

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 14.11.2018


Version number 22

Revision: 14.11.2018

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

- **1.1 Product identifier**
- **Product name:** Vario Manganese Citrate (Buffer) F10 ml
- **Catalog number:** 251406
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**  
Xylem Analytics Germany GmbH  
WTW  
Dr.-Karl-Slevogt-Straße 1  
82362 Weilheim  
Germany  
Tel. +49 881 183-0
- **Informing department:** E-Mail: Info.WTW@Xyleminc.com
- **1.4 Emergency telephone number:** Chemtrec (USA & Canada) 800-424-9300 (INTERNATIONAL) 001 703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**
-  GHS07
- Eye Irrit. 2 H319 Causes serious eye irritation.
- **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P280 Wear protective gloves / eye protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **2.3 Other hazards** No further relevant information available.
- **Results of PBT and vPvB assessment**  
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

### SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of organic and inorganic compounds

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**Product name: Vario Manganese Citrate (Buffer) F10 ml**

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<b>· Dangerous components:</b>			
CAS: 77-92-9	citric acid	☠ Eye Irrit. 2, H319	10-20%
EINECS: 201-069-1			

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **After inhalation** Supply fresh air.

· **After skin contact**

Instantly rinse with water.

If skin irritation continues, consult a doctor.

· **After eye contact**

Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.

· **After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

In case of persistent symptoms consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed:**

after swallowing of large amounts:

coughing

pain

mucous membrane irritation

sickness

vomiting

fever

· **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

### SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents** Use fire fighting measures that suit the environment.

· **5.2 Special hazards arising from the substance or mixture**

The product is not combustible.

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire:

Sulphur oxides (SO<sub>x</sub>)

Phosphorus oxides (P<sub>x</sub>O<sub>x</sub>)

Sodium oxide

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

· **Additional information**

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

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

· **Advice for non-emergency personnel:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

· **Advice for emergency responders:** Protective equipment: see section 8

· **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

· **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Collect mechanically.

Dispose of contaminated material as waste according to item 13.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling

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See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**  
Prevent formation of dust.  
Thorough dedusting.
- **Hygiene measures:**  
Avoid contact with the eyes.  
Take off immediately all contaminated clothing.  
Wash hands during breaks and at the end of the work.  
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Store in cool, dry conditions in well sealed containers.  
Protect from heat and direct sunlight.  
Protect from the effects of light.  
Store under dry conditions.  
Protect from humidity and keep away from water.  
This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **DNELs** Derived No Effect Level (DNEL)
- **Recommended monitoring procedures:**  
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Engineering measures:**  
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.  
See item 7.
- **Personal protective equipment**
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**  
Protective gloves.  
Preventive skin protection by use of skin-protecting agents is recommended.  
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**  
nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm
- **Penetration time of glove material**  
Value for the permeation: Level = 1 (< 10 min )  
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**  
Tightly sealed safety glasses.  
use against the effects of fumes / dust

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- **Body protection:** Protective work clothing.
- **Limitation and supervision of exposure into the environment:** No further relevant information available.

### SECTION 9: Physical and chemical properties

· <b>9.1 Information on basic physical and chemical properties</b>	
· <b>Appearance:</b>	
Form / Physical state:	Powder
Colour:	White
· <b>Odour:</b> Odourless	
· <b>Odour threshold:</b> Not applicable	
· <b>pH-value (19 g/l) at 20°C:</b> 6.3	
· <b>Melting point/Freezing point:</b> Not determined	
· <b>Initial boiling point and boiling range:</b> Not determined	
· <b>Flash point:</b> Not applicable	
· <b>Flammability (solid, gas):</b> The product is not combustible.	
· <b>Ignition temperature:</b> Not applicable	
· <b>Decomposition temperature:</b> Not determined.	
· <b>Auto-ignition temperature:</b> Product is not self-igniting.	
· <b>Explosive properties:</b> Product is not explosive.	
· <b>Flammability or explosive limits:</b>	
Lower:	Not applicable
Upper:	Not applicable
· <b>Oxidising properties:</b> none	
· <b>Vapour pressure:</b> Not applicable.	
· <b>Density at 20°C:</b> 1.578 g/cm <sup>3</sup>	
· <b>Relative density:</b> Not determined.	
· <b>Vapour density:</b> Not applicable.	
· <b>Evaporation rate:</b> Not applicable.	
· <b>Solubility(ies):</b>	
Water:	Soluble
· <b>Partition coefficient: n-octanol/water:</b> Not applicable.	
· <b>Viscosity:</b> Not applicable.	
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Solids content:	100.0 %
· <b>9.2 Other information</b> No further relevant information available.	

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**  
Aqueous solution reacts with metals.  
Reacts with certain metals  
Citric acid: incompatible with bases, strong oxidizers, amines. Contact with metal nitrates may be explosive. Attacks aluminum, copper, zinc und their alloys, when wet.
- **10.4 Conditions to avoid** Strong heating (decomposition)
- **10.5 Incompatible materials:**  
metals  
aluminium, copper, zinc, metal ions  
aluminium

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- **10.6 Hazardous decomposition products:**  
sodium monoxide  
see section 5

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Information on components:**  
Citric acid: A single drop of a 2% or 5% solution in water causes little or no irritation.  
A 0.5% solution held in contact with the eye causes irreversible tissue damage to the cornea.  
Citric Acid caused mild irritation when 500 mg was tested on rabbit skin in a 24-hour test.  
(CHEMINFO, Canadian Centre for Occupational Health and Safety)
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **Experience with humans:** CAS 77-92-9: Can cause kidney damages.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Other information:**  
Toxic for fish:  
sulphates > 7 g/l
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**  
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- **12.6 Other adverse effects**  
Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.  
Avoid transfer into the environment.
- **Water hazard:**  
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.

### SECTION 13: Disposal considerations

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

#### · European waste catalogue

16 05 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

### SECTION 14: Transport information

<ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	No
<ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>	Not dangerous according to the above specifications.

### \* SECTION 15: Regulatory information

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

- **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

- **Regulation (EU) No 649/2012**

None of the ingredients is listed.

- **National regulations**

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H319 Causes serious eye irritation.

- **Training hints** Provide adequate information, instruction and training for operators.

- **Abbreviations and acronyms:**

ICAO: International Civil Aviation Organisation

EC50: effective concentration, 50 percent (in vivo)

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
DNEL: Derived No-Effect Level (REACH)  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

**Sources**

Data arise from safety data sheets, reference works and literature.  
IUCLID (International Uniform Chemical Information Database)  
International Chemical Safety Cards (ICSCs)

· \* **Data compared to the previous version altered.**

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

**1.1 Product identifier****Product name:** Vario Sodium periodate F 10 ml**Catalog number:** 251406**1.2 Relevant identified uses of the substance or mixture and uses advised against****Application of the substance / the preparation:** Reagent for water analysis**1.3 Details of the supplier of the safety data sheet****Supplier:**Xylem Analytics Germany GmbH  
WTW  
Dr.-Karl-Slevogt-Straße 1  
82362 Weilheim  
Germany  
Tel. +49 881 183-0**Informing department:** E-Mail: Info.WTW@Xyleminc.com**1.4 Emergency telephone number:** Chemtrec (USA & Canada) 800-424-9300 (INTERNATIONAL) 001 703-527-3887

### SECTION 2: Hazards identification

**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS03 flame over circle

Ox. Sol. 2      H272 May intensify fire; oxidiser.



GHS08 health hazard

STOT RE 1      H372 Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure: Oral.



GHS05 corrosion

Skin Corr. 1C      H314 Causes severe skin burns and eye damage.

Eye Dam. 1      H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.**Hazard pictograms**

GHS03



GHS05



GHS08



GHS09

**Signal word** Danger

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**Product name: Vario Sodium periodate F 10 ml**

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**Hazard-determining components of labelling:**

sodium periodate

**Hazard statements**

H272 May intensify fire; oxidiser.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure: Oral.

H400 Very toxic to aquatic life.

**Precautionary statements**

P210 Keep away from heat. - No smoking.

P221 Take any precaution to avoid mixing with combustibles.

P280 Wear protective gloves/protective clothing/eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.

P308+P310 IF exposed or concerned: Immediately call a POISON CENTER/doctor.

**2.3 Other hazards** No further relevant information available.





**Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures**
**Description:** Mixture of inorganic compounds.

**Dangerous components:**

CAS: 7790-28-5	sodium periodate	40-50%
EINECS: 232-197-6	 Ox. Sol. 1, H271;  STOT RE 1, H372;  Skin Corr. 1C, H314;  Aquatic Acute 1, H400	

**Additional information** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

**4.1 Description of first aid measures**
**General information** Instantly remove any clothing soiled by the product.

**After inhalation**

Supply fresh air.

Call a doctor immediately.

**After skin contact**

Instantly rinse with water.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

**After eye contact**

Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.

Call a doctor immediately.

**After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Do not induce vomiting; instantly call for medical help.

**4.2 Most important symptoms and effects, both acute and delayed:**

burns

after inhalation:

coughing

breathing difficulty

damage to the affected mucous membranes possible

after swallowing:

strong caustic effect.

sickness

vomiting

cardiovascular disorders

**4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

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**Product name: Vario Sodium periodate F 10 ml**

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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Water, Carbon dioxide (CO<sub>2</sub>), Foam, Fire-extinguishing powder
- **5.2 Special hazards arising from the substance or mixture**  
 The product is not combustible.  
 Has a fire-promoting effect due to release of oxygen.  
 Formation of toxic gases is possible during heating or in case of fire.  
 Can be released in case of fire:  
 Sodium monoxide  
 Sulphur oxides (SO<sub>x</sub>)  
 iodine compounds  
 Sodium oxide
- **5.3 Advice for firefighters**
- **Protective equipment:**  
 Wear self-contained breathing apparatus.  
 Wear full protective suit.
- **Additional information**  
 Collect contaminated fire fighting water separately. It must not enter drains.  
 Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
 Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**  
 Wear protective equipment. Keep unprotected persons away.  
 Avoid substance contact.  
 Ensure adequate ventilation  
 Use breathing protection against the effects of fumes/dust/aerosol.
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**  
 Ensure adequate ventilation.  
 Collect mechanically.  
 Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**  
 See Section 8 for information on personal protection equipment.  
 See Section 13 for information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**  
 Ensure good ventilation/exhaustion at the workplace.  
 Prevent formation of dust.  
 Keep ignition sources away - Do not smoke.
- **Hygiene measures:**  
 Do not inhale dust / smoke / mist.  
 Do not get in eyes, on skin, or on clothing.  
 Take off immediately all contaminated clothing.  
 Wash hands during breaks and at the end of the work.  
 Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**  
 Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.  
 Store away from flammable substances.  
 Store away from oxidising agents.
- **Further information about storage conditions:**  
 Keep container tightly sealed.

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- Protect from heat and direct sunlight.
- Protect from the effects of light.
- Store under dry conditions.
- Protect from humidity and keep away from water.
- This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Recommended monitoring procedures:**  
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Engineering measures:**  
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Personal protective equipment**
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**  
Protective gloves.  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Preventive skin protection by use of skin-protecting agents is recommended.  
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**  
nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm
- **Penetration time of glove material**  
Value for the permeation: Level = 1 ( < 10 min )  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.
- **Limitation and supervision of exposure into the environment:**  
Avoid release to the environment.  
Do not allow product to reach sewage system or water bodies.

### SECTION 9: Physical and chemical properties

- | · <b>9.1 Information on basic physical and chemical properties</b> |        |
|--|--------|
| · <b>Appearance:</b>   |        |
| <b>Form / Physical state:</b>                                      | Powder |
| <b>Colour:</b>   | White  |
| · <b>Odour:</b>  |        |
| Odourless  |        |
| · <b>Odour threshold:</b>  |        |
| Not applicable   |        |
| · <b>pH-value (8.9 g/l) at 20°C:</b>                               |        |
| 4.7  |        |
| · <b>Melting point/Freezing point:</b>                             |        |
| 175 (347 °F)°C (CAS 7790-28-5)                                     |        |
| Decomposition  |        |
| · <b>Initial boiling point and boiling range:</b>                  |        |
| Not applicable   |        |
| Decomposition  |        |
| · <b>Flash point:</b>  |        |
| Not applicable   |        |
| · <b>Flammability (solid, gas):</b>                                |        |
| Product is not inflammable.  |        |
| Contact with combustible material may cause fire.                  |        |

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· <b>Ignition temperature:</b>	Not applicable
· <b>Decomposition temperature:</b>	270 (518 °F)°C (CAS 7790-28-5)
· <b>Auto-ignition temperature:</b>	Product is not self-igniting.
· <b>Explosive properties:</b>	Product is not explosive.
· <b>Flammability or explosive limits:</b>	
<b>Lower:</b>	Not applicable
<b>Upper:</b>	Not applicable
· <b>Oxidising properties:</b>	May intensify fire; oxidiser.
· <b>Vapour pressure:</b>	Not applicable.
· <b>Density at 20°C:</b>	3.2 g/cm <sup>3</sup> (26.7 lbs/gal)
· <b>Relative density:</b>	Not determined.
· <b>Vapour density:</b>	Not applicable.
· <b>Evaporation rate:</b>	Not applicable.
· <b>Solubility(ies):</b>	
<b>Water:</b>	Soluble
· <b>Partition coefficient: n-octanol/water:</b>	Not applicable.
· <b>Viscosity:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Solids content:</b>	100.0 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** Substance/product is oxidising when dry.
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
  - Reacts with powdered metals
  - Reacts with flammable substances
  - Perchlorates
  - Reacts with reducing agents
  - Reacts with acids
  - Violent reactions possible with:
- **10.4 Conditions to avoid** Strong heating (decomposition)
- **10.5 Incompatible materials:**
  - metals
  - organic substances
- **10.6 Hazardous decomposition products:**
  - sodium monoxide, iodine, hydrogen iodide
  - see section 5

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

#### · LD/LC50 values that are relevant for classification:

**CAS: 7790-28-5 sodium periodate**

LD50 IPR	58 mg/kg (mouse)
NOAEL	3 mg/kg (rat) (oral, 90d) (Registrant, ECHA: read-across CAS 7758-05-6 / target organ: thyroid)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
  - Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
  - Causes serious eye damage.

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Risk of blindness!

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
  - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
  - **Carcinogenicity** Based on available data, the classification criteria are not met.
  - **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure**  
Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure: Oral.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

**Information on components:**
**CAS: 7790-28-5 sodium periodate**

OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test) (read-across CAS 7758-05-6)
OECD 487	(negative) (In Vitro Mammalian Cell Micronucleus Test) (read-across CAS 7758-05-6)

**Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

## SECTION 12: Ecological information

**12.1 Toxicity**
**Aquatic toxicity:**
**CAS: 7790-28-5 sodium periodate**

EC50	0.18 mg/l/48h (Daphnia magna) (OECD 202)
EC50	1.1 mg/l/72 h (Pseudokirchneriella subcapitata) (OECD 201)
LC50	>17 mg/l/96h (rainbow trout) (OECD 203)

 · **Bacterial toxicity:** sulphates toxic > 2.5 g/l

**Other information:**

 Toxic for fish:  
sulphates > 7 g/l

**12.2 Persistence and degradability .**
**Other information:**

 Mixture of inorganic compounds.  
Methods for the determination of biodegradability are not applicable to inorganic substances.

 · **12.3 Bioaccumulative potential** No further relevant information available.

 · **12.4 Mobility in soil** No further relevant information available.

**12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

 · **12.6 Other adverse effects** Avoid transfer into the environment.

**Water hazard:**

 Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
**Recommendation**

 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Hand over to disposers of hazardous waste.

**European waste catalogue**

16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances
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**Uncleaned packagings:**

 · **Recommendation:** Disposal must be made according to official regulations.

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### SECTION 14: Transport information

<ul style="list-style-type: none"> <li>· 14.1 UN-Number</li> <li>· ADR, IMDG, IATA</li> </ul>	UN3085
<ul style="list-style-type: none"> <li>· 14.2 UN proper shipping name</li> <li>· ADR</li> <li>· IMDG</li> <li>· IATA</li> </ul>	3085 OXIDIZING SOLID, CORROSIVE, N.O.S. (sodium periodate), ENVIRONMENTALLY HAZARDOUS OXIDIZING SOLID, CORROSIVE, N.O.S. (sodium periodate), MARINE POLLUTANT OXIDIZING SOLID, CORROSIVE, N.O.S. (sodium periodate)
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR</li> </ul>	<div style="display: flex; justify-content: space-around; align-items: center;">    </div>
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	5.1 (OC2) Oxidising substances. 5.1+8
<ul style="list-style-type: none"> <li>· IMDG</li> </ul>	<div style="display: flex; justify-content: space-around; align-items: center;">    </div>
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	5.1 Oxidising substances. 5.1/8
<ul style="list-style-type: none"> <li>· IATA</li> </ul>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div>
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	5.1 Oxidising substances. 5.1 (8)
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	II
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> <li>· Special marking (ADR):</li> </ul>	No Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Kehler Number:</li> <li>· EMS Number:</li> <li>· Stowage Category</li> <li>· Handling Code</li> <li>· Segregation Code</li> </ul>	Warning: Oxidising substances. 58 F-A,S-Q B H1 Keep as dry as reasonably practicable SG38 Stow "separated from" ammonium compounds. SG49 Stow "separated from" cyanides SG60 Stow "separated from" peroxides
<ul style="list-style-type: none"> <li>· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</li> </ul>	Not applicable.

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<b>· Transport/Additional information:</b>	
<b>· ADR</b>	
· Limited quantities (LQ)	1 kg
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· Transport category	2
· Tunnel restriction code	E
<b>· IMDG</b>	
· Limited quantities (LQ)	1 kg
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g

### SECTION 15: Regulatory information

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

##### · Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

##### · Directive 2012/18/EU (SEVESO III):

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

##### · Seveso category

P8 OXIDISING LIQUIDS AND SOLIDS

E1 Hazardous to the Aquatic Environment

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

##### · Regulation (EU) No 649/2012

None of the ingredients is listed.

##### · National regulations

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H271 May cause fire or explosion; strong oxidiser.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure: Oral.

H400 Very toxic to aquatic life.

· **Training hints** Provide adequate information, instruction and training for operators.

#### · Abbreviations and acronyms:

ICAO: International Civil Aviation Organisation

EC50: effective concentration, 50 percent (in vivo)

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Ox. Sol. 1: Oxidizing solids – Category 1  
Ox. Sol. 2: Oxidizing solids – Category 2  
Skin Corr. 1C: Skin corrosion/irritation – Category 1C  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1  
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

**· Sources**

Data arise from safety data sheets, reference works and literature.  
IUCLID (International Uniform Chemical Information Database)  
International Chemical Safety Cards (ICSCs)

· \* **Data compared to the previous version altered.**

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