acc. to 29 CFR 1910.1200 App D

# ORP standard, 468 mV

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# **SECTION 1: Identification**

#### 1.1 Product identifier

Trade name ORP standard, 468 mV

Product code(s) OR4468SS

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

Relevant identified uses laboratory and analytical use

# 1.3 Details of the supplier of the safety data sheet

AquaPhoenix Scientific, Inc 860 Gitts Run Road Hanover PA 17331 United States

Telephone: (717) 632-1291

e-mail: info@aquaphoenixsci.com

### 1.4 Emergency telephone number

Emergency information service ChemTel Inc. (800) 255-3924 (North America)

+1 (813) 248-0585 (International)

### **SECTION 2: Hazard(s) identification**

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

| Section | Hazard class                      | Category | Hazard class and cat-<br>egory | Hazard state-<br>ment |
|---------|-----------------------------------|----------|--------------------------------|-----------------------|
| A.2     | skin corrosion/irritation         | 2        | Skin Irrit. 2                  | H315                  |
| A.3     | serious eye damage/eye irritation | 1        | Eye Dam. 1                     | H318                  |
| A.6     | carcinogenicity                   | 1A       | Carc. 1A                       | H350                  |

For full text of abbreviations: see SECTION 16.

### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word danger

- Pictograms

GHS05, GHS08



- Hazard statements

H315 Causes skin irritation. H318 Causes serious eye damage.

H350 May cause cancer.

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#### - Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves.

P302+P352 If on skin: Wash with plenty of water.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).

P362 Take off contaminated clothing and wash before reuse.

P405 Store locked up.

P501 Dispose of contents/container to industrial combustion plant.

- Hazardous ingredients for labelling

sulfuric acid, ferric ammonium sulfate

#### 2.3 Other hazards

Hazards not otherwise classified

May be harmful if inhaled (GHS category 5: acutely toxic - inhalation).

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of  $\geq 0.1\%$ .

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq$  0.1%.

# **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

# Description of the mixture

| Name of substance        | Identifier           | Wt%   | Classification acc. to GHS                                                          | Pictograms |
|--------------------------|----------------------|-------|-------------------------------------------------------------------------------------|------------|
| deionized water          | CAS No<br>7732-18-5  | 85.26 | not classified                                                                      | none       |
| sulfuric acid            | CAS No<br>7664-93-9  | 6     | Acute Tox. 3 / H331<br>Skin Corr. 1A / H314<br>Eye Dam. 1 / H318<br>Carc. 1A / H350 |            |
| ferric ammonium sulfate  | CAS No<br>10138-04-2 | 4.822 | Eye Dam. 1 / H318                                                                   |            |
| ferrous ammonium sulfate | CAS No<br>7783-85-9  | 3.921 | Skin Irrit. 2 / H315<br>Eye Irrit. 2 / H319<br>STOT SE 3 / H335                     | <u>(1)</u> |

For full text of abbreviations: see SECTION 16.

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#### **SECTION 4: First-aid measures**

#### 4.1 Description of first-aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

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

#### Following skin contact

Wash with plenty of soap and water.

#### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

#### **SECTION 5: Fire-fighting measures**

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

#### 5.2 Special hazards arising from the substance or mixture

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate 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

Remove persons to safety.

### For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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#### 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

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

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

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

Control of the effects

Protect against external exposure, such as

frost

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

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

#### 8.1 **Control parameters**

Occupational exposure limit values (Workplace Exposure Limits)

| Coun-<br>try | Name of agent | CAS No    | Identi-<br>fier | TWA<br>[ppm] | TWA<br>[mg/m³] | STEL<br>[ppm] | STEL<br>[mg/m³] | Ceiling-C<br>[ppm] | Ceiling-C<br>[mg/m³] | Nota-<br>tion | Source                  |
|--------------|---------------|-----------|-----------------|--------------|----------------|---------------|-----------------|--------------------|----------------------|---------------|-------------------------|
| US           | sulfuric acid | 7664-93-9 | PEL (CA)        |              | 0.1            |               | 3               |                    |                      |               | Cal/<br>OSHA<br>PEL     |
| US           | sulfuric acid | 7664-93-9 | REL             |              | 1<br>(10 h)    |               |                 |                    |                      |               | NIOSH<br>REL            |
| US           | sulfuric acid | 7664-93-9 | PEL             |              | 1              |               |                 |                    |                      |               | 29 CFR<br>1910.100<br>0 |
| US           | sulfuric acid | 7664-93-9 | TLV®            |              | 0.2            |               |                 |                    |                      | t             | ACGIH®<br>2023          |

Notation

ceiling value is a limit value above which exposure should not occur

Ceiling-C 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 TWA thoracic fraction

time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-

weighted average (unless otherwise specified

# Relevant DNELs of components of the mixture

| Name of substance | CAS No    | Endpoint | Threshold<br>level     | Protection goal, route of exposure | Used in           | Exposure time           |
|-------------------|-----------|----------|------------------------|------------------------------------|-------------------|-------------------------|
| sulfuric acid     | 7664-93-9 | DNEL     | 0.05 mg/m <sup>3</sup> | human, inhalatory                  | worker (industry) | chronic - local effects |
| sulfuric acid     | 7664-93-9 | DNEL     | 0.1 mg/m <sup>3</sup>  | human, inhalatory                  | worker (industry) | acute - local effects   |

# Relevant PNECs of components of the mixture

| Name of substance | CAS No    | Endpoint | Threshold<br>level                  | Organism          | Environmental compartment       | Exposure time                     |
|-------------------|-----------|----------|-------------------------------------|-------------------|---------------------------------|-----------------------------------|
| sulfuric acid     | 7664-93-9 | PNEC     | 0.003 <sup>mg</sup> / <sub>l</sub>  | aquatic organisms | freshwater                      | short-term (single in-<br>stance) |
| sulfuric acid     | 7664-93-9 | PNEC     | 0 <sup>mg</sup> / <sub>l</sub>      | aquatic organisms | marine water                    | short-term (single in-<br>stance) |
| sulfuric acid     | 7664-93-9 | PNEC     | 8.8 <sup>mg</sup> / <sub>l</sub>    | aquatic organisms | sewage treatment<br>plant (STP) | short-term (single in-<br>stance) |
| sulfuric acid     | 7664-93-9 | PNEC     | 0.002 <sup>mg</sup> / <sub>kg</sub> | aquatic organisms | freshwater sediment             | short-term (single in-<br>stance) |
| sulfuric acid     | 7664-93-9 | PNEC     | 0.002 <sup>mg</sup> / <sub>kg</sub> | aquatic organisms | marine sediment                 | short-term (single in-<br>stance) |

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# 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

#### Eye/face protection

Wear eye/face protection.

### Skin protection

# - Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 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.

#### - Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

#### 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                |
|----------------|-----------------------|
| Color          | yellow                |
| Particle       | not relevant (liquid) |
| Odor           | characteristic        |

#### Other safety parameters

| pH (value)                              | not determined        |
|-----------------------------------------|-----------------------|
| Melting point/freezing point            | not determined        |
| Initial boiling point and boiling range | not determined        |
| Flash point                             | not determined        |
| Evaporation rate                        | not determined        |
| Flammability (solid, gas)               | not relevant, (fluid) |

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| Vapor pressure   | not determined                                |
|------------------|-----------------------------------------------|
| Density          | not determined                                |
| Vapor density    | this information is not available             |
| Relative density | information on this property is not available |

# Solubility(ies)

| - Water solubility | miscible in any proportion |
|--------------------|----------------------------|
|--------------------|----------------------------|

#### Partition coefficient

| - n-octanol/water (log KOW) | this information is not available |
|-----------------------------|-----------------------------------|
| Auto-ignition temperature   | not determined                    |
| Viscosity                   | not determined                    |
| Explosive properties        | none                              |
| Oxidizing properties        | none                              |

# 9.2 Other information

| Liquid content | 91.26 % |
|----------------|---------|
| Solid content  | 8.743 % |

# **SECTION 10: Stability and reactivity**

# 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

# 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

There is no additional information.

# 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.

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# **SECTION 11: Toxicological information**

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

#### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

#### Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful if inhaled.

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

| Name of substance | CAS No    | Exposure route        | ATE                                   |
|-------------------|-----------|-----------------------|---------------------------------------|
| sulfuric acid     | 7664-93-9 | inhalation: vapor     | 3 <sup>mg</sup> / <sub>l</sub> /4h    |
| sulfuric acid     | 7664-93-9 | inhalation: dust/mist | 0.85 <sup>mg</sup> / <sub>l</sub> /4h |

#### Skin corrosion/irritation

Causes skin irritation.

# Serious eye damage/eye irritation

Causes serious eye damage.

#### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

May cause cancer.

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

| Name of substance | CAS No    | Classification | Number |
|-------------------|-----------|----------------|--------|
| sulfuric acid     | 7664-93-9 | 1              |        |

# Legend

Carcinogenic to humans

# National Toxicology Program (United States): Report on Carcinogens

| Name of substance | CAS No    | Classification                 | Number                    |
|-------------------|-----------|--------------------------------|---------------------------|
| sulfuric acid     | 7664-93-9 | Known to be a human carcinogen | 9th Report on Carcinogens |

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

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Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

# **SECTION 12: Ecological information**

# 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

### 12.2 Persistence and degradability

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. Does not contain a PBT-/vPvB-substance in a concentration of  $\geq 0.1\%$ .

#### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq$  0.1%.

#### 12.7 Other adverse effects

Data are not available.

### **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### **Remarks**

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

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# **SECTION 14: Transport information**

#### 14.1 UN number

DOT UN 2796
IMDG-Code UN 2796
ICAO-TI UN 2796

# 14.2 UN proper shipping name

DOT Sulphuric acid

IMDG-Code SULPHURIC ACID

ICAO-TI Sulphuric acid

#### 14.3 Transport hazard class(es)

DOT 8
IMDG-Code 8
ICAO-TI 8

### 14.4 Packing group

DOT II IMDG-Code II ICAO-TI II

### 14.5 Environmental hazards

Environmentally hazardous substance (aquatic sulfuric acid environment)

### 14.6 Special precautions for user

There is no additional information.

#### 14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

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

# Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Particulars in the shipper's declaration UN2796, Sulphuric acid, 8, II, environmentally haz-

ardous

hazardous to the aquatic environment

Reportable quantity (RQ) 16,667 lbs (7,567 kg) (sulfuric acid)

Danger label(s) 8, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 386, A3, A7, B2, B15, IB2, N6, N34, T8, TP2

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# International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant YeS (hazardous to the aquatic environment)

Danger label(s) 8, fish and tree



Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L
EmS F-A, S-B

Stowage category B

Segregation group 1 - Acids

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards yes (hazardous to the aquatic environment)

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 specific for the product in question National regulations (United States)

#### Superfund Amendment and Reauthorization Act (SARA TITLE III )

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

| Name of substance | CAS No    | Notes | Reportable quant-<br>ity (pounds) | Threshold plan-<br>ning quantity<br>(pounds) |
|-------------------|-----------|-------|-----------------------------------|----------------------------------------------|
| sulfuric acid     | 7664-93-9 |       | 1,000                             | 1000                                         |

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

| Name of substance | CAS No    | Remarks                                                                                                | Effective date |
|-------------------|-----------|--------------------------------------------------------------------------------------------------------|----------------|
| sulfuric acid     | 7664-93-9 | acid aerosols including mists, va-<br>pors, gas, fog, and other airborne<br>forms of any particle size | 1986-12-31     |

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# Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

| Name of substance | CAS No    | Remarks | Statutory code | Final RQ pounds (Kg) |
|-------------------|-----------|---------|----------------|----------------------|
| sulfuric acid     | 7664-93-9 |         | 1              | 1000 (454)           |

#### Legend

"1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

#### **Clean Air Act**

none of the ingredients are listed

### **Right to Know Hazardous Substance List**

- Hazardous Substance List (NJ-RTK)

| Name of substance | CAS No    | Remarks | Classifications |
|-------------------|-----------|---------|-----------------|
| sulfuric acid     | 7664-93-9 |         | CA<br>CO<br>R2  |

#### Legend

CA Carcinogenic CO Corrosive

R2 Reactive - Second Degree

# California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

### Industry or sector specific available guidance(s)

#### **NPCA-HMIS® III**

Hazardous Materials Identification System. American Coatings Association.

| Category            | Rating | Description                                                                                                                                                |
|---------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chronic             | *      | chronic (long-term) health effects may result from repeated overexposure                                                                                   |
| Health              | 3      | major injury likely unless prompt action is taken and medical treatment is given                                                                           |
| Flammability        | 0      | material that will not burn under typical fire conditions                                                                                                  |
| Physical hazard     | 0      | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | -      |                                                                                                                                                            |

# **NFPA® 704**

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

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| Category       | Degree of<br>hazard | Description                                                                      |
|----------------|---------------------|----------------------------------------------------------------------------------|
| Flammability   | 0                   | material that will not burn under typical fire conditions                        |
| Health         | 3                   | material that, under emergency conditions, can cause serious or permanent injury |
| Instability    | 0                   | material that is normally stable, even under fire conditions                     |
| Special hazard |                     |                                                                                  |

#### **National inventories**

| Country | Inventory  | Status                         |
|---------|------------|--------------------------------|
| AU      | AIIC       | all ingredients are listed     |
| CA      | DSL        | not all ingredients are listed |
| CN      | IECSC      | all ingredients are listed     |
| EU      | ECSI       | not all ingredients are listed |
| EU      | REACH Reg. | not all ingredients are listed |
| JP      | CSCL-ENCS  | not all ingredients are listed |
| KR      | KECI       | not all ingredients are listed |
| MX      | INSQ       | not all ingredients are listed |
| NZ      | NZIoC      | not all ingredients are listed |
| PH      | PICCS      | all ingredients are listed     |
| TR      | CICR       | not all ingredients are listed |
| TW      | TCSI       | all ingredients are listed     |
| US      | TSCA       | not all ingredients are listed |

Legend

Australian Inventory of Industrial Chemicals Chemical Inventory and Control Regulation

List of Existing and New Chemical Substances (CSCL-ENCS)

Domestic Substances List (DSL)

Legend
AIIC
CICR
CSCL-ENCS
DSL
ECSI
IECSC
INSQ
KECI
NZIOC
PICCS Inventory of Existing Chemical Substances Produced or Imported in China National Inventory of Chemical Substances

Korea Existing Chemicals Inventory

Korea Existing Chemicals Inventory

New Zealand Inventory of Chemicals
Philippine Inventory of Chemicals and Chemical Substances (PICCS) **PICCS** 

REACH Reg. REACH registered substances

TCSI Taiwan Chemical Substance Inventory TSCA Toxic Substance Control Act

#### **Chemical Safety Assessment**

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

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# SECTION 16: Other information, including date of preparation or last revision

# **Abbreviations and acronyms**

| Abbieviacions    | and acronyms                                                                                                                                                                                                                                  |  |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Abbr.            | Descriptions of used abbreviations                                                                                                                                                                                                            |  |
| 29 CFR 1910.1000 | 29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)                                                                                               |  |
| 49 CFR US DOT    | 49 CFR U.S. Department of Transportation                                                                                                                                                                                                      |  |
| ACGIH® 2023      | From ACGIH®, 2023 TLVs® and BEIs® Book. Copyright 2023. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement |  |
| Acute Tox.       | Acute toxicity                                                                                                                                                                                                                                |  |
| ATE              | Acute Toxicity Estimate                                                                                                                                                                                                                       |  |
| Cal/OSHA PEL     | California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)                                                                                                                                          |  |
| Carc.            | Carcinogenicity                                                                                                                                                                                                                               |  |
| CAS              | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)                                                                                                                                        |  |
| Ceiling-C        | Ceiling value                                                                                                                                                                                                                                 |  |
| DGR              | Dangerous Goods Regulations (see IATA/DGR)                                                                                                                                                                                                    |  |
| DNEL             | Derived No-Effect Level                                                                                                                                                                                                                       |  |
| DOT              | Department of Transportation (USA)                                                                                                                                                                                                            |  |
| EINECS           | European Inventory of Existing Commercial Chemical Substances                                                                                                                                                                                 |  |
| ELINCS           | European List of Notified Chemical Substances                                                                                                                                                                                                 |  |
| EmS              | Emergency Schedule                                                                                                                                                                                                                            |  |
| ERG No           | Emergency Response Guidebook - Number                                                                                                                                                                                                         |  |
| Eye Dam.         | Seriously damaging to the eye                                                                                                                                                                                                                 |  |
| Eye Irrit.       | Irritant to the eye                                                                                                                                                                                                                           |  |
| GHS              | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations                                                                                                                                     |  |
| IARC             | International Agency for Research on Cancer                                                                                                                                                                                                   |  |
| IATA             | International Air Transport Association                                                                                                                                                                                                       |  |
| IATA/DGR         | Dangerous Goods Regulations (DGR) for the air transport (IATA)                                                                                                                                                                                |  |
| ICAO             | International Civil Aviation Organization                                                                                                                                                                                                     |  |
| ICAO-TI          | Technical instructions for the safe transport of dangerous goods by air                                                                                                                                                                       |  |
| IMDG             | International Maritime Dangerous Goods Code                                                                                                                                                                                                   |  |
| IMDG-Code        | International Maritime Dangerous Goods Code                                                                                                                                                                                                   |  |
| NIOSH REL        | National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)                                                                                                                                             |  |
| NLP              | No-Longer Polymer                                                                                                                                                                                                                             |  |
| NPCA-HMIS® III   | National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition                                                                                                                                 |  |

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acc. to 29 CFR 1910.1200 App D

# ORP standard, 468 mV

Version number: 1.0 Date of compilation: 2023-04-25

| Abbr.       | Descriptions of used abbreviations                            |
|-------------|---------------------------------------------------------------|
| OSHA        | Occupational Safety and Health Administration (United States) |
| PBT         | Persistent, Bioaccumulative and Toxic                         |
| PEL         | Permissible exposure limit                                    |
| PNEC        | Predicted No-Effect Concentration                             |
| ppm         | Parts per million                                             |
| Skin Corr.  | Corrosive to skin                                             |
| Skin Irrit. | Irritant to skin                                              |
| STEL        | Short-term exposure limit                                     |
| STOT SE     | Specific target organ toxicity - single exposure              |
| TLV®        | Threshold Limit Values                                        |
| TWA         | Time-weighted average                                         |
| vPvB        | Very Persistent and very Bioaccumulative                      |

# Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

#### Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

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 section 2 and 3)

| Code | Text                                     |
|------|------------------------------------------|
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation.                  |
| H318 | Causes serious eye damage.               |
| H319 | Causes serious eye irritation.           |
| H331 | Toxic if inhaled.                        |
| H335 | May cause respiratory irritation.        |
| H350 | May cause cancer.                        |

#### **Disclaimer**

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

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