# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** Nickel Paste

**Product Code:** NI-M-01-PST

**CAS Number:** 7440-02-0

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Pictograms

GHS Categories
GHS02
Flammable
Flam. Liq. 2: H225
GHS08
Health Hazard
Carcinogenicity
2: H351
Rep. Tox. 2: H361
Spec. Organ Tox., Single exposure 3: H372
GHS07
Irritant
Spec. Target Organ Tox., Repeated exposure 1,2:
H336
Eye irritation 2: H319

Sensitization 1: H317
Skin irritation 3: H315
Environmental hazard: Chronic Aquatic Toxicity 3: H412
2.2 Label elements
Signal word: DANGER
Hazard statements
H225
Highly flammable liquid and vapor.
H315
Causes skin irritation.
H317
May cause allergic skin reaction.
H319
Causes serious eye irritation.
H336
May cause drowsiness and dizziness.
H351
Suspected of causing cancer.
H361
Suspected of damaging fertility or the unborn child.
H372
Causes damages to organs (lungs, central nervous system, inner ear) through prolonged or repeated exposure by inhalation.
H412
Harmful to aquatic life with long lasting effects.
Precautionary statements
P102
Keep out of reach of children.
P201
Obtain special instructions before use.
P202
Do not handle until all safety precautions have been read and understood.
P210
Keep away from heat, hot surfaces, sparks, flames, and other ignition sources. No Smoking.
P233
Keep container tightly closed.
P240
Ground and bond container and receiving equipment.
P243
Take action to prevent static discharges.
P260
Do not breathe mist/vapors/spray.
P264
Wash hands thoroughly after handling.
P270
Do not eat, drink or smoke when using this product.
P271
Use only outdoors or in a well-ventilated area.
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.
P303+P361+P364+P352

IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water.
P304+P340
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313
IF exposed or concerned: Get medical advice/attention.
P312
Call a POISON CENTER/doctor if you feel unwell.
P333+P313
If skin irritation or rash occurs: Get medical advice/attention.
P337+P313
If eye irritation persists: Get medical advice/attention.
P370+P378
In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P403+P235
Store in a well-ventilated place. Keep cool.
P405
Store locked up.
P501
Dispose of contents/container in accordance to local/regional/international regulations.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Nickel (7440-02-0) 30-60%
Toluene(108-88-3) 7-13%
Acetone(67-64-1) 5-10%

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## SECTION 4. FIRST AID MEASURES

Eye(s) Contact:
Symptoms: Immediate: irritation, redness.
Response:
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists:
Get medical attention.
Skin Contact:
Symptoms: Immediate: irritation, pain, redness; Delayed: dry skin, rash.
Response:
Take off contaminated clothing and wash it before reuse.
Wash with plenty of water.
If skin irritation or rash persists, get medical attention.
Inhalation:
Symptoms: Immediate: dizziness, drowsiness, headaches, nausea, cough, blurred vision, fatigue.
Response:
Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
If feeling unwell, call a POISON CENTER/doctor.

If exposed or concerned: Get medical advice.
Ingestion:
Symptoms: Immediate: nausea, sore throat, diarrhea, drowsiness, or dizziness.
Response:
Call a POISON CENTRE/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If exposed or concerned: Get medical advice.
Note to physician
Treatment: ND
Medical Conditions generally
Aggravated by Exposure: ND

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## SECTION 5. FIREFIGHTING MEASURES

Flash Point: -17°C.
Lower bound FP estimate is based on the closed cup value for the acetone component.
Flammable Limits:
LFL 1% UFL 12% (in volume%)
Auto-ignition point:
≥315°C.
Values based on 1-methoxy-2-propanol acetate, which is the component with the lowest auto-ignition value.
Fire Extinguishing Media:
Use dry chemical, carbon dioxide, or chemical foam to extinguish
Special Fire Fighting Procedures:
Wear self-contained breathing apparatus and full fire-fighting turn-out gear for fire-fighting
Unusual Fire and Explosion Hazards:
Will burn if involved in a fire.
The liquid may float on water and ignite.
Vapors are heavier than air, and may travel to sources of ignition near the ground.
Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion. Produces irritating and toxic fumes in fires or in contact with hot surfaces. May produce very toxic nickel carbonyl gas in the presence of carbon monoxide in a reducing atmosphere.
Hazardous combustion products:
Produces CO, CO2, nitrous oxides, nickel oxides, and smoke. May produce a very toxic nickel carbonyl gas in presence of CO.
DOT Class:
Flammable

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled:
Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection.
Precautions for response: Do not breathe the mist/spray/vapors. Remove or keep away all sources of extreme heat or open flames.
Cleaning: Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound (such as soil, sand, vermiculite) onto spill, then sweep into the container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water to remove the last traces of residue.
Environmental precautions: Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Recommendation: A metal container is suggested. Dispose of spill waste according to Section 13

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

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## SECTION 7. HANDLING AND STORAGE

Precautions to be taken in Handling and Storage.
Prevention:
Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take
precautionary measures against static discharge. Keep container tightly closed. Do not breathe mist/vapors/spray. Do not eat, drink, or smoke when using this product. Store in well-ventilated place. Store locked up.
Handling:
Wear protective gloves/protective clothing/eye protection. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Avoid release to the environment.
Storage temperature:
Keep cool.
Storage Pressure:
NA

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls
Ventilation required:
Keep airborne concentrations below exposure limits given in Section 3.
Recommendation: Respect the time weighted average of 20 ppm for toluene.
Personal Protection Equipment
Respiratory protection:
For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges. Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus. RECOMMENDATION:
Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional.
Recommendation: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this
MSDS, and that the respirator is fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.
Protective gloves:
For likely contacts, use of protective butyl rubber, fluorinated rubber, or other chemically
resistant gloves. For incidental contacts, use nitrile, neoprene, PVC gloves, or other chemically-resistant gloves.
Skin protection:
Wear appropriate protective clothing to prevent skin contact.
Eye protection:
Wear appropriate protective eyeglasses or chemical safety goggles.
Recommendation: Use safety glasses with lateral protection (side shields).
General hygiene considerations:
Wash hands thoroughly with water and soap after handling.

Additional clothing and/or equipment:
ND
Exposure Guidelines
See Composition/Information on Ingredients
(Section 3)

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Physical State:
Steel grey liquid.
Odor (threshold):
Benzene like, sweetish (2 ppm)
Specific Gravity (H2O=1):
1.67 @25°C
Vapor Pressure (mm Hg):
100 hPa [75 mmHg]
Vapor Density (air=1):
>2
Percent Volatile by volume:
ND
VOC (Volatile Organic Content) = 27% [466 g/L]
Evaporation Rate (butyl acetate=1):
Fast
Boiling Point:
≥56 °C
Freezing point / melting point:
NE
Partition Coefficient:
NE
Viscosity:
≥34 mm2/s @40°C
pH:
NE
Solubility in Water:
Partial
Molecular Weight:
NA

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## SECTION 10. STABILITY AND REACTIVITY

Stability:
Stable at normal temperatures and pressures.
Conditions to Avoid:
Ignition sources, open flames, excessive heat, and incompatible substances.
Materials to Avoid (Incompatibility):
Strong oxidizing agents, strong acids, strong bases, ammonium nitrate, perchlorates, phosphorus, selenium, and sulfur.
Reactivity: The nickel can react vigorously with acids and liberate hydrogen, which can form an explosive mixture in air. Nickel may react with carbon monoxide in a reducing atmosphere to form a very toxic nickel carbonyl gas.
Hazardous Decomposition Products:

Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.
Hazardous Polymerization:
Will not occur.

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## SECTION 11. TOXICOLOGICAL INFORMATION

Routes of exposure:
eyes, ingestion, inhalation, and skin.
Symptoms summary
Eyes
Cause eye redness and severe irritation.
Skin
May causes skin redness and mild irritation.
Inhalation
May cause drowsiness, dizziness, cough, headaches, nausea, unconsciousness.
Ingestion
May cause nausea, sore throat, and diarrhea (see inhalation symptoms).
Chronic
Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin.
Chronic inhalation exposure to nickel dust or mist may affect the central nervous system, damage lungs, and lead to hearing loss with co-exposure to loud noises.
Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.
Human experience
Skin corrosion/irritation:
The toluene component is a known severe skin irritant.
Prolonged or repeated skin contact may cause dermatitis.
Serious eye damage/irritation:
Acetone, ethanol, and ethyl acetate cause serious eye irritations. Contains mechanically abrasive particles.
Sensitization (allergic reactions): Nickel may cause skin sensitization in humans.
Carcinogenicity (risk of cancer):
Nickel is classified as a suspect carcinogen based on animal intratracheal instillation (intubation) or interperitoneal (in body cavity) injection studies. A reliable 2008 study by Oller et al. shows no carcinogenicity for the nickel metal via normal inhalation route. Evidence of carcinogenicity of ethanol relates to excessive alcoholic beverage consumption, and doesn’t relate to exposure risks when used in the workplace or as a non-comestible consumer product.

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## SECTION 12. ECOLOGICAL INFORMATION

Acute ecotoxicity: Harmful to aquatic life with long lasting effects.
Chronic Ecotoxicity:
Harmful to aquatic life with long lasting effects.
Avoid release to the environment.
Collect spillage.
Biodegradability: The nickel content is not biodegradable.
Note: Nickel can be recovered from the waste to reclaim the value of the nickel.
Chemical Fate Information:
ND

## SECTION 13. DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 Classification:
ND
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

## SECTION 14. TRANSPORT INFORMATION

Classified as Consumer Commodity. Ground USA: -4L size and smaller
US DOT Information: Proper shipping name:
Paint
Hazard Class: 3
Packaging group:
II
UN Number:
UN1263
IATA: Proper shipping name:
Paint
Hazard Class:
3
Packing group:
II
UN Number:
UN1263
Marine Pollutant:
None listed
Canadian TDG:
Proper shipping name: Paint
Hazard class: 3
Packing group: II
UN Number: UN1263

## SECTION 15. REGULATORY INFORMATION

SDS complies with OSHA’s Hazard Communication Rule 29, CFR 1910.1200.
CAA (Clean Air Act, USA)
This product does not contain any class 1 ozone depleting substances.
This product does not contain any class 2 ozone depleting substances.
This product contains toluene (CAS# 108-88-3), which is listed as hazardous air pollutants.
SARA:
(Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)
SARA Title III:
This product contains Toluene (CAS# 108-88-3, 13%) and Nickel (CAS #7440-02-0 (45%),
toxic chemicals subject to the reporting requirements of section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372
RCRA:
ND
EPCRA
(Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product contains toluene (CAS# 108-88-3) and nickel (CAS# 7440-02-0) subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.
TSCA:
(Toxic Substances Control Act of 1976, USA) All substances are TSCA listed.
CERCLA:
The following components are listed:
Toluene
(CAS# 108-88-3)
RQ is 1000lbs, Acetone(67-64-1)
RQ is 5000 lbs,
Nickel (CAS #7440-02-0)
RQ is 100 lbs, Ethyl acetate (141-78-6)
RQ is 5000lbs. State Regulations
California Proposition 65:
Warning! This product is or contains chemical(s) known to the state of California to cause cancer or reproductive harm.
This product contains Nickel,( metallic), which is listed as a carcinogen.
This product contains toluene, which is listed as reproductively toxic.
International Regulations
Canada WHMIS: Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)
All hazardous ingredients are listed on the DSL/NDSL.
Europe EINECS Numbers:
ND
Europe:
RoHS:
This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB’s, or PBDE’s, and complies with European RoHS regulations.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. 