

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

Printing date 22.04.2024

Version number 59 (replaces version 58)

Revision: 22.04.2024

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

· **1.1 Product identifier**

· **Product name: Phosphate HR**

· **Catalog number:** 00511981, 511980BT, 501980, 00511989BT, 00501980, 00511980BT

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

· **Application of the substance / the preparation:** Reagent for water analysis

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

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Repr. 1B H360FD May damage fertility. May damage the unborn child.



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

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Hazard pictograms

GHS05 GHS07 GHS08

Signal word Danger**Hazard-determining components of labelling:**

dipotassium disulfate
boric acid
sodium bisulfate

Hazard statements

H332 Harmful if inhaled.
H314 Causes severe skin burns and eye damage.
H360FD May damage fertility. May damage the unborn child.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection.
P201 Obtain special instructions before use.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.

Additional information:

Restricted to professional users.

2.3 Other hazards No further relevant information available.**Results of PBT and vPvB assessment**

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

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of inorganic compounds.

Dangerous components:

CAS: 10043-35-3 EINECS: 233-139-2 Index No: 005-007-00-2 Reg.nr.: 01-2119486683-25-XXXX	boric acid ⚠ Repr. 1B, H360FD	40–50%
CAS: 7790-62-7 EINECS: 232-216-8	dipotassium disulfate ⚠ Acute Tox. 3, H331; ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318 ATE: LD50 oral: 2500 mg/kg LC50/4h inhalative: 0.5 mg/l	30–40%
CAS: 7681-38-1 EINECS: 231-665-7 Index No: 016-046-00-X Reg.nr.: 01-2119552465-36-XXXX	sodium bisulfate ⚠ Eye Dam. 1, H318	5–10%
CAS: 7803-55-6 EINECS: 232-261-3	ammonium meta-vanadate ⚠ Acute Tox. 3, H301; ⚠ Repr. 2, H361fd; STOT RE 1, H372; ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H332; Eye Irrit. 2, H319	0.25–<1%

SVHC

CAS: 10043-35-3 | boric acid

SVHC (UK)

CAS: 10043-35-3 | boric acid

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

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
 - **General information** Instantly remove any clothing soiled by the product.
 - **After inhalation**
Supply fresh air.
Get medical advice/attention.
 - **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
Seek medical treatment.
 - **After eye contact** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; instantly call for medical help.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
burns
absorption
after inhalation:
mucosal irritations, cough, shortness of breath
after swallowing:
sickness
vomiting
diarrhoea
strong caustic effect.
after absorption of large amounts:
CNS disorders
ataxia (impaired locomotor coordination)
drop in temperature
cardiovascular disorders
fatigue
 - **Danger** Danger of pulmonary oedema.
 - **4.3 Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs
Subsequent observation for pneumonia and pulmonary oedema
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Sulphur oxides (SO_x)
Nitrogen oxides (NO_x)
smoke of metal oxide
Sodium oxide
Dipotassium oxide
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.

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Ensure adequate ventilation

Use breathing protection against the effects of fumes/dust/aerosol.

· **Advice for emergency responders:** Protective equipment: see section 8· **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.· **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Collect mechanically.

Dispose of contaminated material as waste according to item 13.

· **6.4 Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**· **Advice on safe handling:** Provide suction extractors if dust is formed.· **Hygiene measures:**

Do not inhale dust / smoke / mist.

Do not get in eyes, on skin, or on clothing.

Take off immediately all contaminated clothing.

Store protective clothing separately.

Wash hands during breaks and at the end of the work.

Do not eat, drink or smoke when using this product.

· **7.2 Conditions for safe storage, including any incompatibilities**· **Requirements to be met by storerooms and containers:** Store in cool location.· **Information about storage in one common storage facility:** see chapter 10· **Further information about storage conditions:**

Store in a locked cabinet or with access restricted to technical experts or their assistants.

Protect from heat and direct sunlight.

Store in cool, dry conditions in well sealed containers.

Protect from the effects of light.

Protect from humidity and keep away from water.

This product is hygroscopic.

· **Recommended storage temperature:** 20°C +/- 5°C· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**· **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **DNELs**

Derived No Effect Level (DNEL)

CAS: 10043-35-3 boric acid

Oral	DNEL	0.98 mg/kg (Consumer / acute / systemic effects)
		0.98 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	392 mg/kg (Worker / long-term /systemic effects)
		196 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	8.3 mg/m ³ (Worker / long-term /systemic effects)
		4.15 mg/m ³ (Consumer / long-term / systemic effects)

· **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **PNECs**

Predicted No Effect Concentration (PNEC)

CAS: 10043-35-3 boric acid

PNEC	10 mg/l (Sewage treatment plant)
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	2.02 mg/l (Marine water)
	13.7 mg/l (Aquatic intermittent release)
	2.02 mg/l (Fresh water)
PNEC	5.4 mg/kg (Soil)

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Individual protection measures, such as personal protective equipment**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Eye/face protection**
Tightly sealed safety glasses.
Use safety glasses that have been tested and approved in accordance with government standards such as EN 166.
- **Hand protection**
Acid resistant gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
Value for the permeation: Level = 1 (< 10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Other skin protection (body protection):** Acid resistant protective clothing
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P3
- **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

* SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Physical state** Solid.
- **Form:** Tablets
- **Colour:** Orange
- **Odour:** Odourless
- **Odour threshold:** Not applicable.
- **Melting point/Freezing point:** Not determined.
- **Boiling point or initial boiling point and boiling range** Not determined.
- **Flammability** The product is not combustible.
- **Explosive properties:** Product is not explosive.
- **Lower and upper explosion limit**
 - Lower: Not applicable.
 - Upper: Not applicable.
- **Flash point:** Not applicable.
- **Auto-ignition temperature:** Not applicable.
- **Decomposition temperature:** Not determined.
- **pH** Not determined.
- **Kinematic viscosity** Not applicable (solid).
- **Solubility**
- **Water:** Soluble
- **Partition coefficient n-octanol/water (log value)** Not applicable (mixture).
- **Vapour pressure:** Not applicable (solid).
- **Density and/or relative density**
- **Density:** Not determined.
- **Relative density:** Not determined.
- **Relative gas density** Not applicable (solid).
- **Particle characteristics** Not determined.

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· 9.2 Other information

· Information with regard to physical hazard classes	
· Corrosive to metals	Void
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	100 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 Aqueous solution reacts acidic.
 Forms hydrogen in aqueous solution with metals
 Aqueous solution reacts with metals.
 Reacts with alkali (lyes)
 Reacts with strong oxidizing agents
 Liberates acid in contact with water or alcohol.
 Reacts with strong alkalis and oxidizing agents.
- **10.4 Conditions to avoid** Heating (decomposition)
- **10.5 Incompatible materials:** metals
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
 Classification according to calculation procedure:
 Harmful if inhaled.

· Acute toxicity estimate (ATE_(MIX)) - Calculation method:

Inhalative	CLP ATE _(MIX)	1.3 mg/l/4h (dust)
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· LD/LC50 values that are relevant for classification:**CAS: 10043-35-3 boric acid**

Oral	LD50	2660 mg/kg (rat) (OECD 401) (GESTIS, ECHA registrant)
Dermal	LD50.	>2000 mg/kg (rat) (ECHA, registrant: no deaths occurred.)
	LD ₀	1500 mg/kg (child) (MERCK)
	NOAEL	9.6 mg/kg (rat) (NTP)

CAS: 7790-62-7 dipotassium disulfate

Oral	LD50	2500 mg/kg (ATE) (Read across 7664-93-9: LD ₅₀ (rat) = 2140 mg/kg, ECHA)
Inhalative	LC50/4h	0.5 mg/l (ATE) (Aerosol) (Read across 7664-93-9: LD ₅₀ (rat, 4h) = ~ 850 mg/m ³ , ECHA)

CAS: 7681-38-1 sodium bisulfate

Oral	LD50	2490 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rabbit)

CAS: 7803-55-6 ammonium meta-vanadate

Oral	LD50	169 mg/kg (rat) (OECD 401) (Merck)
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Dermal	LD50.	>2500 mg/kg (rat) (OECD402) (Registrant, ECHA: limit-test, all test animals survived at this concentration)
Inhalative	LC50/4h	2.51 mg/l (rat) (OECD 403) (Merck)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
Risk of blindness!

· Information on components:		
CAS: 10043-35-3 boric acid		
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)
Irritation of eyes	OECD 492	(rabbit: slight irritation) (IUCLID)
CAS: 7681-38-1 sodium bisulfate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 492	(rabbit: severe irritations)
CAS: 7803-55-6 ammonium meta-vanadate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: irritation)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 10043-35-3 boric acid		
Sensitisation	OECD 406	(guinea pig: negative)

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** May damage fertility. May damage the unborn child.

· Information on components:		
CAS: 10043-35-3 boric acid		
OECD 471	(negative)	(Bacterial Reverse Mutation Test - Ames test)
OECD 476	(negative)	(In Vitro Mammalian Cell Gene Mutation Test) (mouse lymphoma test)
OECD 414	(negative)	(oral, rat) (ECHA, registrant: no evidence of developmental toxicity up to 55 mg/kg bw. At 76 mg/kg bw there was reduced fetal bodyweight, short and wavy ribs, and these effects disappeared during the postnatal period.)
OECD 474	(negative)	(in vivo, mice)
CAS: 7803-55-6 ammonium meta-vanadate		
OECD 471	(negative)	(Bacterial Reverse Mutation Test - Ames test)

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

· Information on likely routes of exposure

"Under occupational conditions, the main intake pathway for boric acid (CAS 10043-35-3) proceeds via the respiratory tract. Furthermore, the uptake of the solid or its concentrated solutions should be expected following contact with damaged or inflamed skin." (GESTIS)

· Additional toxicological information:

In case of an acute molybdenum(VI) intoxication: diarrhoea, anaemia, fatigue, loss of appetite. Toxic effect on liver and kidneys after high doses.
CAS 10043-35-3: Absorption through gastro-intestinal tract, mucous membranes
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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CAS: 10043-35-3 boric acid

(source: GESTIS)

Main toxic effects:

Acute: Slightly irritating to the eyes and skin; gastrointestinal disturbances, CNS-effects and (later) skin damage after massive poisoning

Chronic: Irritation to the mucous membranes following inhalative exposure, effects to the gastrointestinal tract and CNS

Further Information (Merck):

"Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes.

Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma.

Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams."

"Liver - Irregularities - Based on Human Evidence"

· **11.2 Information on other hazards**· **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.· **Other information**

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information· **12.1 Toxicity**· **Aquatic toxicity:****CAS: 10043-35-3 boric acid**EC50 133 mg/l/48h (Daphnia magna)
(ECOTOX)LC50 50–100 mg/l/96h (rainbow trout)
(ECOTOX)**CAS: 7681-38-1 sodium bisulfate**EC50 190 mg/l/48h (Daphnia magna)
(IUCLID)**CAS: 7803-55-6 ammonium meta-vanadate**NOEC 0.87 mg/l (fish) (30d)
(ECHA: Clarias batrachus)LC50 2.6 mg/l/96h (fish)
(ECOTOX: Ictalurus catus)· **Bacterial toxicity:**

sulphates toxic > 2.5 g/l

CAS: 7681-38-1 sodium bisulfate

EC10 >1000 mg/l (Pseudomonas putida) (16 h)

· **Other information:**

Toxic for fish:

Sulphates > 7 g/l

molybdenum compounds in general: > 25 mg/l

NH₄⁺ > 0.3 mg/l· **12.2 Persistence and degradability**· **Other information:**

Mixture of inorganic compounds.

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

· **12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 10043-35-3 boric acidlog Pow -1.09 (.) (OECD 107, 22°C)
(Merck)· **12.4 Mobility in soil** No further relevant information available.

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12.5 Results of PBT and vPvB assessment

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

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies. Avoid transfer into the environment.

Water hazard:

Do not allow product to reach ground water, water bodies or sewage system.

Danger to drinking water if even small quantities leak into soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

European waste catalogue

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

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

SECTION 14: Transport information

14.1 UN number or ID number**ADR, IMDG, IATA**

UN1759

14.2 UN proper shipping name**ADR**

1759 CORROSIVE SOLID, N.O.S. (dipotassium disulfate)

IMDG, IATA

CORROSIVE SOLID, N.O.S. (dipotassium disulfate)

14.3 Transport hazard class(es)**ADR****Class**

8 (C10) Corrosive substances.

Label

8

IMDG, IATA**Class**

8 Corrosive substances.

Label

8

14.4 Packing group**ADR, IMDG, IATA**

II

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Warning: Corrosive substances.

Kemler Number:

80

EMS Number:

F-A,S-B

Segregation groups

(SGG1) Acids, (SGG2) ammonium compounds

Stowage Category

A

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

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

SECTION 15: Regulatory information

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

· **Poisons Act UK**

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

· **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients is listed.

· **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**

None of the ingredients is listed.

· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

None of the ingredients is listed.

· **Substances of very high concern (SVHC) according to REACH, Article 57** see item 3 SVHC

· **Substances of very high concern (SVHC) according to UK REACH** see item 3 SVHC

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

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

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 30

· **Information about limitation of use:**

Employment restrictions concerning young persons must be observed (94/33/EC).

Employment restrictions concerning pregnant and lactating women must be observed (92/85/EEC).

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

SECTION 16: Other information

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

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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

- **Relevant phrases**

H301 Toxic if swallowed.
 H314 Causes severe skin burns and eye damage.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H332 Harmful if inhaled.
 H360FD May damage fertility. May damage the unborn child.
 H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
 H372 Causes damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.

- **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development
 STOT: specific target organ toxicity
 SE: single exposure
 RE: repeated exposure
 EC50: half maximal effective concentration
 IC50: half maximal inhibitory concentration
 NOEL or NOEC: No Observed Effect Level or Concentration
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (UK REACH)
 PNEC: Predicted No-Effect Concentration (UK REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 ATE: Acute toxicity estimate values
 Acute Tox. 3: Acute toxicity – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Repr. 1B: Reproductive toxicity – Category 1B
 Repr. 2: Reproductive toxicity – Category 2
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

- **Sources**

Data arise from safety data sheets, reference works and literature.
 GESTIS- Stoffdatenbank (Substance Database, Germany)
 ECHA: European CHemicals Agency <http://echa.europa.eu>
 IUCLID (International Uniform Chemical Information Database)
 ECOTOX Database

- * **Data compared to the previous version altered.**