SAFETY DATA SHEET

Date Accessed: 03/29/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Name: Neodymium Nanoparticles

Product Number: All applicable American Elements product codes, e.g. ND-M-02-NP , ND-M-03-NP , ND-M-04-NP , ND-M-05-NP

CAS #: 7440-00-8

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
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Los Angeles, CA 90024
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Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
GHS02 Flame
Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.
Self-heat. 2 H252 Self-heating in large quantities; may catch fire.
Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.
Classification according to Directive 67/548/EEC or Directive 1999/45/EC
F; Highly flammable
R15-17: Contact with water liberates extremely flammable gases. Spontaneously flammable in air.
Information concerning particular hazards for human and environment:
N/A
Hazards not otherwise classified
No data available.
Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labeled according to the CLP regulation.
Hazard pictograms



GHS02
Signal word
Danger
Hazard statements
H250 Catches fire spontaneously if exposed to air.
H252 Self-heating in large quantities; may catch fire.
H260 In contact with water releases flammable gases which may ignite spontaneously.
Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P222 Do not allow contact with air.
P231+P232 Handle under inert gas. Protect from moisture.
P370+P378 In case of fire: Use for extinction: CO2, sand, extinguishing powder.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/
national/international regulations.
WHMIS classification
B6 - Reactive flammable material
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
1
3
2
Health (acute effects) = 1
Flammability = 3
Physical Hazard = 2
Other hazards
Results of PBT and vPvB assessment:
PBT:
N/A.
vPvB:
N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
7440-00-8 Neodymium powder
Identification number(s):
EC number:
231-109-3

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled:
Supply fresh air. If not breathing, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

In case of skin contact:
Immediately wash with soap and water; rinse thoroughly.
Seek immediate medical advice.
In case of eye contact:
Rinse opened eye for several minutes under running water. Consult a physician.
If swallowed:
Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
No information available.
Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
Special powder for metal fires. Do not use water.
For safety reasons unsuitable extinguishing media
Water
Special hazards arising from the substance or mixture
Spontaneously flammable in air.
Contact with water releases hydrogen (explosive).
If this product is involved in a fire, the following can be released:
Neodymium oxide
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions:
Do not allow material to be released to the environment without official permits.
Do not allow product to reach sewage system or any water course.
Do not allow to penetrate the ground/soil.
Methods and material for containment and cleanup:
Keep away from ignition sources.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards:
Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure adequate ventilation.
Information about protection against explosions and fires:
Protect from humidity and water.
Protect against electrostatic charges.
Substance/product is self ignitable.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles:
No special requirements.
Information about storage in one common storage facility:
Store away from air.
Store away from water/moisture.
Store away from oxidizing agents.
Store away from halogens.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
This product is air sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from humidity and water.
Specific end use(s)
No information available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that should be monitored at the workplace.
Additional information:
No data
Exposure controls
Personal protective equipment
Follow typical general protective and industrial hygiene measures for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Breathing equipment:
Use suitable respirator when high concentrations are present.
Recommended filter device for short term use:

Use a respirator with type N95 (USA) or PE (EN 143) 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.
Protection of hands:
Impervious gloves
Inspect gloves prior to use.
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.
Penetration time of glove material (in minutes)
No data available.
Eye protection:
Safety glasses
Full face protection
Body protection:
Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Powder
Color: gray to black
Odor: Odorless
Odor threshold: No data available.
pH: N/A.
Melting point/range: 1024 °C (1875 °F)
Boiling point/range: 3027 °C (5481 °F)
Sublimation temperature / start: No data available.
Flash point: N/A
Flammability (solid, gas):
Contact with water liberates extremely flammable gases.
Ignition temperature: No data available.
Decomposition temperature: No data available.
Auto igniting: Spontaneously flammable in air.
Danger of explosion: No data available.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure: N/A.
Density at 20 °C (68 °F): 7 g/cm³ (58.415 lbs/gal)
Relative density
No data available.
Vapor density
N/A.
Evaporation rate
N/A.
Solubility in Water (H_2O):
Contact with water releases flammable gases
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A.
Kinematic: N/A.
Other information

No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity
In contact with water releases flammable gases which may ignite spontaneously.
Catches fire spontaneously if exposed to air.
Chemical stability
Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Spontaneously flammable in air.
Reacts with strong oxidizing agents
Contact with water releases flammable gases
Conditions to avoid
No information available.
Incompatible materials:
Oxidizing agents
Halogens
Air
Water/moisture
Hazardous decomposition products:
Hydrogen
Neodymium oxide

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification:
No data
Skin irritation or corrosion:
Irritant to skin and mucous membranes.
Eye irritation or corrosion:
Irritating effect.
Sensitization:
No sensitizing effects known.
Germ cell mutagenicity:
N/A
Carcinogenicity:
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity:
N/A
Specific target organ system toxicity - repeated exposure:
N/A
Specific target organ system toxicity - single exposure:
N/A

Aspiration hazard:
N/A
Subacute to chronic toxicity:
N/A
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity:
No information available.
Persistence and degradability:
No information available.
Bioaccumulative potential:
No information available.
Mobility in soil:
No information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without official permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment:
PBT:
N/A.
vPvB:
N/A.
Other adverse effects
No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA
UN1383
UN proper shipping name
DOT
Pyrophoric metals, n.o.s. (Neodymium powder)
IMDG, IATA

PYROPHORIC METAL, N.O.S. (Neodymium powder)
Transport hazard class(es)
DOT
Class
4.2 Substances liable to spontaneous combustion.
Label
4.2
Class
4.2 (S4) Substances liable to spontaneous combustion
Label
4.2
IMDG, IATA
Class
4.2 Substances liable to spontaneous combustion.
Label
4.2
Packing group
DOT, IMDG, IATA
I
Environmental hazards:
N/A.
Special precautions for user
Warning: Substances liable to spontaneous combustion
EMS Number: F-G,S-M
Segregation groups
Powdered metals
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N/A.
Transport/Additional information:
DOT
Marine Pollutant (DOT):
No
UN "Model Regulation":
UN1383, Pyrophoric metals, n.o.s. (Neodymium powder), 4.2, I

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings)
Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer
Substance is not listed.
Prop 65 - Developmental toxicity
Substance is not listed.
Prop 65 - Developmental toxicity, female
Substance is not listed.
Prop 65 - Developmental toxicity, male
Substance is not listed.

Information about limitation of use:
For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use)
Substance is not listed.
REACH - Pre-registered substances
Substance is listed.
Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

SECTION 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. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.