LTS Research Laboratories, Inc.
Safety Data Sheet
Nickel Zinc Cobalt Iron

1. Product and Company Identification

Trade Name:	Nickel zinc cobalt iron
Chemical Formula:	NiZnCoFe
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:
H260: In contact with water releases flammable gases which may ignite spontaneously
H319 Causes serious eye irritation
H317: May cause an allergic skin reaction
H228: Flammable solid
H351: Suspected of causing cancer
H335: May cause respiratory irritation
H372: Causes damage to organs through prolonged or repeated exposure
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary Statements:
P260: Do not breathe dust/fume/gas/mist/vapors/spray
P280+P284: Wear protective gloves/protective clothing/eye protection/face protection/respiratory protection
P231+P232: Handle under inert gas. Protect from moisture
P210: Keep away from heat/sparks/flames – No smoking
P370+P378: In case of fire: Use CO_2, sand, extinguishing powder for extinction
P363: Wash contaminated clothing before reuse
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

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

3. Composition

Chemical Family:	Metal alloy
Additional Names:	None
Nickel (Ni):	
Percentage:	0-100 wt%
CAS #:	7440-02-0
EC #:	231-111-4
Zinc (Zn):	
Percentage:	0-100 wt%
CAS #:	7440-66-6
EC #:	231-175-3
Cobalt (Co):	
Percentage:	0-100 wt%
CAS #:	7440-48-4
EC #:	231-158-0
Iron (Fe):	
Percentage:	0-100 wt%
CAS #:	7439-89-6
EC #:	231-096-4

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.
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

5. Firefighting Measures

Flammability:	Non-flammable, except as powder
Extinguishing Media:	Do not use water for metal fires – use CO_2, sand, 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 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.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	0.1 mg/m^3 as Co, long-term value
Threshold Limit Value:	0.02 mg/m^3 as Co, 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.
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	Metallic grey
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:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents, Acids, Bases, Halogens
Incompatible Conditions:	Protect against electrostatic charges, Air, Water/moisture
Hazardous Decomposition Products:	Metal oxide fume, Iron oxides, Nickel oxides

11. Toxicological Information

Potential Health Effects:

Eyes:	Causes serious eye damage
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	N/A
Carcinogen:	IARC-2B: Possibly carcinogenic to humans: limited evidence in human in the absence of sufficient evidence in experimental animals. ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by routes of administration, at sites, of histologic types, or by mechanisms not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or level of exposure. NTP-R: Reasonably anticipated to be a carcinogen, limited evidence of carcinogenicity from epidemiologic studies. EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

12. Ecological Information

Aquatic Toxicity:	High
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	Very 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. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Avoid transfer into the environment.

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, self-reactive substances and solid desensitized explosives
Packing Group:	II
UN Number:	UN3089
Proper Shipping Name:	Metal powders, flammable, n.o.s. (Nickel zinc cobalt iron)

15. Regulatory Information

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

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:	07/01/2015