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

1.1 Product identifier
Identification of the substance
ICP-MS Multi-element standard (28 element, 10 mg/l)
Article number
6802
Registration number (REACH)
not relevant (mixture)

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
laboratory and analytical use
laboratory chemical

1.3 Details of the supplier of the safety data sheet
Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet:
Department Health, Safety and Environment

E-mail (competent person):
sicherheit@carlroth.de

1.4 Emergency telephone number
Emergency information service
Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>(Skin Corr. 1B)</td>
<td>H314</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>(Eye Dam. 1)</td>
<td>H318</td>
</tr>
</tbody>
</table>

Supplemental hazard information

<table>
<thead>
<tr>
<th>Code</th>
<th>Supplemental hazard information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUH071</td>
<td>corrosive to the respiratory tract</td>
</tr>
</tbody>
</table>
2.2 Label elements

Labelling GHS

Signal word

Danger

Pictograms

Hazard statements

H314 Causes severe skin burns and eye damage

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - response

P303+P361+P353 IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant.

Supplemental hazard information

EUH071 Corrosive to the respiratory tract.

Hazardous ingredients for labelling: Nitric acid

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)

H314 Causes severe skin burns and eye damage.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container to industrial combustion plant.
Composition/information on ingredients.

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

EUH071 Corrosive to the respiratory tract.

contains: Nitric acid

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description of the mixture
Composition/information on ingredients.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>wt%</th>
<th>Classification acc. to 1272/2008/EC</th>
<th>Pictograms</th>
<th>Specific Conc. Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>CAS No 7697-37-2</td>
<td>5</td>
<td>Ox. Liq. 2 / H272 Met. Corr. 1 / H290 Skin Corr. 1A / H314 EUH071</td>
<td>Ox. Liq. 2; H272: C ≥ 99 % Ox. Liq. 3; H272: 65 % ≤ C &lt; 99 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C &lt; 20 % Skin Irrit. 2; H315: 1 % ≤ C &lt; 5 % Eye Dam. 1; H318: C ≥ 3 % Eye Irrit. 2; H319: 1 % ≤ C &lt; 3 %</td>
<td></td>
</tr>
<tr>
<td>nickel dinitrate</td>
<td>CAS No 13138-45-9</td>
<td>0.00</td>
<td>Ox. Sol. 2 / H272 Acute Tox. 4 / H302 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Dam. 1 / H318 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Muta. 2 / H341 Carc. 1A / H350i Rep. 1B / H360D STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410</td>
<td>Skin Irrit. 2; H315: C ≥ 20 % Skin Sens. 1; H317: C ≥ 0.01 % STOT RE 1; H372: C ≥ 1 % STOT RE 2; H373: 0.1 % ≤ C &lt; 1 %</td>
<td></td>
</tr>
<tr>
<td>Silver nitrate</td>
<td>CAS No 7761-88-8</td>
<td>0.00</td>
<td>Ox. Sol. 2 / H272 Skin Corr. 1B / H314 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks
For full text of Hazard- and EU Hazard-statements: see SECTION 16.
4.1 Description of first aid measures

General notes
Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
After contact with skin, wash immediately with plenty of water.

Following eye contact
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

Following ingestion
Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

4.2 Most important symptoms and effects, both acute and delayed
Corrosion, Risk of blindness, Gastric perforation, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed
none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Non-combustible.

Hazardous combustion products
May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advises on how to contain a spill
Covering of drains.

Advises on how to clean up a spill
Wipe up with absorbent material (e.g. cloth, fleece). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Handle and open container with care. Clear contaminated areas thoroughly.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)
No information available.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [ppm]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>beryllium compounds</td>
<td>Be</td>
<td>WES</td>
<td></td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
<td>WES</td>
</tr>
<tr>
<td>AU</td>
<td>lead, inorganic compounds</td>
<td>Pb, df</td>
<td>WES</td>
<td></td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
<td>WES</td>
</tr>
<tr>
<td>AU</td>
<td>cadmium compounds</td>
<td>Cd</td>
<td>WES</td>
<td></td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td>WES</td>
</tr>
<tr>
<td>AU</td>
<td>chromium(III) compounds</td>
<td>Cr</td>
<td>WES</td>
<td></td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td>WES</td>
</tr>
<tr>
<td>AU</td>
<td>nickel dinitrate</td>
<td>13138-45-9</td>
<td>WES</td>
<td></td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>WES</td>
</tr>
<tr>
<td>AU</td>
<td>nitric acid</td>
<td>7697-37-2</td>
<td>WES</td>
<td>2</td>
<td>5.2</td>
<td>4</td>
<td>10</td>
<td></td>
<td>WES</td>
</tr>
</tbody>
</table>

Notation
Be  Calculated as Be (beryllium)
Cd  Calculated as Cd (cadmium)
Cr  Calculated as Cr (chromium)
df  As dust and fumes
Pb  Calculated as Pb (lead)
STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified
TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs/DMELs/PNECs and other threshold levels

• relevant DNELs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>DNEL</td>
<td>1.3 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - systemic effects</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>DNEL</td>
<td>1.3 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>7697-37-2</td>
<td>DNEL</td>
<td>2.6 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Individual protection measures (personal protective equipment)
Eye/face protection
Use safety goggles with side protection. Wear face protection.

Skin protection
• hand protection
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
• type of material
NBR (Nitrile rubber)
• material thickness
>0,11 mm
• breakthrough times of the glove material
>480 minutes (permeation: level 6)
• other protection measures
Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection
Respiratory protection necessary at: Aerosol or mist formation.

Environmental exposure controls
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: liquid (fluid)
- Colour: acc. to product description
- Odour: this information is not available
- Odour threshold: No data available

Other physical and chemical parameters
- pH (value): This information is not available.
- Melting point/freezing point: 0 °C
- Initial boiling point and boiling range: 100 °C at 1,013 hPa
- Flash point: not determined
- Evaporation rate: no data available
- Flammability (solid, gas): not relevant (fluid)

Explosive limits
• lower explosion limit (LEL): this information is not available
• upper explosion limit (UEL): this information is not available
- Explosion limits of dust clouds: not relevant
- Vapour pressure: This information is not available.
ICP-MS Multi-element standard (28 element, 10 mg/l)

article number: 6802

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible in any proportion</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td></td>
</tr>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not determined</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Shall not be classified as explosive</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>none</td>
</tr>
</tbody>
</table>

9.2 Other information
There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is not reactive under normal ambient conditions.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Violent reaction with: Strong oxidiser

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Shall not be classified as acutely toxic.

Skin corrosion/irritation
Causes severe burns.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

• If in eyes
causes burns, Causes serious eye damage, risk of blindness

• If inhaled
corrosive to the respiratory tract

• If on skin
causes severe burns, causes poorly healing wounds

Other information
None

SECTION 12: Ecological information

12.1 Toxicity
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

12.2 Process of degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
Data are not available.
12.4 **Mobility in soil**  
Data are not available.

12.5 **Results of PBT and vPvB assessment**  
Data are not available.

12.6 **Other adverse effects**  
Data are not available.

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**  
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Sewage disposal-relevant information**  
Do not empty into drains.

**Waste treatment of containers/packagings**  
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 **Relevant provisions relating to waste**  
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 **Remarks**  
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

**SECTION 14: Transport information**

14.1 **UN number**  
3264

14.2 **UN proper shipping name**  
CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

**Hazardous ingredients**  
Nitric acid

14.3 **Transport hazard class(es)**

**Class**  
8 (corrosive substances)

14.4 **Packing group**

**II** (substance presenting medium danger)

14.5 **Environmental hazards**

**none** (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 **Special precautions for user**

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 **Transport in bulk according to Annex II of MARPOL and the IBC Code**

The cargo is not intended to be carried in bulk.

14.8 **Information for each of the UN Model Regulations**

- **Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)**

**UN number**

3264

**Proper shipping name**

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

**Particulars in the transport document**

UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid), 8, II, (E)

**Class**

8

**Classification code**

C1
ICP-MS Multi-element standard (28 element, 10 mg/l)

**article number: 6802**

| Packing group | II |
| Danger label(s) | 8 |

**Emergency Action Code**

• **International Maritime Dangerous Goods Code (IMDG)**

- UN number: 3264
- Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
- Particulars in the shipper's declaration: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid), 8, II
- Class: 8
- Marine pollutant: -
- Packing group: II
- Danger label(s): 8

- Special provisions (SP): 274
- Excepted quantities (EQ): E2
- Limited quantities (LQ): 1 L
- EmS: F-A, S-B
- Stowage category: B
- Segregation group: 1 - Acids

• **International Civil Aviation Organization (ICAO-IATA/DGR)**

- UN number: 3264
- Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s.
- Particulars in the shipper's declaration: UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (contains: Nitric acid), 8, II
- Class: 8
- Packing group: II
- Danger label(s): 8
ICP-MS Multi-element standard (28 element, 10 mg/l)

article number: 6802

Special provisions (SP) A3, 274
Excepted quantities (EQ) E2
Limited quantities (LQ) 0,5 L

SECTION 15: Regulatory information

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

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox.</td>
<td>acute toxicity</td>
</tr>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>Aquatic Acute</td>
<td>hazardous to the aquatic environment - acute hazard</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>hazardous to the aquatic environment - chronic hazard</td>
</tr>
<tr>
<td>Carc.</td>
<td>carcinogenicity</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DMEL</td>
<td>Derived Minimal Effect Level</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>EC No</td>
<td>The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
<tr>
<td>Eye Dam.</td>
<td>seriously damaging to the eye</td>
</tr>
<tr>
<td>Eye Irrit.</td>
<td>irritant to the eye</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
</tbody>
</table>
ICP-MS Multi-element standard (28 element, 10 mg/l)

**article number:** 6802

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>Met. Corr.</td>
<td>substance or mixture corrosive to metals</td>
</tr>
<tr>
<td>Muta.</td>
<td>germ cell mutagenicity</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>Ox. Liq.</td>
<td>oxidising liquid</td>
</tr>
<tr>
<td>Ox. Sol.</td>
<td>oxidising solid</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>ppm</td>
<td>parts per million</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>Repr.</td>
<td>reproductive toxicity</td>
</tr>
<tr>
<td>Resp. Sens.</td>
<td>respiratory sensitisation</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>Skin Corr.</td>
<td>corrosive to skin</td>
</tr>
<tr>
<td>Skin Irrit.</td>
<td>irritant to skin</td>
</tr>
<tr>
<td>Skin Sens.</td>
<td>skin sensitisation</td>
</tr>
<tr>
<td>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>STOT RE</td>
<td>specific target organ toxicity - repeated exposure</td>
</tr>
<tr>
<td>TWA</td>
<td>time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>WES</td>
<td>Safe Work Australia: Workplace exposure standards for airborne contaminants</td>
</tr>
</tbody>
</table>

**Key literature references and sources for data**
- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

**List of relevant phrases (code and full text as stated in chapter 2 and 3)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H272</td>
<td>may intensify fire; oxidiser</td>
</tr>
<tr>
<td>H290</td>
<td>may be corrosive to metals</td>
</tr>
<tr>
<td>H302</td>
<td>harmful if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>causes skin irritation</td>
</tr>
<tr>
<td>H317</td>
<td>may cause an allergic skin reaction</td>
</tr>
<tr>
<td>H318</td>
<td>causes serious eye damage</td>
</tr>
<tr>
<td>H332</td>
<td>harmful if inhaled</td>
</tr>
</tbody>
</table>
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H334</td>
<td>may cause allergy or asthma symptoms or breathing difficulties if inhaled</td>
</tr>
<tr>
<td>H341</td>
<td>suspected of causing genetic defects</td>
</tr>
<tr>
<td>H350i</td>
<td>may cause cancer by inhalation</td>
</tr>
<tr>
<td>H360D</td>
<td>may damage the unborn child</td>
</tr>
<tr>
<td>H372</td>
<td>causes damage to organs through prolonged or repeated exposure</td>
</tr>
<tr>
<td>H400</td>
<td>very toxic to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>very toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.