Cobalt Alloy
Chemical Formula: FeAlNiCo
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
- H250: Catches fire spontaneously if exposed to air
- H261: In contact with water releases flammable gas
- H317: May cause an allergic skin reaction
- H319: Causes serious eye irritation
- H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335: May cause respiratory irritation
- H351: Suspected of causing cancer
- H372: Causes damage to the lungs, kidneys and the liver through prolonged or repeated exposure
- EUH018: In use may form combustible dust concentrations in air

Precautionary Statements:

- P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
- P222: Do not allow contact with air
- P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire
- P231+P232: Handle under inert gas. Protect from moisture
- 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
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P284: Wear respiratory protection
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
 P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
 P363: Wash contaminated clothing before reuse
 P370+P378: In case of fire: Use special powders for extinction
 P402+P404: Store in a dry place. Store in a closed container
 P403+P233: Store in a well-ventilated place. Keep container tightly closed
 P405: Store locked up
 P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	2
Flammability:	3
Physical:	2

3. Composition

Chemical Family:	Alloy
Additional Names:	AlNiCo

Iron (Fe)

Percentage:	0-100 wt%
CAS #:	7439-89-6
EC #:	231-096-4

Aluminum (Al)

Percentage:	0-100 wt%
CAS #:	7429-90-5
EC #:	231-072-3

Nickel (Ni)

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

Cobalt (Co)

Percentage:	0-100 wt%
CAS #:	7440-48-4
EC #:	231-158-0

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. Seek medical attention.
-------------	--

Ingestion:	Rinse mouth with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.
------------	--

Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.
-------	--

Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.
-------	---

5. Firefighting Measures

Flammability:	Flammable as powder
Extinguishing Media:	Do not use water for metal fires. Do not use halogenated extinguishing agents or foams and CO ₂ . 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.

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.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions:	Handle under inert gas. Protect from moisture. 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.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	15mg/m ³ as Al, long term-value 1 mg/m ³ as Ni, ceiling limit value 0.1 mg/m ³ as Co, for metal dust and fume, long-term value
Threshold Limit Value:	5 mg/m ³ as Fe, long-term value 1mg/m ³ as Al, long-term value 0.015 mg/m ³ as Ni, respirable, long-term value 1.5 mg/m ³ as Ni, inhalable fraction, long-term value 0.02 mg/m ³ as Co, 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:	Nitrile or rubber gloves
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:	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

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Acids, Bases, Oxidizing agents, Water, Alcohols, Halogens, Halogenated compounds, CO ₂
Incompatible Conditions:	Halogens, Protect against electrostatic charges, Spontaneously flammable in air, Moisture sensitive, Air sensitive, Water
Hazardous Decomposition Products:	Iron oxides, Aluminum oxides, Nickel Oxides, Metal oxide fumes

11. Toxicological Information

Potential Health Effects:	
Eyes:	Causes serious eye damage
Skin:	May cause irritation or allergic reaction
Ingestion:	May cause irritation
Inhalation:	May cause allergy or asthma symptoms or breathing difficulties
Chronic:	Causes damage to the lungs, kidneys and the liver through prolonged or repeated exposure.
Signs & Symptoms:	Asthma symptoms, Allergy, Breathing difficulties
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	30000 mg/kg for rat by mouth for Fe 6171 mg/kg for rat by mouth for Co
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.

12. Ecological Information

Aquatic Toxicity:	Moderate
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	Do not allow to reach ground water

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: III
UN Number: UN3089
Proper Shipping Name: Metal powders, flammable, n.o.s. (Iron Aluminum Nickel Cobalt Alloy)

15. Regulatory Information

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

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.

Document Last Revised: 02/03/2020

