

SAFETY DATA SHEET

Date Printed: 10/22/2021

Date Revised: 05/15/2015

SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Stainless Steel Nanoparticles

Product Code: SS-M-04-NP

CAS Number: 65997-19-5

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
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Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

· Classification of the substance or mixture

GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.

· Label elements

· GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).



· Hazard pictograms

GHS02

· Signal word Warning

· Hazard statements

H228 Flammable solid.

· Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.

P280 Wear protective gloves/protective clothing/eye protection/face 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.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)

0

0

0

Health = 0

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH

FIRE

REACTIVITY

0

0

0

Health = 0

Fire = 0

Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment:

· PBT: N/A.

· vPvB: N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

· Substances

· CAS No. Description

7439-89-6 iron

· Identification number(s)

· EC number: 231-096-4

SECTION 4. FIRST AID MEASURES

· Description of first aid measures

· If inhaled: Supply fresh air; consult doctor in case of complaints.

· In case of skin contact: Immediately rinse with water.

· In case of eye contact: Rinse opened eye for several minutes under running water. Consult a physician.

· If swallowed: If symptoms persist consult doctor.

· 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:
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
 - Special hazards arising from the substance or mixture No information available.
 - Advice for firefighters
 - Protective equipment: No special measures required.
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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
 - Environmental precautions: No special measures required.
 - Methods and material for containment and cleanup:
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
 - 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.
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SECTION 7. HANDLING AND STORAGE

- Handling:
 - Precautions for safe handling No special precautions are necessary if used correctly.
 - Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.
 - 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: Not required.
 - Further information about storage conditions: Keep receptacle tightly sealed.
 - Specific end use(s) No information available.
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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
 - General protective and hygienic measures: Wash hands before breaks and at the end of work.
 - Breathing equipment: Not required.
 - Protection of hands:
SProtective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the

preparation/ the
chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and

varies from manufacturer to manufacturer.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection: Safety glasses

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Powder

Color: gray

- Odor: Odorless

- Odor threshold: No data available.

- pH: N/A.

- Melting point/range: 1535 °C (2795 °F)

Boiling point/range: 3000 °C (5432 °F)

- Flash point: N/A.

- Flammability (solid, gas): Product is not flammable.

- Ignition temperature:

Decomposition temperature: No data available.

- Auto igniting: No data available.

- Danger of explosion: No data available.

- Explosion limits:

Lower: No data available.

Upper: No data available.

- Vapor pressure: 1mm (1787 hPa (1mm (1340 mm Hg)

- Density at 20 °C (68 °F): 7.86 g/cm³ (65.592 lbs/gal)

- Bulk density at 20 °C (68 °F): 2900 kg/m³

- Relative density No data available.

- Vapor density N/A.

- Evaporation rate N/A.

- Solubility in / Miscibility with

Water: Insoluble.

- Partition coefficient (n-octanol/water): No data available.

- Viscosity:

Dynamic: N/A.

Kinematic: N/A.

- Solvent content:

Organic solvents: 0.0 %

VOC content: 0.0 g/l / 0.00 lb/gl

Solids content: 100.0 %

- Other information No information available.

SECTION 10. STABILITY AND REACTIVITY

- Reactivity No information available.
 - Chemical stability
 - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
 - Possibility of hazardous reactions No dangerous reactions known.
 - Conditions to avoid No information available.
 - Incompatible materials: No information available.
 - Hazardous decomposition products: No dangerous decomposition products known.
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SECTION 11. TOXICOLOGICAL INFORMATION

- Information on toxicological effects
 - Acute toxicity:
 - Primary irritant effect:
 - on the skin: No irritant effect.
 - on the eye: No irritating effect.
 - Sensitization: No sensitizing effects known.
 - Additional toxicological information:
 - Carcinogenic categories
 - IARC (International Agency for Research on Cancer)
Substance is not listed.
 - NTP (National Toxicology Program)
Substance is not listed.
 - OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.
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SECTION 12. ECOLOGICAL INFORMATION

- Toxicity
 - Aquatic toxicity: No information available.
 - Persistence and degradability: No information available.
 - Behavior in environmental systems:
 - Bioaccumulative potential: No information available.
 - Mobility in soil: No information available.
 - Additional ecological information:
 - General notes: Not known to be hazardous to water.
 - Results of PBT and vPvB assessment:
 - PBT: N/A.
 - vPvB: N/A.
 - Other adverse effects No information available.
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SECTION 13. DISPOSAL CONSIDERATIONS

- Waste treatment methods
- Recommendation:
Must not be disposed of together with household garbage. Do not allow product to reach sewage

system

- Uncleaned packagings:
 - Recommendation: Disposal must be made according to official regulations.
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SECTION 14. TRANSPORT INFORMATION

- UN-Number
 - DOT, ADN, IMDG, IATA not regulated
 - UN proper shipping name
 - DOT, ADN, IMDG, IATA not regulated
 - Transport hazard class(es)
 - DOT, ADN, IMDG, IATA
 - Class not regulated
 - Packing group
 - DOT, IMDG, IATA not regulated
 - Environmental hazards:
 - Marine pollutant: No
 - Special precautions for user N/A.
 - Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A.
 - UN "Model Regulation": not regulated
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SECTION 15. REGULATORY INFORMATION

- Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Sara
 - Section 355 (extremely hazardous substances):
Substance is not listed.
 - Section 313 (Specific toxic chemical listings):
Substance is not listed.
 - TSCA (Toxic Substances Control Act):
Substance is listed.
 - Proposition 65
 - Chemicals known to cause cancer:
Substance is not listed.
 - Chemicals known to cause reproductive toxicity for females:
Substance is not listed.
 - Chemicals known to cause reproductive toxicity for males:
Substance is not listed.
 - Chemicals known to cause developmental toxicity:
Substance is not listed.
 - Carcinogenic categories
 - EPA (Environmental Protection Agency)
Substance is not listed.
 - TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.
 - NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.
 - GHS label elements
- The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms

GHS02

- Signal word Warning

- Hazard statements

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- Precautionary statements

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.