SECTION 1. IDENTIFICATION

Product Name: Stainless Steel Nanoparticles

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

CAS #: 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
Fax: +1 310-208-0351

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.

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.

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.

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:
    - Protective 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.

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.

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.
  - 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.

SECTION 13. DISPOSAL CONSIDERATIONS

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

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
H228 Flammable solid.
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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.
· 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
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