



# PRODUCT INFORMATION 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** Nickel Aluminum Targets  
**Registration number** -  
**Document number** G36  
**Synonyms** None.  
**Issue date** 08-February-2019  
**Version number** 02

### 1.3. Details of the supplier of the product information sheet

#### Supplier

**Company name** Materion Advanced Materials Germany GmbH  
**Address** Borsigstrasse 10  
63755 Alzenau  
DE

#### Division

**Telephone** 49.60.23.91.82.0 H. Schmiing

**e-mail** Materion.Germany@materion.com

**Contact person** Hermann Schmiing

**1.4. Emergency telephone number** 49.60.23.91.82.0 H. Schmiing

**Revision date** 12-February-2021

**Supersedes date** 08-February-2019

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

**Identified uses** Manufacture of computer, electronic and optical products, electrical equipment  
Scientific research and development  
Manufacturing of Metal Parts

**Uses advised against** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
Consumer uses: Private households (= general public = consumers)

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Advanced Materials Germany GmbH  
**Address** Borsigstrasse 10  
63755 Alzenau  
DE

#### Division

**Telephone** 49.60.23.91.82.0 H. Schmiing

**e-mail** Materion.Germany@materion.com

**Contact person** Hermann Schmiing

**1.4. Emergency telephone number** 49.60.23.91.82.0 H. Schmiing

## 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

##### Health hazards

|                    |            |   |
|--------------------|------------|---|
| Skin sensitisation | Category 1 | H317 - May cause an allergic skin reaction. |
| Carcinogenicity    | Category 2 | H351 - Suspected of causing cancer.         |

Specific target organ toxicity - repeated exposure

Category 1 (Respiratory system)

H372 - Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

**Hazard summary** May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure.

## 2.2. Label elements

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

**Contains:** Aluminium, NICKEL POWDER; [PARTICLE DIAMETER < 1MM]

#### Hazard pictograms



**Signal word** Danger

#### Hazard statements

H317 May cause an allergic skin reaction.  
H351 Suspected of causing cancer.  
H372 Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

### Precautionary statements

#### Prevention

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

P302 + P350 If on skin: Wash with plenty of water.  
P304 + P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P308 + P313 If exposed or concerned: Get medical advice/attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

#### Storage

P405 Store locked up.

#### Disposal

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

### Supplemental label information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

### 2.3. Other hazards

Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

| Chemical name  | %       | CAS-No. / EC No.       | REACH Registration No. | Index No.    | Notes |
|--|---------|------------------------|------------------------|--------------|-------|
| NICKEL POWDER; [PARTICLE DIAMETER < 1MM]   | 80 - 98 | 7440-02-0<br>231-111-4 | 01-2119438727-29-0049  | 028-002-00-7 |       |
| <b>Classification:</b> Skin Sens. 1;H317, STOT SE 3;H335, Carc. 2;H351, STOT RE 2;H373 |         |                        |                        |              | 7,S   |
| Aluminium  | 2 - 20  | 7429-90-5<br>231-072-3 | 01-2119529243-45-0056  | 013-002-00-1 |       |
| <b>Classification:</b> -   |         |                        |                        |              | T     |

## SECTION 4: First aid measures

#### General information

If you feel unwell, seek medical advice (show the label where possible). 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

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.

**Skin contact** Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

**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**

May cause an allergic skin reaction. May cause respiratory 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** No unusual fire or explosion hazards noted.

**5.1. Extinguishing media**

**Suitable extinguishing media** Powder. Dry sand.

**Unsuitable extinguishing media** Carbon dioxide (CO<sub>2</sub>).

**5.2. Special hazards arising from the substance or mixture** None known.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters** Wear suitable protective equipment.

**Special firefighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** Keep unnecessary personnel away. For personal protection, see section 8 of the PIS.

**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the PIS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the PIS.

**6.4. Reference to other sections** For personal protection, see section 8. For waste disposal, see section 13.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling** Do not handle until all safety precautions have been read and understood. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store locked up. Store away from incompatible materials (see Section 10 of the PIS).

**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                | Form                 |
|---------------------------|------|----------------------|----------------------|
| Aluminium (CAS 7429-90-5) | MAK  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                           |      | 10 mg/m <sup>3</sup> | Inhalable fraction.  |
|                           | STEL | 20 mg/m <sup>3</sup> | Inhalable fraction.  |
|                           |      | 10 mg/m <sup>3</sup> | Respirable fraction. |

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

| Components   | Type | Value                 | Form            |
|--|------|-----------------------|-----------------|
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | STEL | 2 mg/m <sup>3</sup>   | Inhalable dust. |
|  | TWA  | 0,5 mg/m <sup>3</sup> | Inhalable dust. |

**Belgium. Exposure Limit Values**

| Components   | Type | Value               | Form                 |
|--|------|---------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 1 mg/m <sup>3</sup> | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1 mg/m <sup>3</sup> |                      |

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

| Components   | Type | Value                  | Form                 |
|--|------|------------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 2 mg/m <sup>3</sup>    |                      |
|  |      | 10 mg/m <sup>3</sup>   | Dust.                |
|  |      | 1,5 mg/m <sup>3</sup>  | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,05 mg/m <sup>3</sup> |                      |

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

| Components   | Type | Value                 | Form             |
|--|------|-----------------------|------------------|
| Aluminium (CAS 7429-90-5)                                      | MAC  | 4 mg/m <sup>3</sup>   | Respirable dust. |
|  |      | 10 mg/m <sup>3</sup>  | Total dust.      |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | MAC  | 0,5 mg/m <sup>3</sup> |                  |

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

| Components   | Type | Value               | Form |
|--|------|---------------------|------|
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1 mg/m <sup>3</sup> |      |

**Czech Republic. OELs. Government Decree 361**

| Components   | Type    | Value                 | Form                |
|--|---------|-----------------------|---------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA     | 10 mg/m <sup>3</sup>  | Dust.               |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | Ceiling | 1 mg/m <sup>3</sup>   | Aerosol, inhalable. |
|  | TWA     | 0,5 mg/m <sup>3</sup> | Aerosol, inhalable. |

**Denmark. Exposure Limit Values**

| Components   | Type | Value                  | Form                         |
|--|------|------------------------|------------------------------|
| Aluminium (CAS 7429-90-5)                                      | TLV  | 5 mg/m <sup>3</sup>    | Dust and fume.               |
|  |      | 5 mg/m <sup>3</sup>    | Fume.                        |
|  |      | 2 mg/m <sup>3</sup>    | Respirable dust and/or fume. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TLV  | 0,05 mg/m <sup>3</sup> | Dust.                        |

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended**

| Components                | Type | Value               | Form                            |
|---------------------------|------|---------------------|---------------------------------|
| Aluminium (CAS 7429-90-5) | TWA  | 4 mg/m <sup>3</sup> | Fine dust, respiratory fraction |

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended**

| Components   | Type | Value                 | Form        |
|--|------|-----------------------|-------------|
|  |      | 10 mg/m <sup>3</sup>  | Total dust. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> |             |

**Finland. Workplace Exposure Limits**

| Components   | Type | Value                  | Form          |
|--|------|------------------------|---------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 1,5 mg/m <sup>3</sup>  | Welding fume. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,01 mg/m <sup>3</sup> | Respirable.   |

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

| Components   | Type | Value                | Form          |
|--|------|----------------------|---------------|
| Aluminium (CAS 7429-90-5)                                      | VME  | 5 mg/m <sup>3</sup>  | Dust.         |
| <b>Regulatory status:</b> Indicative limit (VL)                |      |                      |               |
|  |      | 5 mg/m <sup>3</sup>  | Welding fume. |
| <b>Regulatory status:</b> Indicative limit (VL)                |      |                      |               |
|  |      | 10 mg/m <sup>3</sup> |               |
| <b>Regulatory status:</b> Indicative limit (VL)                |      |                      |               |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | VME  | 1 mg/m <sup>3</sup>  |               |
| <b>Regulatory status:</b> Indicative limit (VL)                |      |                      |               |

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

| Components                | Type | Value                 | Form             |
|---------------------------|------|-----------------------|------------------|
| Aluminium (CAS 7429-90-5) | TWA  | 4 mg/m <sup>3</sup>   | Inhalable dust.  |
|                           |      | 1,5 mg/m <sup>3</sup> | Respirable dust. |

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

| Components   | Type | Value                   | Form                 |
|--|------|-------------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | AGW  | 10 mg/m <sup>3</sup>    | Inhalable fraction.  |
|  |      | 1,25 mg/m <sup>3</sup>  | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | AGW  | 0,03 mg/m <sup>3</sup>  | Inhalable fraction.  |
|  |      | 0,006 mg/m <sup>3</sup> | Respirable fraction. |

**Greece. OELs (Decree No. 90/1999, as amended)**

| Components   | Type | Value                | Form               |
|--|------|----------------------|--------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 5 mg/m <sup>3</sup>  | Inhalable          |
|  |      | 10 mg/m <sup>3</sup> | Welding fume.      |
|  |      | 10 mg/m <sup>3</sup> | Pyrophoric powder. |
|  |      | 10 mg/m <sup>3</sup> | Respirable.        |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1 mg/m <sup>3</sup>  |                    |

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

| Components   | Type    | Value                 | Form        |
|--|---------|-----------------------|-------------|
| Aluminium (CAS 7429-90-5)                                      | TWA     | 6 mg/m <sup>3</sup>   | Respirable. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | Ceiling | 0,1 mg/m <sup>3</sup> |             |

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

| Components   | Type | Value                  | Form  |
|--|------|------------------------|-------|
| Aluminium (CAS 7429-90-5)                                      | STEL | 10 mg/m <sup>3</sup>   | Dust. |
|  | TWA  | 5 mg/m <sup>3</sup>    | Dust. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,05 mg/m <sup>3</sup> | Dust. |

**Ireland. Occupational Exposure Limits**

| Components   | Type | Value                 | Form             |
|--|------|-----------------------|------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 1 ppm                 | Respirable dust. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> |                  |

**Italy. Occupational Exposure Limits**

| Components   | Type | Value                 | Form                 |
|--|------|-----------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 1 mg/m <sup>3</sup>   | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1,5 mg/m <sup>3</sup> | Inhalable fraction.  |

**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

| Components   | Type | Value                  |
|--|------|------------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 2 mg/m <sup>3</sup>    |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,05 mg/m <sup>3</sup> |

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

| Components   | Type | Value                 | Form                 |
|--|------|-----------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 5 mg/m <sup>3</sup>   | Inhalable fraction.  |
|  |      | 2 mg/m <sup>3</sup>   | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> |                      |

**Norway. Administrative Norms for Contaminants in the Workplace**

| Components   | Type | Value                  | Form               |
|--|------|------------------------|--------------------|
| Aluminium (CAS 7429-90-5)                                      | TLV  | 5 mg/m <sup>3</sup>    | Welding fume.      |
|  |      | 5 mg/m <sup>3</sup>    | Pyrophoric powder. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TLV  | 0,05 mg/m <sup>3</sup> |                    |

**Poland. 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                  | Form                 |
|--|------|------------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 2,5 mg/m <sup>3</sup>  | Inhalable fraction.  |
|  |      | 1,2 mg/m <sup>3</sup>  | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,25 mg/m <sup>3</sup> |                      |

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

| Components   | Type | Value                 | Form                 |
|--|------|-----------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 1 mg/m <sup>3</sup>   | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1,5 mg/m <sup>3</sup> | Inhalable fraction.  |

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

| Components   | Type | Value                 | Form  |
|--|------|-----------------------|-------|
| Aluminium (CAS 7429-90-5)                                      | STEL | 3 mg/m <sup>3</sup>   | Fume. |
|  |      | 10 mg/m <sup>3</sup>  | Dust. |
|  | TWA  | 3 mg/m <sup>3</sup>   | Dust. |
|  |      | 1 mg/m <sup>3</sup>   | Fume. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | STEL | 0,5 mg/m <sup>3</sup> |       |
|  | TWA  | 0,1 mg/m <sup>3</sup> |       |

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

| Components   | Type | Value                  | Form                |
|--|------|------------------------|---------------------|
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,05 mg/m <sup>3</sup> | Inhalable fraction. |

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

| Components                | Type | Value                 | Form                 |
|---------------------------|------|-----------------------|----------------------|
| Aluminium (CAS 7429-90-5) | TWA  | 4 mg/m <sup>3</sup>   | Inhalable fraction.  |
|                           |      | 1,5 mg/m <sup>3</sup> | Respirable 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                 |
|--|------|-------------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 10 mg/m <sup>3</sup>    | Inhalable fraction.  |
|  |      | 1,25 mg/m <sup>3</sup>  | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,006 mg/m <sup>3</sup> | Respirable fraction. |

**Spain. Occupational Exposure Limits**

| Components   | Type | Value                | Form          |
|--|------|----------------------|---------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 5 mg/m <sup>3</sup>  | Welding fume. |
|  |      | 10 mg/m <sup>3</sup> | Dust.         |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 1 mg/m <sup>3</sup>  |               |

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

| Components   | Type | Value                 | Form             |
|--|------|-----------------------|------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 5 mg/m <sup>3</sup>   | Total dust.      |
|  |      | 2 mg/m <sup>3</sup>   | Respirable dust. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> | Total dust.      |

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

| Components   | Type | Value                 | Form                 |
|--|------|-----------------------|----------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 3 mg/m <sup>3</sup>   | Respirable fraction. |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> | Inhalable fraction.  |

**UK. EH40 Workplace Exposure Limits (WELs)**

| Components   | Type | Value                 | Form             |
|--|------|-----------------------|------------------|
| Aluminium (CAS 7429-90-5)                                      | TWA  | 4 mg/m <sup>3</sup>   | Respirable dust. |
|  |      | 10 mg/m <sup>3</sup>  | Inhalable dust.  |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | TWA  | 0,5 mg/m <sup>3</sup> |                  |

## Biological limit values

### Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)

| Components                | Value    | Determinant | Specimen | Sampling Time |
|---------------------------|----------|-------------|----------|---------------|
| Aluminium (CAS 7429-90-5) | 200 mg/l | Aluminium   | Urine    | *             |

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

### 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 |
|--|-----------------|-------------|------------------------|---------------|
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | 0,077 µmol/mmol | Nickel      | Creatinine in<br>urine | *             |
|  | 0,04 mg/g       | Nickel      | Creatinine in<br>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 POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | 0,1 µmol/l | Nickel      | Urine    | *             |

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

### Germany. TRGS 903, BAT List (Biological Limit Values)

| Components                | Value   | Determinant | Specimen | Sampling Time |
|---------------------------|---------|-------------|----------|---------------|
| Aluminium (CAS 7429-90-5) | 50 µg/g | Aluminium   | 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

| Components   | Value           | Determinant | Specimen               | Sampling Time |
|--|-----------------|-------------|------------------------|---------------|
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | 0,02 mg/g       | Nickel      | Creatinine in<br>urine | *             |
|  | 0,038 µmol/mmol | Nickel      | Creatinine in<br>urine | *             |

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

### Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

| Components                | Value   | Determinant | Specimen               | Sampling Time |
|---------------------------|---------|-------------|------------------------|---------------|
| Aluminium (CAS 7429-90-5) | 60 µg/g | Aluminium   | Creatinine in<br>urine | *             |

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

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

| Components   | Value   | Determinant | Specimen               | Sampling Time |
|--|---------|-------------|------------------------|---------------|
| Aluminium (CAS 7429-90-5)                                      | 60 µg/g | Aluminium   | Creatinine in<br>urine | *             |
| NICKEL POWDER;<br>[PARTICLE DIAMETER <<br>1MM] (CAS 7440-02-0) | 45 µg/l | Nickel      | 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.

## Exposure guidelines

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

NICKEL POWDER; [PARTICLE DIAMETER < 1MM] (CAS 7440-02-0) Can be absorbed through the skin.



## 8.2. Exposure controls

### Appropriate engineering controls

Good general ventilation 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

Wear safety glasses with side shields (or goggles).

#### Skin protection

##### - Hand protection

Wear gloves to prevent metal cuts and skin abrasions during handling.

##### - Other

Wear suitable protective clothing.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### Hygiene measures

Observe any medical surveillance requirements. 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. Contaminated work clothing should not be allowed out of the workplace.

### Environmental exposure controls

Inform appropriate managerial or supervisory personnel of all environmental releases.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

##### Physical state

Solid.

##### Form

Particulate.

##### Colour

Light grey.

#### Odour

None.

#### Odour threshold

Not applicable.

#### pH

Not applicable.

#### Melting point/freezing point

660 °C (1220 °F) estimated / Not applicable.

#### Initial boiling point and boiling range

Not applicable.

#### Flash point

Not applicable.

#### Evaporation rate

Not applicable.

#### Flammability (solid, gas)

None known.

#### Upper/lower flammability or explosive limits

##### Explosive limit - lower (%)

Not applicable.

##### Explosive limit - lower (%) temperature

Not applicable.

##### Explosive limit - upper (%)

Not applicable.

##### Explosive limit - upper (%) temperature

Not applicable.

#### Vapour pressure

Not applicable.

#### Vapour density

Not applicable.

#### Relative density

Not applicable.

#### Solubility(ies)

##### Solubility (water)

Insoluble.

#### Partition coefficient (n-octanol/water)

Not applicable.

#### Auto-ignition temperature

Not applicable.

#### Decomposition temperature

Not applicable.

#### Viscosity

Not applicable.

#### Explosive properties

Not explosive.

**Oxidising properties** Not oxidising.

## 9.2. Other information

**Density** 7,85 g/cm<sup>3</sup> 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** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

**10.5. Incompatible materials** Strong acids.

**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** May cause an allergic skin reaction.

**Eye contact** Not likely, due to the form of the product.

**Ingestion** May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** May cause an allergic skin reaction.

### 11.1. Information on toxicological effects

**Acute toxicity** Not known.

**Skin corrosion/irritation** Not relevant, due to the form of the product.

**Serious eye damage/eye irritation** Not likely, due to the form of the product.

**Respiratory sensitisation** Not a respiratory sensitizer.

**Skin sensitisation** May cause an allergic skin reaction.

**Germ cell mutagenicity** Not classified.

**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

NICKEL POWDER; [PARTICLE DIAMETER < 1MM] (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)

Aluminium (CAS 7429-90-5) Carcinogenic, Category 1A  
NICKEL POWDER; [PARTICLE DIAMETER < 1MM] (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** Not classified.

**Specific target organ toxicity - repeated exposure** Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Not an aspiration hazard.

**Mixture versus substance information** Not applicable.

**Other information** Not available.

## SECTION 12: Ecological information

**12.1. Toxicity** Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

| Components  | Species   | Test Results   |
|---|---|--|
| NICKEL POWDER; [PARTICLE DIAMETER < 1MM] (CAS 7440-02-0)    |   |  |
| <b>Aquatic</b>  |   |  |
| <i>Acute</i>  |   |  |
| Fish  | LC50  | Rainbow trout,donaldson trout<br>(Oncorhynchus mykiss) 0,06 mg/l, 4 days |
| <b>12.2. Persistence and degradability</b>                  | No data is available on the degradability of any ingredients in the mixture.  |  |
| <b>12.3. Bioaccumulative potential</b>                      | No data available.  |  |
| <b>Partition coefficient n-octanol/water (log Kow)</b>      | Not available.  |  |
| <b>Bioconcentration factor (BCF)</b>                        | Not available.  |  |
| <b>12.4. Mobility in soil</b>                               | No data available.  |  |
| <b>12.5. Results of PBT and vPvB assessment</b>             | Not a PBT or vPvB substance or mixture.   |  |
| <b>12.6. Other adverse effects</b>                          | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |  |
| <b>12.7. Additional information</b>                         |   |  |
| <b>Estonia Dangerous substances in soil Data</b>            |   |  |
| NICKEL POWDER; [PARTICLE DIAMETER < 1MM]<br>(CAS 7440-02-0) | Nickel (Ni) 150 mg/kg   |  |
|   | Nickel (Ni) 50 mg/kg  |  |
|   | Nickel (Ni) 500 mg/kg   |  |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</b>               | 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). |
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.       |
| <b>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                         |
| <b>Special precautions</b>          | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

## 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 (EU) 2019/1021 On persistent organic pollutants (recast), 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**

Aluminium (CAS 7429-90-5)

NICKEL POWDER; [PARTICLE DIAMETER < 1MM] (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 POWDER; [PARTICLE DIAMETER < 1MM] (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**

Aluminium (CAS 7429-90-5)

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

#### National regulations

According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

#### 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.

#### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

#### Revision information

Physical & Chemical Properties: Multiple Properties

#### Training information

Follow training instructions when handling this material.

#### Disclaimer

Materion Advanced Materials Germany GmbH cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).