# Human Apo B-48 (637-10641)

## Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>[4] HRP-conjugated Avidin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[5] Chromogen (TMB)</td>
<td>Skin Irrit. 2 / H315</td>
<td>!</td>
</tr>
<tr>
<td></td>
<td>Eye Irrit. 2 / H319</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STOT SE 3 / H335</td>
<td></td>
</tr>
<tr>
<td>Wash Stock Solution (10X)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[7] Buffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop Solution (1 mol/L sulfuric acid)</td>
<td>Met. Corr. 1 / H290</td>
<td>!</td>
</tr>
<tr>
<td></td>
<td>Skin Irrit. 2 / H315</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eye Irrit. 2 / H319</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name

Registration number (REACH)
not relevant (mixture)

CAS number
not relevant (mixture)

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

Relevant identified uses
Chemicals for various applications
For research use

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH
Fuggerstr. 12
41468 Neuss
Germany

Telephone: +49 (0) 2131 - 311-0
Telefax: +49(0)2131 - 311 100

e-mail (competent person)
sdb@csb-online.de

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

Medical Emergency information in case of poisoning: Poison Information Center Mainz - 24 h - Phone: +49 (0) 6313-19240 (advisory service in German or English language).
As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

for full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects
Spillage and fire water can cause pollution of watercourses.

Additional information
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word not required
Pictograms not required

Supplemental hazard information
EUH208 Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.
EUH210 Safety data sheet available on request.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetra-</td>
<td>CAS No 9036-19-5</td>
<td>&lt; 1</td>
<td>Acute Tox. 4 / H302 Eye Dam. 1 / H318</td>
<td>[2]</td>
</tr>
<tr>
<td>methylbutyl)phenyl]. .omega.-hydroxy-</td>
<td></td>
<td></td>
<td>Aquatic Chronic 2 / H411</td>
<td></td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>CAS No 2682-20-4</td>
<td>&lt; 1</td>
<td>Acute Tox. 3 / H301 Acute Tox. 3 / H311</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC No 220-239-6</td>
<td></td>
<td>Acute Tox. 3 / H330 Acute Tox. 1 / H330</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B / H314 Eye Dam. 1 / H318 Skin</td>
<td>[2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sens. 1A / H317 STOT SE 3 / H335 Aquatic Acute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 / H400 Aquatic Chronic 2 / H411</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.

Following skin contact
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed

These information are not available.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products
nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ventilate affected area.
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.

For emergency responders
Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advices on how to clean up a spill
Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques
Use of adsorbent materials.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.
**SECTION 7: Handling and storage**

### 7.1 Precautions for safe handling

**Measures to prevent fire as well as aerosol and dust generation**
Use local and general ventilation.
Keep away from sources of ignition - No smoking.

**Specific notes/details**
None.

**Measures to protect the environment**
Avoid release to the environment.

**Advice on general occupational hygiene**
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

### 7.2 Conditions for safe storage, including any incompatibilities

**Flammability hazards**
None.

**Incompatible substances or mixtures**
Incompatible materials: see section 10.

**Protect against external exposure, such as**
heat, frost

**Consideration of other advice**
Keep away from food, drink and animal feedingstuffs.

**Ventilation requirements**
Provision of sufficient ventilation.

**Specific designs for storage rooms or vessels**

**Storage temperature**
<25 °C

**Packaging compatibilities**
Keep only in original container.

### 7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.0001 mg/l</td>
<td>marine water</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.001 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>8.5 mg/kg</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.85 mg/cm³</td>
<td>marine sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>45.34 mg/cm³</td>
<td>soil</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>1.33 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

<table>
<thead>
<tr>
<th>Material</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls
Use appropriate container to avoid environmental contamination.
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
- Form: fluid
- Colour: these information are not available
- Odour: these information are not available
- Odour threshold: these information are not available

**Other safety parameters**
- pH (value): 7.2 - 7.4
- Melting point/freezing point: these information are not available
- Initial boiling point and boiling range: ~100 °C
- Flash point: these information are not available
- Evaporation rate: these information are not available
- Flammability (solid, gas): not relevant (fluid)

**Explosive limits**
- Lower explosion limit (LEL): these information are not available
- Upper explosion limit (UEL): these information are not available
- Vapour pressure: these information are not available
- Density: ~1 \( g/cm^3 \)
- Vapour density: these information are not available
- Relative density: these information are not available

**Solubility(ies)**
- Water solubility: miscible in any proportion

**Partition coefficient**
- n-octanol/water (log KOW): these information are not available
- Auto-ignition temperature: these information are not available
- Relative self-ignition temperature for solids: not relevant (Fluid)
 Decomposition temperature  these information are not available

**Viscosity**

Kinematic viscosity  these information are not available

Dynamic viscosity  these information are not available

Explosive properties  not explosive

Oxidising properties  shall not be classified as oxidising

### 9.2 Other information

None

---

### 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

No known hazardous reactions.

#### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### 10.5 Incompatible materials

oxidisers

#### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

---

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Classification procedure**

If not otherwise specified the classification is based on:

Ingredients of the mixture (additivity formula).

**Classification according to GHS (1272/2008/EC, CLP)**

Acute toxicity
**Acute toxicity of components of the mixture**

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), alpha-[(1,1,3,3-tetramethylbutyl)phenyl]-omega-hydroxy-</td>
<td>9036-19-5</td>
<td>oral</td>
<td>LD50</td>
<td>1,800 mg/kg</td>
<td>rat</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>inhalation: vapour</td>
<td>LC50</td>
<td>0.384 mg/l/4h</td>
<td>rat</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>oral</td>
<td>LD50</td>
<td>285 mg/kg</td>
<td>rat</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2,000 mg/kg</td>
<td>rat</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Shall not be classified as corrosive/irritant to skin.

**Serious eye damage/eye irritation**
Shall not be classified as seriously damaging to the eye or eye irritant.

**Respiratory or skin sensitisation**
Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.

**Skin sensitisation**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Respiratory sensitisation**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Germ cell mutagenicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Carcinogenicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Reproductive toxicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Specific target organ toxicity - single exposure**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.
Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>1.9 mg/l</td>
<td>daphnia magna</td>
<td>48 h</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>0.158 mg/l</td>
<td>algae (Selenastrum capricornutum)</td>
<td>72 h</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>LC50</td>
<td>4.77 mg/l</td>
<td>rainbow trout (Oncorhynchus mykiss)</td>
<td>96 h</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)
Test data are not available for the complete mixture.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>NOEC</td>
<td>0.04 mg/l</td>
<td>daphnia magna</td>
<td>21 d</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Biodegradation
The relevant substances of the mixture are readily biodegradable.

Persistence
Data are not available.
12.3 **Bioaccumulative potential**
Data are not available.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>BCF</th>
<th>Log KOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td></td>
<td>-0.486</td>
</tr>
</tbody>
</table>

12.4 **Mobility in soil**
Data are not available.

12.5 **Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

**Remarks**
Water hazard class - WHC (Wassergefährdungsklasse): 2 (Hazardous to water)

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**
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**
Handle contaminated packages in the same way as the substance itself.

**Remarks**
Please consider the relevant national or regional provisions.

**SECTION 14: Transport information**

14.1 **UN number**
not subject to transport regulations

14.2 **UN proper shipping name**
-

14.3 **Transport hazard class(es)**

Class
-

14.4 **Packing group**
-

14.5 **Environmental hazards**
-
14.6 Special precautions for user
There is no additional information.

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)
Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

List of substances subject to authorisation (REACH, Annex XIV)
None of the ingredients are listed.

<table>
<thead>
<tr>
<th>Substance of Very High Concern (SVHC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name acc. to inventory</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>4-nonylphenol, branched, ethoxylated</td>
</tr>
</tbody>
</table>

Legend
- candidate list: Substances meeting the criteria referred to in Article 57 and for eventual inclusion in Annex XIV
- SEtEnv. A57f: Equivalent level of concern having probable serious effects to the environment (article 57a)

SECTION 16: Other information

Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>Relevant PNECs of components of the mixture: change in the listing (table)</td>
<td></td>
</tr>
</tbody>
</table>
### 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>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>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>
<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>log KOW</td>
<td>n-Octanol/water</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>NLP</td>
<td>No-Longer Polymer</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>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
</tbody>
</table>
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Description of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

### Key literature references and sources for data

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### 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>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</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>H330</td>
<td>Fatal if inhaled.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>
Disclaimer
This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>[3] Biotinylated Antibody B-48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>not relevant (mixture)</td>
</tr>
<tr>
<td>CAS number</td>
<td>not relevant (mixture)</td>
</tr>
</tbody>
</table>

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

Relevant identified uses
Chemicals for various applications
For research use

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH
Fuggerstr. 12
41468 Neuss
Germany

Telephone: +49 (0) 2131 - 311-0
Telefax: +49(0)2131 - 311 100

e-mail (competent person) sdb@csb-online.de

Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

Medical Emergency information in case of poisoning: Poison Information Center Mainz - 24 h - Phone: +49 (0) 6313-19240 (advisory service in German or English language).
As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

for full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects
Spillage and fire water can cause pollution of watercourses.

Additional information
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word not required

Pictograms not required

Supplemental hazard information

EUH210 Safety data sheet available on request.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>CAS No 9036-19-5</td>
<td>&lt; 1</td>
<td>Acute Tox. 4 / H302 Eye Dam. 1 / H318 Aquatic Chronic 2 / H411</td>
<td>![Pictogram]</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.
Following skin contact
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media
   Suitable extinguishing media
   water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)
   Unsuitable extinguishing media
   water jet

5.2 Special hazards arising from the substance or mixture
   Hazardous decomposition products: Section 10.
   Hazardous combustion products
   carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters
   In case of fire and/or explosion do not breathe fumes.
   Co-ordinate firefighting measures to the fire surroundings.
   Do not allow firefighting water to enter drains or water courses.
   Collect contaminated firefighting water separately.
   Fight fire with normal precautions from a reasonable distance.
   Special protective equipment for firefighters
   use suitable breathing apparatus
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**
Ventilate affected area.
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.

**For emergency responders**
Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

**Advises on how to clean up a spill**
Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

**Appropriate containment techniques**
Use of adsorbent materials.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

**Measures to prevent fire as well as aerosol and dust generation**
Use local and general ventilation.
Keep away from sources of ignition - No smoking.

**Specific notes/details**
None.
Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards
None.

Incompatible substances or mixtures
Incompatible materials: see section 10.

Protect against external exposure, such as
heat, frost, UV-radiation/sunlight

Consideration of other advice
Keep away from food, drink and animal feedingstuffs.

Ventilation requirements
 Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature
<25 °C

Packaging compatibilities
Keep only in original container.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<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>EU</td>
<td>carbon dioxide</td>
<td>124-38-9</td>
<td>IOELV</td>
<td>5,000</td>
<td>9,000</td>
<td></td>
<td></td>
<td></td>
<td>2006/15/EC</td>
</tr>
<tr>
<td>GB</td>
<td>carbon dioxide</td>
<td>124-38-9</td>
<td>WEL</td>
<td>5,000</td>
<td>9,150</td>
<td>15,000</td>
<td>27,400</td>
<td></td>
<td>EH40/2005</td>
</tr>
</tbody>
</table>

Notation

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
8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
</tbody>
</table>

| Colour         | these information are not available |
| Odour          | these information are not available |
| Odour threshold| these information are not available |

Other safety parameters

| pH (value)  | 7.2 - 7.4 |
| Melting point/freezing point | these information are not available |
| Initial boiling point and boiling range | ~100 °C |
| Flash point | these information are not available |
| Evaporation rate | these information are not available |
### Flammability (solid, gas)
- not relevant
- (fluid)

### Explosive limits
- **Lower explosion limit (LEL)**: these information are not available
- **Upper explosion limit (UEL)**: these information are not available
- Vapour pressure: these information are not available
- Density: \( \sim 1 \text{ g/cm}^3 \) at 20 °C
- Vapour density: these information are not available
- Relative density: these information are not available

### Solubility(ies)
- **Water solubility**: miscible in any proportion

### Partition coefficient
- n-octanol/water (log KOW): these information are not available
- Auto-ignition temperature: these information are not available
- Relative self-ignition temperature for solids: not relevant (fluid)

### Decomposition temperature
- these information are not available

### Viscosity
- **Kinematic viscosity**: these information are not available
- **Dynamic viscosity**: these information are not available
- Explosive properties: not explosive
- Oxidising properties: shall not be classified as oxidising

### Other information
- None
SECTIN 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
No known hazardous reactions.

10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials
oxidisers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
If not otherwise specified the classification is based on: Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

<table>
<thead>
<tr>
<th>Acute toxicity of components of the mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of substance</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.
Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

Aquatic toxicity (chronic)
Test data are not available for the complete mixture.

12.2 Persistence and degradability

Biodegradation
Data are not available.

Persistence
Data are not available.

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
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects
Data are not available.

Endocrine disrupting potential
None of the ingredients are listed.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 2 (Hazardous to water)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
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
Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
-

14.3 Transport hazard class(es)
Class
-

14.4 Packing group
-

14.5 Environmental hazards
-
14.6 Special precautions for user
There is no additional information.

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)
Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII
none of the ingredients are listed

List of substances subject to authorisation (REACH, Annex XIV)
none of the ingredients are listed

<table>
<thead>
<tr>
<th>Substance of Very High Concern (SVHC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name acc. to inventory</td>
</tr>
<tr>
<td>4-nonylphenol, branched, ethoxylated</td>
</tr>
</tbody>
</table>

Legend
candidate list Substances meeting the criteria referred to in Article 57 and for eventual inclusion in Annex XIV SETEnv. A57f Equivalent level of concern having probable serious effects to the environment (article 57a)

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
none of the ingredients are listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

none of the ingredients are listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

none of the ingredients are listed

SECTION 16: Other information

Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
</table>

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 Chronic</td>
<td>Hazardous to the aquatic environment - chronic hazard</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>
</tbody>
</table>
Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</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>
<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>IOELV</td>
<td>Indicative occupational exposure limit value</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>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</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>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>STEL</td>
<td>Short-term exposure limit</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>WEL</td>
<td>Workplace exposure limit</td>
</tr>
</tbody>
</table>

Key literature references and sources for data

Classification procedure
Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Responsible for the safety data sheet
C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld
Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-online.de
Website: www.csb-online.de

Disclaimer
This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name                  [4] HRP-conjugated Avidin
Product number             637-10641
Registration number (REACH) not relevant (mixture)
CAS number                 not relevant (mixture)

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

Relevant identified uses   Chemicals for various applications
For research use

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH       Telephone: +49 (0) 2131 - 311-0
Fuggerstr. 12              Telefax: +49(0)2131 - 311 100
41468 Neuss
Germany

e-mail (competent person)  sdb@csb-online.de

Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

Medical Emergency information in case of poisoning: Poison Information Center Mainz - 24 h - Phone: +49 (0) 6313-19240 (advisory service in German or English language). As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

for full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word: not required

Pictograms: not required

Supplemental hazard information

EUH208: Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.

EUH210: Safety data sheet available on request.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Hazardous ingredients acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of substance</strong></td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetra-methylbutyl)phenyl]-.omega.-hydroxy-</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.

Following skin contact
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Hazardous decomposition products: Section 10.

Hazardous combustion products
carbon monoxide (CO), carbon dioxide (CO2), sulphur oxides (SOx)

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ventilate affected area.
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.

For emergency responders
Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advices on how to clean up a spill
Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques
Use of adsorbent materials.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.
Keep away from sources of ignition - No smoking.

Specific notes/details
None.

Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards
None.

Incompatible substances or mixtures
Incompatible materials: see section 10.

Protect against external exposure, such as
heat, frost, UV-radiation/sunlight

Consideration of other advice
Keep away from food, drink and animal feedingstuffs.

Ventilation requirements
Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature
2 - 10 °C

Packaging compatibilities
Keep only in original container.

7.3 Specific end use(s)

No information available.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Relevant PNECs 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>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.0001 mg/l</td>
<td>marine water</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.001 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>8.5 mg/kg</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.85 mg/cm³</td>
<td>marine sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>45.34 mg/cm³</td>
<td>soil</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>1.33 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.
**Environmental exposure controls**
Use appropriate container to avoid environmental contamination.
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
- **Form**: fluid
- **Colour**: these information are not available
- **Odour**: these information are not available
- **Odour threshold**: these information are not available

**Other safety parameters**
- **pH (value)**: 7.2 - 7.4
- **Melting point/freezing point**: these information are not available
- **Initial boiling point and boiling range**: ~100 °C
- **Flash point**: these information are not available
- **Evaporation rate**: these information are not available
- **Flammability (solid, gas)**: not relevant
  - (fluid)

**Explosive limits**
- **Lower explosion limit (LEL)**: these information are not available
- **Upper explosion limit (UEL)**: these information are not available
- **Vapour pressure**: these information are not available
- **Density**: ~1 g/cm³
- **Vapour density**: these information are not available
- **Relative density**: these information are not available

**Solubility(ies)**
- **Water solubility**: miscible in any proportion

**Partition coefficient**
- **n-octanol/water (log KOW)**: these information are not available
- **Auto-ignition temperature**: these information are not available
- **Relative self-ignition temperature for solids**: not relevant
  - (Fluid)
This material is not reactive under normal ambient conditions. The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. No known hazardous reactions. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity
Shall not be classified as corrosive/irritant to skin.

Shall not be classified as seriously damaging to the eye or eye irritant.

Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.

Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Acute toxicity estimate (ATE) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[(oxy-1,2-ethanediyl), .alpha.-(1,1,3,3-tetra-methylbutyl)phenyl]-omega.-hydroxy-</td>
<td>9036-19-5</td>
<td>oral</td>
<td>1,800 mg/kg</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>oral</td>
<td>285 mg/kg</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>dermal</td>
<td>300 mg/kg</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>inhalation: vapour</td>
<td>0.384 mg/l/4h</td>
</tr>
</tbody>
</table>

### Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

### Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitisation
Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.

### Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Carcinogenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.
Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>1.9 mg/l</td>
<td>daphnia magna</td>
<td>48 h</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>0.158 mg/l</td>
<td>algae (Selenastrum capricornutum)</td>
<td>72 h</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>LC50</td>
<td>4.77 mg/l</td>
<td>rainbow trout (Oncorhynchus mykiss)</td>
<td>96 h</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)
Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>NOEC</td>
<td>0.04 mg/l</td>
<td>daphnia magna</td>
<td>21 d</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Biodegradation
The relevant substances of the mixture are readily biodegradable.

Persistence
Data are not available.
12.3 Bioaccumulative potential

Data are not available.

**Bioaccumulative potential of components of the mixture**

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>BCF</th>
<th>Log KOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td></td>
<td>-0.486</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

**Remarks**

Water hazard class - WHC (Wassergefährdungsklasse): 2 (Hazardous to water)

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods

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**

Handle contaminated packages in the same way as the substance itself.

**Remarks**

Please consider the relevant national or regional provisions.
SECTION 14: Transport information

14.1 UN number  not subject to transport regulations
14.2 UN proper shipping name  -
14.3 Transport hazard class(es)  Class  -
14.4 Packing group  -
14.5 Environmental hazards  -
14.6 Special precautions for user  There is no additional information.
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)  Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)  Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)  Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

List of substances subject to authorisation (REACH, Annex XIV)

<table>
<thead>
<tr>
<th>Substance of Very High Concern (SVHC)</th>
<th>Name acc. to inventory</th>
<th>CAS No</th>
<th>Listed in</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-nonylphenol, branched, ethoxylated</td>
<td></td>
<td></td>
<td>Candidate list</td>
<td>SETEnv. A57f</td>
</tr>
</tbody>
</table>

Legend

candidate list Substances meeting the criteria referred to in Article 57 and for eventual inclusion in Annex XIV
SETEnv. A57f Equivalent level of concern having probable serious effects to the environment (article 57a)
### Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Trade name: HRP-conjugated Avidin</td>
<td>Trade name: [4] HRP-conjugated Avidin</td>
</tr>
</tbody>
</table>

### 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>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>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>
</tbody>
</table>
Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<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>log KOW</td>
<td>n-Octanol/water</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of “Marine Pollutant”)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</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>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</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>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data


Classification procedure

Physical and chemical properties. Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin.</td>
</tr>
</tbody>
</table>
[4] HRP-conjugated Avidin

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>H314</td>
<td>Causes severe skin burns and eye damage.</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>H330</td>
<td>Fatal if inhaled.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Responsible for the safety data sheet

C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld
Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-online.de
Website: www.csb-online.de

Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>[5] Chromogen (TMB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product number</td>
<td>(638-13079)</td>
</tr>
<tr>
<td>Registration number (REACH)</td>
<td>A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.</td>
</tr>
</tbody>
</table>

| EC number | 224-621-3 |
| CAS number | 4430-24-4 |

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

| Relevant identified uses | General use |

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH
Fuggerstr. 12
41468 Neuss
Germany

Telephone: +49 (0) 2131 - 311-0
Telefax: +49(0)2131 - 311 100

e-mail (competent person) | sdb@csb-online.de

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

As above or next toxicological information centre.
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>3.2</td>
</tr>
<tr>
<td>3.3</td>
</tr>
<tr>
<td>3.8R</td>
</tr>
</tbody>
</table>

for full text of abbreviations: see SECTION 16

Additional information

According to the results of its assessment, this substance is not a PBT or a vPvB.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word warning

Pictograms

GHS07

Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements

P260 Do not breathe dust.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P312 Call a POISON CENTER/doctor if you feel unwell.

Labelling of packages where the contents do not exceed 125 ml

Signal word warning
[5] Chromogen (TMB)

Hazard pictogram(s)
Warning. GHS07

Hazard statements

2.3 Other hazards
Dust explosion hazards.

Results of PBT and vPvB assessment
According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances
Name of substance 3',3'',5',5''-Tetraiodophenolsulfonephthalein

Identifiers
CAS No 4430-24-4
EC No 224-621-3
Molecular formula C19H10I4O5S
Molar mass 858 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
In case of respiratory tract irritation, consult a physician.

Following skin contact
Rinse skin with water/shower.
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses, if present and easy to do. Continue rinsing.
Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
Narcotic effects.
Cough, pain, choking, and breathing difficulties.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
water, foam, alcohol resistant foam, fire extinguishing powder

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.
Danger of dust explosion.
Deposited combustible dust has considerable explosion potential.

Hazardous combustion products
carbon monoxide (CO), carbon dioxide (CO2), sulphur oxides (SOx), hydrogen iodide (HI)

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters
use suitable breathing apparatus
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Remove persons to safety.
Ventilate affected area.
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.

For emergency responders
Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
take up mechanically

Advices on how to clean up a spill
Take up mechanically.
Collect spillage.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.
Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharge.
Only vacuum cleaners containing no ignition sources may be used for combustible dusts.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Layers, deposits and heaps of combustible dust must be considered, like any other source which can form a hazardous explosive atmosphere. Dust deposits may accumulate on all deposition surfaces in a technical room. Danger of dust explosion.

**Measures to protect the environment**
Avoid release to the environment.

**Advice on general occupational hygiene**
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

### 7.2 Conditions for safe storage, including any incompatibilities

**Explosive atmospheres**
Removal of dust deposits.
Only vacuum cleaners containing no ignition sources may be used for combustible dusts.

**Flammability hazards**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Ground/bond container and receiving equipment.

**Incompatible substances or mixtures**
Incompatible materials: see section 10.

**Protect against external exposure, such as**
heat, humidity, UV-radiation/sunlight

**Consideration of other advice**
Keep away from food, drink and animal feedingstuffs.

**Ventilation requirements**
Provision of sufficient ventilation.

**Specific designs for storage rooms or vessels**

**Storage temperature**
<25 °C

**Packaging compatibilities**
Keep only in original container.

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

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>dust</td>
<td>i</td>
<td>WEL</td>
<td>10</td>
<td></td>
<td>EH40/2005</td>
</tr>
<tr>
<td>GB</td>
<td>dust</td>
<td>r</td>
<td>WEL</td>
<td>4</td>
<td></td>
<td>EH40/2005</td>
</tr>
</tbody>
</table>

**Notation**
- **i**: inhalable fraction
- **r**: respirable fraction

**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.

8.2 Exposure controls

**Appropriate engineering controls**
General ventilation.

**Individual protection measures (personal protective equipment)**

**Eye/face protection**
Wear eye/face protection.

**Hand protection**

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

**Respiratory protection**
In case of inadequate ventilation wear respiratory protection.
Particulate filter device (EN 143).
Environmental exposure controls
Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Form</td>
<td>powder</td>
</tr>
<tr>
<td>Colour</td>
<td>orange - brown</td>
</tr>
<tr>
<td>Odour</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Other safety parameters

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>this material is combustible, but will not ignite readily</td>
</tr>
<tr>
<td>Explosion limits of dust clouds</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Solubility (ies)

Water solubility

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Partition coefficient

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not relevant</td>
</tr>
<tr>
<td>(Solid matter)</td>
<td></td>
</tr>
<tr>
<td>Relative self-ignition temperature for solids</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>229 °C</td>
</tr>
</tbody>
</table>
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
Danger of dust explosion.

10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

10.5 Incompatible materials
oxidisers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
If not otherwise specified the classification is based on:
Animal studies; Evidence from any other toxicity tests; Expert judgement (weight of evidence determination).
Classification according to GHS (1272/2008/EC, CLP)

**Acute toxicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Skin corrosion/irritation**
Causes skin irritation.

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Respiratory or skin sensitisation**

**Skin sensitisation**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Respiratory sensitisation**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Germ cell mutagenicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Carcinogenicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Reproductive toxicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Specific target organ toxicity - single exposure**
May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Aspiration hazard**
Shall not be classified as presenting an aspiration hazard.
SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
No data available.

Aquatic toxicity (chronic)
No data available.

12.2 Persistence and degradability

Biodegradation
Data are not available.

Persistence
Data are not available.

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
According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Other adverse effects
Data are not available.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 1 (Slightly hazardous to water)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information
Do not empty into drains.

Waste treatment of containers/packagings
Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions.
SECTION 14: Transport information

14.1 UN number  
not subject to transport regulations

14.2 UN proper shipping name  
-

14.3 Transport hazard class(es)  
Class  
-

14.4 Packing group  
-

14.5 Environmental hazards  
-

14.6 Special precautions for user  
There is no additional information.

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)  
Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)  
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)  
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
Relevant provisions of the European Union (EU)  
Seveso Directive

2012/18/EU (Seveso III)  

<table>
<thead>
<tr>
<th>No</th>
<th>Dangerous substance/hazard categories</th>
<th>Qualifying quantity (tonnes) for the application of lower and upper-tier requirements</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not assigned</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>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>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</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>STEL</td>
<td>Short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>
Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL</td>
<td>Workplace exposure limit</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

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>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

Responsible for the safety data sheet
C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld
Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-online.de
Website: www.csb-online.de

Disclaimer
This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.
**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1 **Product identifier**

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Wash Stock Solution (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>not relevant (mixture)</td>
</tr>
<tr>
<td>CAS number</td>
<td>not relevant (mixture)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Relevant identified uses</th>
<th>Chemicals for various applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For research use</td>
</tr>
</tbody>
</table>

1.3 **Details of the supplier of the safety data sheet**

- **Wako Chemicals GmbH**
  - Fuggerstr. 12
  - 41468 Neuss
  - Germany
- Telephone: +49 (0) 2131 - 311-0
- Telefax: +49(0)2131 - 311 100

**e-mail (competent person)**

sdb@csb-online.de

- Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 **Emergency telephone number**

As above or next toxicological information centre.

**SECTION 2: Hazards identification**

2.1 **Classification of the substance or mixture**

- for full text of abbreviations: see SECTION 16

<table>
<thead>
<tr>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>This mixture does not contain any substances that are assessed to be a PBT or a vPvB.</td>
</tr>
</tbody>
</table>

2.2 **Label elements**

<table>
<thead>
<tr>
<th>Labelling according to Regulation (EC) No 1272/2008 (CLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal word</td>
</tr>
<tr>
<td>Pictograms</td>
</tr>
</tbody>
</table>
Supplemental hazard information

EUH210 Safety data sheet available on request.

2.3 Other hazards
There is no additional information.

Results of PBT and vPvB assessment
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances
not relevant (mixture)

3.2 Mixtures

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.

Following skin contact
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

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

Suitable extinguishing media
- water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
- water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products
- carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters

- In case of fire and/or explosion do not breathe fumes.
- Co-ordinate firefighting measures to the fire surroundings.
- Do not allow firefighting water to enter drains or water courses.
- Collect contaminated firefighting water separately.
- Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters
- use suitable breathing apparatus

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
- Ventilate affected area.
- 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.

For emergency responders
- Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

- Keep away from drains, surface and ground water.
- Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advises on how to clean up a spill
- Collect spillage.
- Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).
Appropriate containment techniques
Use of adsorbent materials.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.
Keep away from sources of ignition - No smoking.

Specific notes/details
None.

Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards
None.

Incompatible substances or mixtures
Incompatible materials: see section 10.

Protect against external exposure, such as
heat, frost, UV-radiation/sunlight

Consideration of other advice
Keep away from food, drink and animal feedingstuffs.
Wash Stock Solution (10X)

Ventilation requirements
Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature
<25 °C

Packaging compatibilities
Keep only in original container.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
No data available.

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

| Material | these information are not available |

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.
### 9.1 Information on basic physical and chemical properties

#### Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>fluid</td>
</tr>
<tr>
<td>Colour</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odour</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

#### Other safety parameters

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>7.2 - 7.4</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant</td>
</tr>
<tr>
<td>Flammability (fluid)</td>
<td></td>
</tr>
</tbody>
</table>

#### Explosive limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosion limit (LEL)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Upper explosion limit (UEL)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

#### Solubility(ies)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water solubility</td>
<td>miscible in any proportion</td>
</tr>
</tbody>
</table>

#### Partition coefficient

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Relative self-ignition temperature for solids</td>
<td>not relevant</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

United Kingdom: en
 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
No known hazardous reactions.

10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials
oxidisers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

 SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.
Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

Aquatic toxicity (chronic)
Test data are not available for the complete mixture.
12.2 Persistence and degradability

Biodegradation
The relevant substances of the mixture are readily biodegradable.

Persistence
Data are not available.

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
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects
Data are not available.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 1 (Slightly hazardous to water)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
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
Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
-

14.3 Transport hazard class(es)
Class
-

14.4 Packing group
-

14.5 Environmental hazards
-
14.6 Special precautions for user
There is no additional information.

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)
Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

SECTION 16: Other information

Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Trade name: [6] Wash Stock Solution (10X)</td>
<td>Trade name: Wash Stock Solution (10X)</td>
</tr>
</tbody>
</table>

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
</tbody>
</table>
Wash Stock Solution (10X)

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</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>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure
Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Responsible for the safety data sheet
C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld
Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-online.de
Website: www.csb-online.de

Disclaimer
This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name
[7]Buffer

Registration number (REACH) not relevant (mixture)

CAS number not relevant (mixture)

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

Relevant identified uses
Chemicals for various applications
For research use

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH
Fuggerstr. 12
41468 Neuss
Germany

Telephone: +49 (0) 2131 - 311-0
Telefax: +49(0)2131 - 311 100

e-mail (competent person) sdb@csb-online.de

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

Medical Emergency information in case of poisoning: Poison Information Center Mainz - 24 h - Phone: +49 (0) 6313-19240 (advisory service in German or English language).
As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

for full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

Additional information

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word not required
Pictograms not required

Supplemental hazard information

EUH208 Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.
EUH210 Safety data sheet available on request.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>CAS No 2682-20-4</td>
<td>&lt; 1</td>
<td>Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 1 / H330 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 STOT SE 3 / H335 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411</td>
<td><img src="image" alt="" /></td>
</tr>
</tbody>
</table>

| EC No 220-239-6 |

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

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

**Following skin contact**
Wash with plenty of soap and water.

**Following eye contact**
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

**Following ingestion**
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

**Notes for the doctor**
none

### 4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media
**Suitable extinguishing media**
water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)

**Unsuitable extinguishing media**
water jet

### 5.2 Special hazards arising from the substance or mixture
Hazardous decomposition products: Section 10.

**Hazardous combustion products**
carbon monoxide (CO), carbon dioxide (CO2), phosphorus oxides (PxOy)

### 5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

**Special protective equipment for firefighters**
use suitable breathing apparatus
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ventilate affected area.
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.

For emergency responders
Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advises on how to clean up a spill
Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques
Use of adsorbent materials.

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

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.
Keep away from sources of ignition - No smoking.

Specific notes/details
None.
Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards
None.

Incompatible substances or mixtures
Incompatible materials: see section 10.

Protect against external exposure, such as
heat, frost, UV-radiation/sunlight

Consideration of other advice
Keep away from food, drink and animal feedingstuffs.

Ventilation requirements
Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.0001 mg/l</td>
<td>marine water</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.001 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>8.5 mg/kg</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.85 mg/cm³</td>
<td>marine sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>45.34 mg/cm³</td>
<td>soil</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>1.33 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.0001 mg/l</td>
<td>marine water</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.001 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>8.5 mg/kg</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>0.85 mg/cm³</td>
<td>marine sediment</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>45.34 mg/cm³</td>
<td>soil</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>PNEC</td>
<td>1.33 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
Check leak-tightness/impermeability prior to use.
In the case of wanting to use the gloves again, clean them before taking off and air them well.
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.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>fluid</td>
</tr>
<tr>
<td>Colour</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odour</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

Other safety parameters

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>7.2 - 7.4</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>~100 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant (fluid)</td>
</tr>
<tr>
<td><strong>Explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower explosion limit (LEL)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Upper explosion limit (UEL)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Density</td>
<td>$\sim 1 \text{ g/cm}^3$</td>
</tr>
<tr>
<td>Vapour density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>these information are not available</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>not miscible in any proportion</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td></td>
</tr>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Relative self-ignition temperature for solids</td>
<td>not relevant (Fluid)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>these information are not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>not explosive</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>shall not be classified as oxidising</td>
</tr>
</tbody>
</table>

### 9.2 Other information

None
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
No known hazardous reactions.

10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials
oxidisers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>oral</td>
<td>285 mg/kg</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>dermal</td>
<td>300 mg/kg</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>inhalation: vapour</td>
<td>0.384 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.
Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation
Contains 2-Methyl-2H-isothiazol-3-one. May produce an allergic reaction.

Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>1.9 mg/l</td>
<td>daphnia magna</td>
<td>48 h</td>
</tr>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>EC50</td>
<td>0.158 mg/l</td>
<td>algae (Selenastrum capricornutum)</td>
<td>72 h</td>
</tr>
</tbody>
</table>
Aquatic toxicity (acute) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>LC50</td>
<td>4.77 mg/l</td>
<td>rainbow trout (Oncorhynchus mykiss)</td>
<td>96 h</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td>NOEC</td>
<td>0.04 mg/l</td>
<td>daphnia magna</td>
<td>21 d</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Biodegradation

Data are not available.

Persistence

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>BCF</th>
<th>Log KOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2H-isothiazol-3-one</td>
<td>2682-20-4</td>
<td></td>
<td>-0.486</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Data are not available.
12.5 Results of PBT and vPvB assessment
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects
Data are not available.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 2 (Hazardous to water)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
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
Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
-

14.3 Transport hazard class(es)
Class
-

14.4 Packing group
-

14.5 Environmental hazards
-

14.6 Special precautions for user
There is no additional information.

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)
Not subject to ADR, RID and ADN.
**International Maritime Dangerous Goods Code (IMDG)**
Not subject to IMDG.

**International Civil Aviation Organization (ICAO-IATA/DGR)**
Not subject to ICAO-IATA.

### SECTION 15: Regulatory information

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

### 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>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>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>
</tbody>
</table>
Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<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>log KOW</td>
<td>n-Octanol/water</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>NLP</td>
<td>No-Longer Polymer</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>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</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>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data


Classification procedure

Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin.</td>
</tr>
<tr>
<td>Code</td>
<td>Text</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</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>H330</td>
<td>Fatal if inhaled.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

**Responsible for the safety data sheet**

C.S.B. GmbH  
Düsseldorfer Str. 113  
47809 Krefeld  
Telephone: +49 (0) 2151 - 652086 - 0  
Telefax: +49 (0) 2151 - 652086 - 9  
e-Mail: info@csb-online.de  
Website: www.csb-online.de

**Disclaimer**

This information is based upon the present state of our knowledge.  
This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name
Stop Solution (1 mol/L sulfuric acid)

Registration number (REACH)
not relevant (mixture)

CAS number
not relevant (mixture)

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

Relevant identified uses
Chemicals for various applications
For research use

1.3 Details of the supplier of the safety data sheet

Wako Chemicals GmbH
Fuggerstr. 12
41468 Neuss
Germany

Telephone: +49 (0) 2131 - 311-0
Telefax: +49(0)2131 - 311 100

e-mail (competent person)
sdb@csb-online.de

Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact Wako Chemicals GmbH.

1.4 Emergency telephone number

As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>2.16</td>
</tr>
<tr>
<td>3.2</td>
</tr>
<tr>
<td>3.3</td>
</tr>
</tbody>
</table>
Stop Solution (1 mol/L sulfuric acid)

for full text of abbreviations: see SECTION 16

Additional information
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word  warning

Pictograms

GHS05

Hazard statements
H290  May be corrosive to metals.
H315  Causes skin irritation.
H319  Causes serious eye irritation.

Precautionary statements
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P312  Call a POISON CENTER/doctor if you feel unwell.

Labelling of packages where the contents do not exceed 125 ml

Signal word  warning

Hazard pictogram(s)

Warning.  GHS05

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Stop Solution (1 mol/L sulfuric acid)

SECTION 3: Composition/information on ingredients

3.1 Substances
not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
</table>
| sulfuric acid           | CAS No 7664-93-9 | 5 - 10 | Met. Corr. 1 / H290  
                        | EC No 231-639-5  |     | Skin Corr. 1A / H314  
                        | Index No 016-020-00-8 |     | Eye Dam. 1 / H318  |

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact
Wash with plenty of soap and water.

Following eye contact
Rinse cautiously with water for several minutes.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.
Stop Solution (1 mol/L sulfuric acid)

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Hazardous decomposition products: Section 10.
Substance or mixture corrosive to metals.

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters
use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Remove persons to safety.
Ventilate affected area.
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.

For emergency responders
Wear breathing apparatus if exposed to vapours/dust/spray/gases.
Stop Solution (1 mol/L sulfuric acid)

6.2 Environmental precautions
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to clean up a spill
Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques
Neutralisation techniques.
Use of adsorbent materials.

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

6.4 Reference to other sections
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.

Specific notes/details
None.

Handling of incompatible substances or mixtures
Do not mix with alkali.

Keep away from
organic absorbing material, pulp/paper

Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.
7.2 Conditions for safe storage, including any incompatibilities

**Corrosive conditions**
Store in corrosive resistant container with a resistant inner liner.

**Flammability hazards**
None.

**Incompatible substances or mixtures**
Incompatible materials: see section 10. Observe hints for combined storage.

**Protect against external exposure, such as**
heat, frost

**Consideration of other advice**
Keep away from food, drink and animal feedingstuffs.

**Ventilation requirements**
Provision of sufficient ventilation.

**Packaging compatibilities**
Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)
No information available.

---

**SECTION 8: Exposure controls/personal protection**

8.1 Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>sulphuric acid 7664-93-9</td>
<td>t, mist</td>
<td>IOELV</td>
<td>0.05</td>
<td></td>
<td></td>
<td>2009/161/EU</td>
</tr>
<tr>
<td>GB</td>
<td>sulphuric acid 7664-93-9</td>
<td>t, mist</td>
<td>WEL</td>
<td>0.05</td>
<td></td>
<td></td>
<td>EH40/2005</td>
</tr>
</tbody>
</table>

**Notation**
- **mists**: as mists
- **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
- **t**: thoracic fraction
- **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 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>sulfuric acid</td>
<td>7664-93-9</td>
<td>DNEL</td>
<td>0.05 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
</tbody>
</table>

### Relevant PNECs 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>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>2 mg/cm³</td>
<td>soil</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>0.25 mg/cm³</td>
<td>marine water</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>2.5 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>8.8 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>0.003 mg/l</td>
<td>freshwater</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>0 mg/l</td>
<td>marine water</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>8.8 mg/l</td>
<td>sewage treatment plant (STP)</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>0.002 mg/kg</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>PNEC</td>
<td>0.002 mg/kg</td>
<td>marine sediment</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Appropriate engineering controls**
General ventilation.

**Individual protection measures (personal protective equipment)**

**Eye/face protection**
Wear eye/face protection.

**Hand protection**

**Material**
these information are not available
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

**Respiratory protection**
In case of inadequate ventilation wear respiratory protection.

**Environmental exposure controls**
Use appropriate container to avoid environmental contamination. 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
- **Form**: fluid
- **Colour**: colourless
- **Odour**: odourless
- **Odour threshold**: these information are not available

**Other safety parameters**
- **pH (value)**: ≤1, acid
- **Melting point/freezing point**: these information are not available
- **Initial boiling point and boiling range**: 100 °C
- **Flash point**: not applicable
- **Evaporation rate**: these information are not available
- **Flammability (solid, gas)**: not relevant (fluid)

**Explosive limits**
- **Lower explosion limit (LEL)**: these information are not available
- **Upper explosion limit (UEL)**: these information are not available
- **Vapour pressure**: these information are not available
- **Density**: 1.1 g/cm³
- **Vapour density**: these information are not available
- **Relative density**: these information are not available
Stop Solution (1 mol/L sulfuric acid)

**Solubility(ies)**

**Water solubility**  miscible in any proportion

**Partition coefficient**

n-octanol/water (log KOW)  these information are not available

Auto-ignition temperature  these information are not available

Relative self-ignition temperature for solids not relevant

(Fluid)

Decomposition temperature  these information are not available

**Viscosity**

**Kinematic viscosity**  these information are not available

**Dynamic viscosity**  these information are not available

**Explosive properties** not explosive

**Oxidising properties** shall not be classified as oxidising

9.2 **Other information**

None

**SECTION 10: Stability and reactivity**

10.1 **Reactivity**

Substance or mixture corrosive to metals.

10.2 **Chemical stability**

See below "Conditions to avoid".

10.3 **Possibility of hazardous reactions**

No known hazardous reactions.

10.4 **Conditions to avoid**

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

10.5 **Incompatible materials**

bases

Release of flammable materials with:

light metals (due to the release of hydrogen in an acid/alkaline medium)
10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
The mixture does not contain a substance with a skin corrosion/irritation above its concentration limit.

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>oral</td>
<td>LD50</td>
<td>1,540 - 2,990 mg/kg</td>
<td>rat</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes skin irritation.

Classification procedure
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 (CLP).

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitisation

Skin sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.
**Carcinogenicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Reproductive toxicity**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Specific target organ toxicity - single exposure**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**Specific target organ toxicity - repeated exposure**
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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

**SECTION 12: Ecological information**

12.1 **Toxicity**

**Aquatic toxicity (acute)**
Test data are not available for the complete mixture.

**Aquatic toxicity (acute) of components of the mixture**

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>EC50</td>
<td>&gt;100 mg/l</td>
<td>daphnia magna</td>
<td>48 h</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>ErC50</td>
<td>&gt;100 mg/l</td>
<td>algae (Desmodesmus subspicatus)</td>
<td>72 h</td>
</tr>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>LC50</td>
<td>16 - 28 mg/l</td>
<td>blue sunfish (Lepomis macrochirus)</td>
<td>96 h</td>
</tr>
</tbody>
</table>

**Aquatic toxicity (chronic)**
Test data are not available for the complete mixture.

12.2 **Persistence and degradability**

**Biodegradation**
The relevant substances of the mixture are readily biodegradable.
Persistence
Data are not available.

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
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects
Data are not available.

Endocrine disrupting potential
None of the ingredients are listed.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 1 (Slightly hazardous to water)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste.

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.
Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
2796

14.2 UN proper shipping name
SULPHURIC ACID

14.3 Transport hazard class(es)
Class 8

14.4 Packing group
II

14.5 Environmental hazards
non-environmentally hazardous acc. to the dangerous goods regulations
Stop Solution (1 mol/L sulfuric acid)

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 | 2796 |
| Proper shipping name | UN2796, SULPHURIC ACID, 8, II, (E) |
| Class | 8 |
| Classification code | C1 |
| Packing group | II |
| Danger label(s) | 8 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| Transport category (TC) | 2. |
| Tunnel restriction code (TRC) | E |
| Hazard identification No | 80 |
| Emergency Action Code | 2R |

International Maritime Dangerous Goods Code (IMDG)

| UN number | 2796 |
| Proper shipping name | UN2796, SULPHURIC ACID, 8, II |
| Class | 8 |
| Packing group | II |
| Danger label(s) | 8 |
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| EmS | F-A, S-B |
Stop Solution (1 mol/L sulfuric acid)

Stowage category: B
Segregation group: 1 - Acids

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

- **UN number**: 2796
- **Proper shipping name**: UN2796, Sulphuric acid, 8, II
- **Class**: 8
- **Packing group**: II
- **Danger label(s)**: 8

- **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**

- **Relevant provisions of the European Union (EU)**
- **Restrictions according to REACH, Annex XVII**
  - none of the ingredients are listed
- **List of substances subject to authorisation (REACH, Annex XIV)**
  - none of the ingredients are listed
- **Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II**
  - none of the ingredients are listed
- **Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)**
  - none of the ingredients are listed
- **Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)**
  - none of the ingredients are listed
STOP SOLUTION (1 mol/L SULFURIC ACID)

REGULATION 98/2013/EU ON THE MARKETING AND USE OF EXPLOSIVES PRECURSORS

EXPLOSIVES PRECURSORS WHICH ARE SUBJECT TO RESTRICTIONS

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Type of registration</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>Annex II</td>
<td></td>
</tr>
</tbody>
</table>

Legend

Annex II  Substances on their own or in mixtures or in substances for which suspicious transactions shall be reported

SECTION 16: OTHER INFORMATION

INDICATION OF CHANGES (REVISED SAFETY DATA SHEET)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>Precautionary statements: change in the listing (table)</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Signal word: warning</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Hazard pictogram(s): change in the listing (table)</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Hazard statements: change in the listing (table)</td>
<td></td>
</tr>
</tbody>
</table>

ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
</tbody>
</table>
# Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>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>
<tr>
<td>index No</td>
<td>The Index number is the identification code given to the substance in Part 3 of Annex VI to Regula-</td>
</tr>
<tr>
<td></td>
<td>tion (EC) No 1272/2008</td>
</tr>
<tr>
<td>IOELV</td>
<td>Indicative occupational exposure limit value</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>NLP</td>
<td>No-Longer Polymer</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>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula-</td>
</tr>
<tr>
<td></td>
<td>tions 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>STEL</td>
<td>Short-term exposure limit</td>
</tr>
</tbody>
</table>
Stop Solution (1 mol/L sulfuric acid)

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>Time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>WEL</td>
<td>Workplace exposure limit</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure
Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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>H290</td>
<td>May be corrosive to metals.</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>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

Responsible for the safety data sheet
C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld
Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-online.de
Website: www.csb-online.de
Stop Solution (1 mol/L sulfuric acid)

Disclaimer
This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.