



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture Chromium-Nickel (Cr-Ni)
Registration number -
Document number 1XQ
Synonyms None.
Materion Code 1XQ
Issue date 08-August-2014
Revision date 12-January-2018

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Division Milwaukee
Telephone 414.212.0257
e-mail advancedmaterials@materion.com
Contact person Laura Hamilton

1.4. Emergency telephone number

Supersedes date 26-May-2015
Version number 03

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Not available.
Uses advised against None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Flammable solids Category 2 H228 - Flammable solid.

Health hazards

Carcinogenicity Category 2 H351 - Suspected of causing cancer.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard Category 1 H400 - Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term aquatic hazard Category 3 H412 - Harmful to aquatic life with long lasting effects.

Hazard summary May be ignited by heat, sparks or flames. Suspected of causing cancer. Prolonged exposure may cause chronic effects. Dangerous for the environment if discharged into watercourses.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Nickel

Hazard pictograms



Signal word

Warning

Hazard statements

| | |
|------|--|
| H228 | Flammable solid. |
| H351 | Suspected of causing cancer. |
| H400 | Very toxic to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

Prevention

| | |
|------|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting equipment. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/eye protection/face protection. |

Response

| | |
|-------------|--|
| P370 + P378 | In case of fire: Use appropriate media for extinction. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P391 | Collect spillage. |

Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

Disposal

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

Supplemental label information

81,25 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|------------------------|--------------------------------------|------------------------|------------------------|--------------|-------|
| Chromium | 70 - 92,5 | 7440-47-3 231-157-5 | - | - | # |
| Classification: | Aquatic Chronic 3;H412 | | | | |
| Nickel | 7,5 - 30 | 7440-02-0 231-111-4 | - | 028-002-01-4 | |
| Classification: | Carc. 2;H351, Aquatic Chronic 3;H412 | | | | |
| | | | | | 7,S |

List of abbreviations and symbols that may be used above

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments

The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information

IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Direct contact with eyes may cause temporary irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Flammable solid.

5.1. Extinguishing media

Suitable extinguishing media Dry sand.

Unsuitable extinguishing media Water. Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO2).

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Special firefighting procedures In case of fire and/or explosion do not breathe fumes.

Specific methods Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders Keep unnecessary personnel away.

6.2. Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Stop the flow of material, if this is without risk. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Use explosion-proof equipment. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

7.2. Conditions for safe storage, including any incompatibilities Store locked up. Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

| Components | Type | Value |
|--------------------------|------|---------|
| Chromium (CAS 7440-47-3) | MAK | 2 mg/m3 |

Austria. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

| Components | Type | Value | Form |
|------------------------|------|-----------------------|-----------------|
| Nickel (CAS 7440-02-0) | STEL | 2 mg/m ³ | Inhalable dust. |
| | TWA | 0,5 mg/m ³ | Inhalable dust. |

Belgium. Exposure Limit Values.

| Components | Type | Value |
|--------------------------|------|-----------------------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ |
| Nickel (CAS 7440-02-0) | TWA | 1 mg/m ³ |

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

| Components | Type | Value |
|--------------------------|------|------------------------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ |
| Nickel (CAS 7440-02-0) | TWA | 0,05 mg/m ³ |

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

| Components | Type | Value |
|--------------------------|------|-----------------------|
| Chromium (CAS 7440-47-3) | MAC | 2 mg/m ³ |
| Nickel (CAS 7440-02-0) | MAC | 0,5 mg/m ³ |

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

| Components | Type | Value |
|------------------------|------|---------------------|
| Nickel (CAS 7440-02-0) | TWA | 1 mg/m ³ |

Czech Republic. OELs. Government Decree 361

| Components | Type | Value | Form |
|--------------------------|---------|-----------------------|-------|
| Chromium (CAS 7440-47-3) | Ceiling | 1,5 mg/m ³ | Dust. |
| | TWA | 0,5 mg/m ³ | |
| | | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | Ceiling | 1 mg/m ³ | |
| | TWA | 0,5 mg/m ³ | |

Denmark. Exposure Limit Values

| Components | Type | Value | Form |
|--------------------------|------|------------------------|-------|
| Chromium (CAS 7440-47-3) | TLV | 0,5 mg/m ³ | Dust. |
| Nickel (CAS 7440-02-0) | TLV | 0,05 mg/m ³ | Dust. |

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

| Components | Type | Value |
|--------------------------|------|-----------------------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ |

Finland. Workplace Exposure Limits

| Components | Type | Value | Form |
|--------------------------|------|------------------------|-------------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | Respirable. |
| Nickel (CAS 7440-02-0) | TWA | 0,01 mg/m ³ | |

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

| Components | Type | Value |
|---|------|---------------------|
| Chromium (CAS 7440-47-3) | VME | 2 mg/m ³ |
| Regulatory status: Regulatory indicative (VRI) | | |
| Nickel (CAS 7440-02-0) | VME | 1 mg/m ³ |
| Regulatory status: Indicative limit (VL) | | |

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

| Components | Type | Value | Form |
|--------------------------|------|---------------------|---------------------|
| Chromium (CAS 7440-47-3) | AGW | 2 mg/m ³ | Inhalable fraction. |

| Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace | | | |
|---|-------------|-------------------------|----------------------|
| Components | Type | Value | Form |
| Nickel (CAS 7440-02-0) | AGW | 0,006 mg/m ³ | Respirable fraction. |
| Greece. OELs (Decree No. 90/1999, as amended) | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 1 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 1 mg/m ³ | |
| Hungary. OELs. Joint Decree on Chemical Safety of Workplaces | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | Ceiling | 0,1 mg/m ³ | |
| Iceland. OELs. Regulation 154/1999 on occupational exposure limits | | | |
| Components | Type | Value | Form |
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | Dust. |
| Nickel (CAS 7440-02-0) | TWA | 0,05 mg/m ³ | Dust. |
| Ireland. Occupational Exposure Limits | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | |
| Italy. Occupational Exposure Limits | | | |
| Components | Type | Value | Form |
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 1,5 mg/m ³ | Inhalable fraction. |
| Latvia. OELs. Occupational exposure limit values of chemical substances in work environment | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,05 mg/m ³ | |
| Lithuania. OELs. Limit Values for Chemical Substances, General Requirements | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | |
| Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Netherlands. OELs (binding) | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | |
| Norway. Administrative Norms for Contaminants in the Workplace | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TLV | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TLV | 0,05 mg/m ³ | |
| Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817 | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,25 mg/m ³ | |
| Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266) | | | |
| Components | Type | Value | |
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|---------------------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 1,5 mg/m ³ | Inhalable fraction. |

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | STEL | 0,5 mg/m ³ | |
| | TWA | 0,1 mg/m ³ | |

Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances

| Components | Type | Value | Form |
|------------------------|------|------------------------|---------------------|
| Nickel (CAS 7440-02-0) | TWA | 0,05 mg/m ³ | Inhalable fraction. |

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|---------------------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | Inhalable fraction. |

Spain. Occupational Exposure Limits

| Components | Type | Value | Form |
|--------------------------|------|---------------------|------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 1 mg/m ³ | |

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|-------------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | Total dust. |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | Total dust. |

Switzerland. SUVA Grenzwerte am Arbeitsplatz

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|---------------------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | Inhalable fraction. |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | Inhalable fraction. |

UK. EH40 Workplace Exposure Limits (WELs)

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|------|
| Chromium (CAS 7440-47-3) | TWA | 0,5 mg/m ³ | |
| Nickel (CAS 7440-02-0) | TWA | 0,5 mg/m ³ | |

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

| Components | Type | Value | Form |
|--------------------------|------|---------------------|------|
| Chromium (CAS 7440-47-3) | TWA | 2 mg/m ³ | |

Biological limit values**Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.**

| Components | Value | Determinant | Specimen | Sampling Time |
|--------------------------|-----------------|----------------|---------------------|---------------|
| Chromium (CAS 7440-47-3) | 0,065 µmol/mmol | Total chromium | Creatinine in urine | * |
| | 0,03 mg/g | Total chromium | Creatinine in urine | * |
| Nickel (CAS 7440-02-0) | 0,077 µmol/mmol | Nickel | Creatinine in urine | * |
| | 0,04 mg/g | Nickel | Creatinine in urine | * |

* - For sampling details, please see the source document.

Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health Components

| Value | Determinant | Specimen | Sampling Time |
|-----------------------------------|-------------|----------|---------------|
| Nickel (CAS 7440-02-0) 0,1 umol/l | Nickel | Urine | * |

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

| Value | Determinant | Specimen | Sampling Time |
|------------------------------------|-------------|---------------------|---------------|
| Chromium (CAS 7440-47-3) 0,02 mg/g | chromium | Creatinine in urine | * |
| 0,043 µmol/mmol | chromium | Creatinine in urine | * |
| Nickel (CAS 7440-02-0) 0,02 mg/g | Nickel | Creatinine in urine | * |
| 0,038 µmol/mmol | Nickel | Creatinine in urine | * |

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

| Value | Determinant | Specimen | Sampling Time |
|----------------------------------|-------------|----------|---------------|
| Chromium (CAS 7440-47-3) 25 µg/l | Cromo total | Urine | * |
| 10 µg/l | Cromo total | Urine | * |

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

| Value | Determinant | Specimen | Sampling Time |
|--------------------------------|-------------|----------|---------------|
| Nickel (CAS 7440-02-0) 45 µg/l | Nickel | Urine | * |

* - For sampling details, please see the source document.

UK. EH40 Biological Monitoring Guidance Values (BMGVs)

| Value | Determinant | Specimen | Sampling Time |
|--------------------------------------|-------------|---------------------|---------------|
| Chromium (CAS 7440-47-3) 10 umol/mol | Chromium | Creatinine in urine | * |

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Use personal protective equipment as required. Wear eye/face protection.

Skin protection

- Hand protection Wear protective gloves.

- Other Wear suitable protective clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Contain spills and prevent releases and observe national regulations on emissions. Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|--|-------------------------------|
| Physical state | Solid. |
| Form | Solid. |
| Colour | Not available. |
| Odour | Not available. |
| Odour threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | 1455 °C (2651 °F) estimated |
| Initial boiling point and boiling range | 2642 °C (4787,6 °F) estimated |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Flammable solid. |

Upper/lower flammability or explosive limits

| | |
|--|-----------------------|
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapour pressure | 0,00001 hPa estimated |
| Vapour density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Explosive properties | Not available. |
| Oxidising properties | Not available. |

9.2. Other information

| | |
|-------------------------|----------------------------------|
| Density | 7,47 g/cm ³ estimated |
| Specific gravity | 7,47 estimated |

SECTION 10: Stability and reactivity

| | |
|---|---|
| 10.1. Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| 10.4. Conditions to avoid | Heat, flames and sparks. High temperatures. Contact with incompatible materials. |
| 10.5. Incompatible materials | Strong acids. Strong oxidising agents. |
| 10.6. Hazardous decomposition products | No hazardous decomposition products are known. |

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

| | |
|---------------------|---|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure. |

Symptoms Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on toxicological effects

Acute toxicity No data available.

Skin corrosion/irritation Due to partial or complete lack of data the classification is not possible.

Serious eye damage/eye irritation Due to partial or complete lack of data the classification is not possible.

Respiratory sensitisation Due to partial or complete lack of data the classification is not possible.

Skin sensitisation Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Suspected of causing cancer.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)

3 Not classifiable as to carcinogenicity to humans.

Nickel (CAS 7440-02-0)

2B Possibly carcinogenic to humans.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Nickel (CAS 7440-02-0)

Carcinogenic, Category 2.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Mixture versus substance information No information available.

Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity Very toxic to aquatic life. Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

| Product | Species | Test Results |
|-------------------------|-----------|---------------------------------|
| Chromium-Nickel (Cr-Ni) | | |
| Aquatic | | |
| Fish | LC50 Fish | 78,088 mg/l, 96 hours estimated |

* Estimates for product may be based on additional component data not shown.

12.2. Persistence and degradability No data is available on the degradability of this product.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Chromium (CAS 7440-47-3)

Chromium (Cr) 10 ug/l

Chromium (Cr) 200 ug/l

Nickel (CAS 7440-02-0)

Nickel (Ni) 10 ug/l

Nickel (Ni) 200 ug/l

Estonia Dangerous substances in soil Data

Chromium (CAS 7440-47-3)

Chromium (Cr) 100 mg/kg

Nickel (CAS 7440-02-0)

Chromium (Cr) 300 mg/kg
Chromium (Cr) 800 mg/kg
Nickel (Ni) 150 mg/kg
Nickel (Ni) 50 mg/kg
Nickel (Ni) 500 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|--|
| Residual waste | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |
| EU waste code | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

ADR

| | |
|---|----------------------------------|
| 14.1. UN number | UN3089 |
| 14.2. UN proper shipping name | Metal powders, flammable, n.o.s. |
| 14.3. Transport hazard class(es) | |
| Class | 4.1 |
| Subsidiary risk | - |
| Label(s) | 4.1 |
| Hazard No. (ADR) | Not available. |
| Tunnel restriction code | Not available. |
| 14.4. Packing group | II |
| 14.5. Environmental hazards | Yes |
| 14.6. Special precautions for user | Not available. |

RID

| | |
|---|----------------------------------|
| 14.1. UN number | UN3089 |
| 14.2. UN proper shipping name | Metal powders, flammable, n.o.s. |
| 14.3. Transport hazard class(es) | |
| Class | 4.1 |
| Subsidiary risk | - |
| Label(s) | 4.1 |
| 14.4. Packing group | II |
| 14.5. Environmental hazards | Yes |
| 14.6. Special precautions for user | Not available. |

ADN

| | |
|---|----------------------------------|
| 14.1. UN number | UN3089 |
| 14.2. UN proper shipping name | Metal powders, flammable, n.o.s. |
| 14.3. Transport hazard class(es) | |
| Class | 4.1 |
| Subsidiary risk | - |
| Label(s) | 4.1 |
| 14.4. Packing group | II |
| 14.5. Environmental hazards | Yes |

14.6. Special precautions for user Not available.

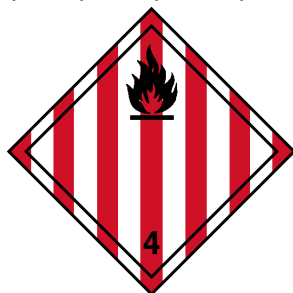
IATA

14.1. UN number UN3089
14.2. UN proper shipping name Metal powders, flammable, n.o.s.
14.3. Transport hazard class(es)
Class 4.1
Subsidiary risk -
Label(s) 4.1
14.4. Packing group II
14.5. Environmental hazards Yes
14.6. Special precautions for user Not available.

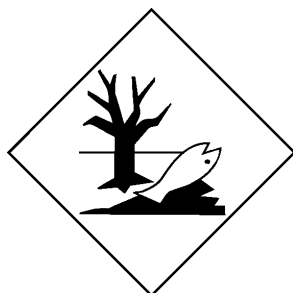
IMDG

14.1. UN number UN3089
14.2. UN proper shipping name Metal powders, flammable, n.o.s., MARINE POLLUTANT
14.3. Transport hazard class(es)
Class 4.1
Subsidiary risk -
Label(s) 4.1
14.4. Packing group II
14.5. Environmental hazards
Marine pollutant Yes
EmS Not available.
14.6. Special precautions for user Not available.

ADN; ADR; IATA; IMDG; RID



Marine pollutant



General information IMDG Regulated Marine Pollutant.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Chromium (CAS 7440-47-3)

Nickel (CAS 7440-02-0)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Nickel (CAS 7440-02-0)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Training information

Follow training instructions when handling this material.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.