

1.- Identification of the substance/preparation and of the company

- **Identification of the product:** Nickel nanowires modified with streptavidin
- **Chemical family:** Nickel
- **Product name:** DRP-NINW-STR
- **Use of the substance/preparation:** Research use only
- **Manufacturer/supplier identification:** DropSens, S.L.
Ed. CEEI, locales 4 y 5
Parque Tecnológico de Asturias
Llanera - 33428 (Asturias) SPAIN
Tel.- +34 985 27 76 85 Fax.- +34 985 27 76 85
E-mail.- info@dropsens.com
Internet Web Site: www.dropsens.com
- **Emergency phone:** DropSens, S.L. +34 985 27 76 85

2 Hazards identification**Classification of the mixture:**

According to Regulation CLP (EC) No1272/2008

- Acute toxicity, Oral (Category 4).
- Specific target organ toxicity-repeated exposure (Category 2).
- Carcinogenicity (Category 2).
- Skin irritation (Category 1).
- Chronic aquatic toxicity (Category 3).

Labelled:

- Signal word: Danger.
- Hazard statements:
 - H317 – May cause an allergic skin reaction.
 - H351 – Suspected of causing cancer.
 - H372 – Causes damage to organs through prolonged or repeated exposure.
 - H412 – Harmful to aquatic life with long lasting effects.
- Precautionary statements:
 - P273 – Avoid release to the environment.
 - P280 – Wear protective gloves/ protective clothing/ eye protection/ face protection.
 - P314 – Get medical advise/attention if you feel unwell.
 - P305 + P338 + P351 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements: None.

3.- Composition/Information on ingredients

- Nickel Nanowires

Synonyms: Ni
CAS: - 7440-02-0

4.- First aid measures

- **General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.
- **After skin contact:** Wash skin with soap and copious amounts of water. Consult a physician.
- **After ingestion:** Make victim drink plenty of water. Never give anything by mouth to an unconscious person, rinse mouth with water. Consult a physician.
- **After eye contact:** Rinse out with plenty of water with the eyelid held wide open for at least 15 minutes. Summon eye specialist.
- **After inhalation:** Move the person into fresh air. If it is necessary, give artificial respiration with oxygen. Summon physician if necessary.

5.- Accidental release measures

- **Person-related precautionary measures:** Use personal protective equipment. Avoid breathing vapours or gas. Wear security gloves, clothing and glasses. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.
- **Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- **Methods and materials for containment and cleaning up:** Collect and perform deletion with an absorbent material. Ventilate and clean with water the area where the spill/splash took place. Keep it in suitable and closed containers for disposal.

6.- Handling and storage

- **Precautions for safe handling:** Avoid eye and skin contact. Avoid inhalation of vapour or mist. Keep away from sources of ignition – No smoking.
- **Conditions for safe storage:** Store at a cool place, between 2°C – 8°C. Keep container tightly closed in a dry and well-ventilated place.

7.- Exposure controls/personal protection

Límites de exposición:

- Nickel VLA-ED, 1mg/m3. Occupational Exposure Limits for Chemical Agents - Table 1: Occupational Exposure Environmental Limits.

Exposure controls

- Respiratory protection Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- Hand protection The selected protective gloves have to satisfy the specification of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
- Eye protection Safety glasses with side-shields conforming to NIOSH (US) or EN166 (EU)
- Skin and body protection Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of work day.

8.- Physical and chemical properties

- **General information:**
 - Form: Liquid
 - Colour: Silver, metallic.
 - Odour: No data available
- **Security information:**
 - pH: No data available.
 - Melting temperature: No data available.
 - Ignition temperature: No data available.
 - Relative vapour density: No data available.
 - Bulk Density: No data available.
 - Solubility in water (20°C): Soluble.
 - Solubility in other solvent: No data available.

9.- Stability and reactivity

- **Reactivity:** No data available.
- **Chemical Stability:** No data available.
- **Possibility of hazardous reactions:** No data available.
- **Incompatible materials:** Aluminum, alkali metals, ammonia, acid chlorides, acid anhydrides, strong oxidizing and reducing agents.
- **Conditions to avoid:** Extreme temperature and direct sunlight.

- **Hazardous decomposition products:** Other decomposition products – no data available.
- **Further information:** Stable under recommended storage conditions.

10.- Toxicological information

- **Acute toxicity:** No data available.
- **Skin corrosion/irritation:** No data available.
- **Serious eye damage/eye irritation:** No data available.
- **Respiratory or skin sensitization:** May cause allergic skin reaction.
- **Germ cell mutagenicity:** No data available.
- **Carcinogenicity:** This product contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP or EPA classification. Limited evidence of carcinogenicity in animal studies. IARC: 2B-Grupo 2B: Possibly carcinogenic to humans (Nickel, <1 mm).
- **Reproductive toxicity:** No data available.
- **Specific target organ toxicity – single exposure:** No data available.
- **Specific target organ toxicity – repeated exposure:** No data available.
- **Aspiration hazard:** No data available.
- **Potential health effects**
 - **Ingestion:** Toxic if swallowed.
 - **Serious eye damage/eye irritation:** Causes eye irritation.
 - **Inhalation:** Toxic if inhaled. May cause respiratory tract irritation.
 - **Skin corrosion/irritation:** Toxic if absorbed through skin. May cause skin irritation.

- **Additional Information:** RTECS - No data available.

11.- Ecological information:

To the best of our knowledge the ecological effects have not been thoroughly researched. Avoid contact with water, wastewaters or soil.

Toxicity:

Fish toxicity: CL50-*Cyprinus Carpio* (Carp) 1.3 mg/l / 96h.

Daphnia toxicity: *Daphnia magna* EC₅₀: 1 mg/l / 48h.

- **Persistence and degradability:** No data available.
- **Mobility in soil:** No data available.
- **Results of PBT and vPvB assessment:** No data available.
- **Bioaccumulative potential:** No data available.
- **Other adverse effects:** Toxic to aquatic organisms.

12.- Disposal considerations

- **Product:** Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose this material.
- **Contaminated packaging:** Dispose of as unused product.

13.- Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) 1907/2006 and/or 67/548/EEC and/or 1999/45/EC.

– R-phrases:

R20/21/22 Harmful by inhalation, ingestion and in contact with skin.

R36/37 Irritating to eyes and to respiratory system.

R40 Limited evidence of a carcinogenic effect.

R43 May cause sensitization by skin contact.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

– S-phrases:

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell, seeks medical advice immediately (show the label if possible).

S61 Avoid release to the environment. Refer to safety data sheets special instructions.

14. Other information

Date of creation: 07/11/2014

Author: Marta Neves

Revised by: Pablo Fanjul Bolado (Director I+D, DropSens, S.L.)

The contents and format of this MSDS are in accordance with EEC Commission Directive 2001/58/EC, 67/548/EC resp. 99/45/EC

Disclaimer: DropSens S.L. provides the information contained herein in good faith and makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material.