

## MI524-0 - Total Chlorine Reagent

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## **Safety Data Sheet**

According to Annex II to REACH - Regulation 2015/830

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

#### 1.1. Product identifier

Code MI524-0

Product name **Total Chlorine Reagent** 

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

**Determination of Total Chlorine in Water Samples.** 

1.3. Details of the supplier of the safety data sheet

Milwaukee Electronics Kft. Name Full address Alsókikötő sor 11. **District and Country** H6726 Szeged Hungary

> Tel. +36-62-428-050 Fax +36-62-428-051

e-mail address of the competent person responsible for the Safety Data Sheet

info@milwaukeeinst.com

1.4. Emergency telephone number

For urgent inquiries refer to Austria tel.: +431 406 43 43 - Belgium tel.: 070/245.245 - Bulgaria tel.: +359 2

9154409 - Czech Republic tel.: +420 224 919 293, +420 224 915 402 - Denmark tel.: 8212 12 12 - Estonia tel.: 112 - Finland tel.: (09) 471 977 (direct) or (09) 4711 (exchange) - France tel. ORFILA (INRS) : + 33 (0)1 45 42 59 59 - Ireland tel.: 01 8092166 - Lithuania tel.: +370 5 236 20 52, +370 687 53378 - Malta tel: 2545 0000, Medicines & Poisons Info Office tel.: 2545 6504 - Norway tel.: 22 59 13 00 -Portugal tel.: 808 250 143 - Romania tel. 021.318.36.06 (8:00 - 15:00) - Slovakia tel.:

+421 2 5477 4166 - Spain tel.: + 34 91 562 04 20 - Sweden tel.: 112; 08-331231

(9:00-17:00)

## **SECTION 2. Hazards identification**

#### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

H332 Acute toxicity, category 4 Harmful if inhaled

Specific target organ toxicity - repeated exposure, H372 Causes damage to organs through prolonged or repeated category 1

exposure.

## 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:





Signal words: Danger

Hazard statements:



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## SECTION 2. Hazards identification .../>>

H332 Harmful if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary statements:

P260 Do not breathe dust, fume, gas, mist, vapours, spray. Call a POISON CENTRE or doctor, if you feel unwell. P312

Contains: POTASSIUM IODIDE

#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0.1%.

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

#### 3.2. Mixtures

Contains:

Identification x = Conc. % Classification 1272/2008 (CLP)

POTASSIUM IODIDE

CAS 7681-11-0  $10 \le x < 30$ **STOT RE 1 H372** 

EC 231-659-4

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Reg. no. 01-2119906339-35

**EDTA DISODIUM SALT** 

6381-92-6 Acute Tox. 4 H332, STOT RE 2 H373 CAS  $1 \le x < 5$ 

EC 205-358-3

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01-2119486775-20 Reg. no.

N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

CAS 6283-63-2 Acute Tox. 4 H302 1 ≤ x < 5

EC 228-500-6

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The full wording of hazard (H) phrases is given in section 16 of the sheet.

### SECTION 4. First aid measures

## 4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

## N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Irritant effects. The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

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

Information not available



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## **SECTION 5. Firefighting measures**

## 5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

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

## HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

#### POTASSIUM IODIDE

Hydrogen iodide, Potassium oxides.

#### **EDTA DISODIUM SALT**

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Fire may cause evolution of: nitrogen oxides.

## N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Fire may cause evolution of: nitrous gases, nitrogen oxides, Sulphur oxides.

#### 5.3. Advice for firefighters

#### **GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## **SECTION 6. Accidental release measures**

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

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear 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. These indications apply for both processing staff and those involved in emergency procedures.

## 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

## 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

#### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## **SECTION 7. Handling and storage**

## 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering



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## SECTION 7. Handling and storage .../>>

places in which people eat.

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

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 6.10

#### 7.3. Specific end use(s)

Information not available

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

#### 8.1. Control parameters

Regulatory References:

BGR България МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА

ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г (4 Септември 2018г)

TLV-ACGIH ACGIH 2020

|                     |  |              |        | POTASS     | SIUM IODIDE |         |                |         |          |
|---------------------|--|--------------|--------|------------|-------------|---------|----------------|---------|----------|
| Threshold Limit V   | 'alue  |              |        |            |             |         |                |         |          |
| Туре                | Country TWA/8h                               |              |        | STEL/15min |             | Remarks | / Observations |         |          |
|                     |  | mg/m3        | ppm    | mg/m3      | ppm         |         |                |         |          |
| TLV                 | BGR  | 5            |        |            |             |         |                |         |          |
| TLV-ACGIH           |  |              | 0,01   |            |             |         |                |         |          |
| Predicted no-effect | ct concentra                                 | tion - PNE   | C      |            |             |         |                |         |          |
| Normal value in     |  |              |        |            | 0,007       | mg/l    |                |         |          |
| Normal value fo     |  |              |        |            | 0,007       | mg/kg   |                |         |          |
| Normal value fo     | Normal value for water, intermittent release |              |        |            |             |         | 0,075          | mg/l    |          |
| Health - Derived n  | o-effect leve                                | el - DNEL /  | DMEL   |            |             |         |                |         |          |
|                     | Effe   | cts on consi | umers  |            |             |         | workers        |         |          |
| Route of exposi     | ure Acut                                     | te Ac        | ute    | Chronic    | Chronic     | Acute   | Acute          | Chronic | Chronic  |
|                     | loca   | l sys        | stemic | local      | systemic    | local   | systemic       | local   | systemic |
| Oral                |  |              |        | VND        | 0,01        |         |                |         |          |
|                     |  |              |        |            | mg/kg bw/d  |         |                |         |          |
| Inhalation          |  |              |        | VND        | 0,035       |         |                | VND     | 0,07     |
|                     |  |              |        |            | mg/m3       |         |                |         | mg/m3    |
| Skin                |  |              |        | VND        | 1           |         |                | VND     | 1        |
|                     |  |              |        |            | mg/kg bw/d  |         |                |         | mg/kg    |
|                     |  |              |        |            |             |         |                |         | bw/d     |

|                          |                      |            | EDTA DI | SODIUM SALT | Γ                  |          |         |          |  |
|--------------------------|----------------------|------------|---------|-------------|--------------------|----------|---------|----------|--|
| Predicted no-effect con  | centration -         | PNEC       |         |             |                    |          |         |          |  |
| Normal value in fresh    |                      |            |         | 2,2         | mg/l               |          |         |          |  |
| Normal value in marin    |                      |            |         | 0,22        | mg/l               |          |         |          |  |
| Normal value of STP      |                      |            |         | 43          | mg/l               |          |         |          |  |
| Normal value for the t   |                      |            |         | 0,72        | mg/kg/d            |          |         |          |  |
| Health - Derived no-effe | ct level - DN        | IEL / DMEL |         |             |                    |          |         |          |  |
|                          | Effects on consumers |            |         |             | Effects on workers |          |         |          |  |
| Route of exposure        | Acute                | Acute      | Chronic | Chronic     | Acute              | Acute    | Chronic | Chronic  |  |
|                          | local                | systemic   | local   | systemic    | local              | systemic | local   | systemic |  |
| Oral                     | VND                  | 25         |         |             |                    |          |         |          |  |
|                          |                      | mg/kg/d    |         |             |                    |          |         |          |  |
| Inhalation               | 1,2                  | VND        | 0,6     | VND         | 3                  | VND      | 1,5     | VND      |  |
|                          | mg/m3                |            | mg/m3   |             | mg/m3              |          | mg/m3   |          |  |

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction. VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.



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

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374). Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

#### **ENVIRONMENTAL EXPOSURE CONTROLS**

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## **SECTION 9. Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

**Properties** Value Appearance powder Colour ivory Odour odourless Not available Odour threshold рΗ 5.8 - 6.2 pH, 15 q/L Melting point / freezing point Not available Initial boiling point Not applicable Boiling range Not available Flash point Not applicable Evaporation rate Not available Flammability (solid, gas) not flammable Lower inflammability limit Not available Upper inflammability limit Not available Lower explosive limit Not available Upper explosive limit Not available Vapour pressure Not available Vapour density Not available

soluble in water Solubility Partition coefficient: n-octanol/water Not available Auto-ignition temperature Not available Decomposition temperature Not available Not available Viscosity Explosive properties not applicable not applicable Oxidising properties

## 9.2. Other information

Relative density

Total solids (250°C / 482°F) 98.00 %

## **SECTION 10. Stability and reactivity**

## 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

Information



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## SECTION 10. Stability and reactivity .../>>

## 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

#### POTASSIUM IODIDE

May decompose on exposure to air and moisture. Stable under recommended storage conditions.

#### N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Sensitive to moisture. Sensitivity to light.

### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

#### **EDTA DISODIUM SALT**

Violent reactions possible with: Strong oxidizing agents.

#### N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Violent reactions possible with: Strong oxidizing agents.

#### 10.4. Conditions to avoid

Avoid environmental dust build-up.

#### POTASSIUM IODIDE

Tin/tin oxides.

#### **EDTA DISODIUM SALT**

Strong heating.

## N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Strong heating (decomposition).

## 10.5. Incompatible materials

#### POTASSIUM IODIDE

Strong reducing agents, Nickel, Strong acids, and its alloys, Steel (all types and surface treatments), Aluminum, Alkali metals, Brass, Magnesium, Zinc, cadmium, Copper.

### EDTA DISODIUM SALT

Aluminium, Copper, Copper alloys, Nickel, Zinc.

## 10.6. Hazardous decomposition products

Information not available

## **SECTION 11. Toxicological information**

## 11.1. Information on toxicological effects

### EDTA DISODIUM SALT

Skin irritation, Rabbit, Result: No irritation, (anhydrous substance) - Eye irritation, Rabbit, Result: No eye irritation, (anhydrous substance) - Sensitisation, Sensitisation possible in predisposed persons - Germ cell mutagenicity Genotoxicity in vitro, Ames test, Salmonella typhimurium, Result: negative (anhydrous substance), Mouse lymphoma test, Result: negative, (anhydrous substance) - Specific target organ toxicity, repeated exposure, Target Organs: Respiratory Tract, May cause amage to organs through prolonged or repeated exposure - Repeated dose toxicity, Rat male, Inhalation aerosol, 5 d daily, LOAEL: 0,03 mg/l, Target Organs: Lungs, larynx - Repeated dose toxicity, Rat male and female, Inhalation dust/mist, 90 d daily, NOAEL: 0,003 mg/l, Target Organs: larynx.

## N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Acute inhalation toxicity, Symptoms: Irritation symptoms in the respiratory tract - Skin irritation, slight irritation - Sensitisation, Sensitisation possible in predisposed persons.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available



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## **SECTION 11. Toxicological information** .../>>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture: > 5 mg/l
ATE (Oral) of the mixture: >2000 mg/kg

ATE (Dermal) of the mixture: Not classified (no significant component)

**EDTA DISODIUM SALT** 

LD50 (Oral) > 2800 mg/kg Rat

N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

LD50 (Oral) > 497 mg/kg Rat

POTASSIUM IODIDE

LD50 (Oral) 1000 mg/kg Mouse

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Causes damage to organs

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## **SECTION 12. Ecological information**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity



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## SECTION 12. Ecological information .../>>

POTASSIUM IODIDE

Toxicity to daphnia and other aquatic invertebrates, EC50, Daphnia: 2,7 mg/l - 24 h.

**FDTA DISODIUM SALT** 

Toxicity to bacteria, EC50 activated sludge: 403 mg/l, 3 h, - EC50 Pseudomonas putida: 56 mg/l, 8 h (anhydrous substance).

EDTA DISODIUM SALT

320 mg/l/96h Poecilia Reticulata LC50 - for Fish

POTASSIUM IODIDE

2190 mg/l/96h Oncorhynchus mykiss LC50 - for Fish

#### 12.2. Persistence and degradability

**EDTA DISODIUM SALT** 

100 mg/l 20°C Solubility in water

POTASSIUM IODIDE

Solubility in water > 10000 mg/l

Rapidly degradable

#### 12.3. Bioaccumulative potential

N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Partition coefficient: n-octanol/water, log Pow: 2.24 (calculated), (Lit.) Bioaccumulation is not expected.

POTASSIUM IODIDE

Partition coefficient: n-octanol/water -0,958 BCF 2.268

## 12.4. Mobility in soil

Information not available

#### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

#### 12.6 Other adverse effects

**EDTA DISODIUM SALT** 

Discharge into the environment must be avoided.

N,N-DIETHYL-1,4-PHENYLENEDIAMMONIUM SULFATE

Discharge into the environment must be avoided.

## **SECTION 13. Disposal considerations**

## 13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## **SECTION 14. Transport information**

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

### 14.1. UN number

Not applicable



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**SECTION 14. Transport information** .../>>

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

## **SECTION 15. Regulatory information**

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

Seveso Category - Directive 2012/18/EC:

None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 3: Severe hazard to waters

## 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

## **SECTION 16. Other information**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Acute Tox. 4 Acute toxicity, category 4

STOT RE 1 Specific target organ toxicity - repeated exposure, category 1
STOT RE 2 Specific target organ toxicity - repeated exposure, category 2

H302 Harmful if swallowed.
H332 Harmful if inhaled.



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#### SECTION 16. Other information .../>>

H372 H373

Causes damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure.

#### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

#### GENERAL BIBLIOGRAPHY

- 1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
- 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
- 3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
- 4. Regulation (EU) 2015/830 of the European Parliament
- 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
- 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
- 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
- 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
- 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
- 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
- 11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
- 12. Regulation (EU) 2016/1179 (IX Atp. CLP)
- 13. Regulation (EU) 2017/776 (X Atp. CLP)
- 14. Regulation (EU) 2018/669 (XI Atp. CLP)
- 15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
- 16. Regulation (EU) 2019/521 (XII Atp. CLP)
- 17. Regulation (EU) 2019/1148
- 18. Regulation (EU) 2020/217 (XIV Atp. CLP)
- The Merck Index. 10th Edition
- Handling Chemical Safety
- INRS Fiche Toxicologique (toxicological sheet)
- Patty Industrial Hygiene and Toxicology
- N.I. Sax Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals Ministry of Health and ISS (Istituto Superiore di Sanità) Italy

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.



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## SECTION 16. Other information .../>>

This document must not be regarded as a guarantee on any specific product property. The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

#### CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review: The following sections were modified: 08.