

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

Printing date 29.07.2014

Version number 4

Revision: 29.07.2014

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

- **1.1 Product identifier**
- **Product name:** Alka-M-Photometer
- **Catalog number:** 95727763, 549-616
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de


SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Preparation contains organic compounds.

Dangerous components:

CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9	adipic acid	 Xi R36  Eye Irrit. 2, H319	2.5-5%
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- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk 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; consult doctor in case of symptoms.
 - **After skin contact** Instantly wash with water and soap and rinse thoroughly.
 - **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
irritations
After swallowing of large amounts:
thirst
gastric or intestinal trouble
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Water
Fire-extinguishing powder
Carbon dioxide (CO₂)
 - **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NO_x)
Carbon monoxide (CO)
Sulphur dioxide (SO₂)
 - **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.
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* SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
 - **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
 - **6.4 Reference to other sections**
No dangerous materials are released.
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
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* SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Prevent formation of dust.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.

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- **Information about storage in one common storage facility:** store away from solvents
 - **Further information about storage conditions:**
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 11
 - **7.3 Specific end use(s)** No further relevant information available.
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SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 - Wash hands during breaks and at the end of the work.
 - Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P1
 - **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
 - **Material of gloves**
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - Value for the permeation: Level = 1 (< 10 min)
 - **Eye protection:**
 - Safety glasses
 - use against the effects of fumes / dust
 - **Body protection:** Protective work clothing.
-

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

Form:	Tablets
Colour:	Orange
Odour:	Odourless

pH-value at 20 °C:	3.5
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Melting point/Melting range:	Not determined
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Boiling point/Boiling range:	265 °C Not applicable
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Flash point:	> 100 °C
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Danger of explosion:	Product is not explosive.
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Density	Not determined
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Vapour density	Not applicable.
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Evaporation rate	Not applicable.
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· Solubility in / Miscibility with

Water:	Soluble
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· Solvent content:

Organic solvents:	0.0 %
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Solids content:	100.0 %
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· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Risk of dust explosion if enriched with fine dust in presence of air
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - halogen compounds
 - combustible substances
- **Hazardous decomposition products:** see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** irritating effect possible
- **Sensitization:** Sensitizing effect by skin contact is possible by prolonged/repeated exposure.
- **Additional toxicological information:**
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - CAS-No. 124-04-9: 100% / 28 d
- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful effect due to pH shift.
- **Additional ecological information:**
- **General notes:**
 - Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
 - Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
 - Must not reach sewage water or drainage ditch undiluted or unneutralized.
- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

· European waste catalogue	
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16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN-Number · ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

- **Relevant phrases**

H319 Causes serious eye irritation.

R36 Irritating to eyes.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized 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)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

- **Sources** Data arise from reference works and literature.

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



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

- **1.1 Product identifier**
- **Product name:** Aluminium No.1
- **Catalog number:** 95727755, 549-608
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* 2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.
No hazards to be particularly mentioned.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.

3 Composition/information on ingredients

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

Dangerous components:

CAS: 70-49-5	mercaptosuccinic acid	2.5-5%
EINECS: 200-736-4	☒ Xn R22; ☒ Xi R36/37/38	
	☒ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	

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 · **REACH - Pre-registered substances** All components are REACH pre-registered.

* 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; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.
Call a doctor immediately.

· **After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.

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

sickness
vomiting
diarrhoea
drop in blood pressure
respiratory paralysis
cardiovascular disorders

- **Danger** Danger of disturbed cardiac rhythm.

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

No further relevant information available.

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

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

Hydrogen chloride (HCl)

Sulphur oxides (SOx)

· 5.3 Advice for firefighters

- **Protective equipment:** Wear self-contained breathing apparatus.

· **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.

6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

- **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:

Collect mechanically.

Ensure adequate ventilation.

Dispose of contaminated material as waste according to item 13.

- **6.4 Reference to other sections** No dangerous materials are released.
-

* 7 Handling and storage

- **7.1 Precautions for safe handling** No special measures required.

- **Information about protection against explosions and fires:** The product is not flammable

· 7.2 Conditions for safe storage, including any incompatibilities

· **Storage**

- **Requirements to be met by storerooms and containers:** Store in cool location.

- **Information about storage in one common storage facility:** Store away from oxidizing agents.

· **Further information about storage conditions:**

Protect from heat and direct sunlight.

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- Store under dry conditions.
- Protect from humidity and keep away from water.
- Protect from the effects of light.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 11
- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures** Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≤ 1 (>10 min)
- **Eye protection:**
use against the effects of fumes / dust
Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form:	Tablets
Colour:	Pink
· Odour:	Nearly odourless
· pH-value (11 g/l) at 20 °C:	3.1
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	1413 °C
· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density	Not determined
· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

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- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - acids
 - oxidizing agents
 - > forms heat
- **Hazardous decomposition products:** see chapter 5

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

· LD/LC50 values that are relevant for classification:		
70-49-5 mercaptosuccinic acid		
Oral	LD50	800 mg/kg (rat)
	LD50 IPR	200 mg/kg (mouse)
	LD50 IVN	>1 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

*12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**

Quantitative data on the ecological effect of this product are not available.

The following statements refer to the individual components.
- **12.3 Bioaccumulative potential** No further relevant information available.

· Behaviour in environmental systems:	
70-49-5 mercaptosuccinic acid	
log P(o/w)	-0.88 (.)

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

- **Ecotoxicological effects:**

- **Remark:**

Toxic for fish:

NH₄⁺ > 0.3 mg/l

sulphates > 7 g/l

Magnesium compounds: 100 - 400 mg/l

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

- **Additional ecological information:**

- **General notes:**

Water danger class 3 (German Regulation) (Self-assessment acc. VwVwS Annex 4): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

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

- **12.5 Results of PBT and vPvB assessment** no data available

- **vPvB assessments:** no data available

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- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- | | |
|-----------------------------------|--|
| · European waste catalogue | |
| 16 05 09 | discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08 |
- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.
 - **Recommended cleaning agent:** Water, if necessary with cleaning agent.

*14 Transport information

· 14.1 UN-Number	
· ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name	
· ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

*15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Not required.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*16 Other information

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

- **Relevant phrases**

H302 Harmful if swallowed.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

R22 Harmful if swallowed.
 R36/37/38 Irritating to eyes, respiratory system and skin.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization

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ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· Sources

GESTIS-Stoffdatenbank

Data arise from reference works and literature.

· * Data compared to the previous version altered.

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

Printing date 07.12.2012

Version number 47

Revision: 07.12.2012

* 1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Product name:** Aluminium No. 2

· **Catalog number:** 549-608, 95727755

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

No further relevant information available.

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

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

· **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

· **1.4 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 2 Hazards identification

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

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



GHS02 flame

Flam. Sol. 2 H228 Flammable solid.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Sensitising

R43: May cause sensitisation by skin contact.



F; Highly flammable

R11: Highly flammable.

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
Product name: Aluminium No. 2

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- **2.2 Label elements**
 - **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
 - **Hazard pictograms** GHS02, GHS07
 - **Signal word** Warning
 - **Hazard-determining components of labelling:**
methenamine
 - **Hazard statements**
H228 Flammable solid.
H317 May cause an allergic skin reaction.
 - **Precautionary statements**
P280 Wear protective gloves.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
-

* 3 Composition/information on ingredients

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

· Dangerous components:			
CAS: 100-97-0	methenamine	 Xi R43;  F R11	90-100%
EINECS: 202-905-8		 Flam. Sol. 2, H228;  Skin Sens. 1, H317	
Index number: 612-101-00-2			

- **REACH - Pre-registered substances** All components are REACH pre-registered.
 - **Additional information** For the wording of the listed risk phrases refer to section 16.
-

* 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.
Seek medical treatment in case of complaints.
- **After skin contact**
Instantly rinse with water.
Seek medical treatment.
- **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.
Seek medical treatment.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment in case of complaints.
- **4.2 Most important symptoms and effects, both acute and delayed**
allergic reactions
irritations
after inhalation:
coughing
asthma attacks
mucous membrane irritation
After swallowing of large amounts:
gastric or intestinal trouble
sickness
vomiting
pain

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- **Danger** risk of skin sensitization
 - **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.
-

* 5 Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
 - Alcohol-resistant foam
 - Water haze
 - Carbon dioxide (CO₂)
 - Fire-extinguishing powder
 - **5.2 Special hazards arising from the substance or mixture**
 - Development of hazardous combustion gases or vapours possible in the event of fire.
 - Can be released in case of fire:
 - Nitrogen oxides (NO_x)
 - Hydrogen cyanide (HCN)
 - ammonia (NH₃)
 - formaldehyde
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
 - Wear full protective suit.
 - Wear self-contained breathing apparatus.
 - **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.
-

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Avoid causing dust.
 - Ensure adequate ventilation
 - Use breathing protection against the effects of fumes/dust/aerosol.
 - Keep away from ignition sources
 - **6.2 Environmental precautions:**
 - Do not allow product to reach sewage system or water bodies.
 - Damp down gases/fumes/haze with water spray jet.
 - **6.3 Methods and material for containment and cleaning up:**
 - Collect mechanically.
 - Ensure adequate ventilation.
 - 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.
-

* 7 Handling and storage

- **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
 - **Information about protection against explosions and fires:**
 - Protect against electrostatic charges.
 - Dust can combine with air to form an explosive mixture.
 - Keep ignition sources away - Do not smoke.
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
-

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- **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Store in cool, dry conditions in well sealed containers.
 - Protect from heat and direct sunlight.
 - Protect from humidity and keep away from water.
 - This product is hygroscopic.
 - Protect from the effects of light.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 4.1B
- **7.3 Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

· 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

100-97-0 methenamine (90-100%)

OEL (Sweden)	Short-term value: 5 mg/m ³ Long-term value: 3 mg/m ³ S
--------------	--

- **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

- Keep away from foodstuffs, beverages and food.
- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P2

- **Protection of hands:** 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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

- Tightly sealed safety glasses.
- use against the effects of fumes / dust

- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|----------------|------------|
| Form: | Tablets |
| Colour: | White |
| Odour: | Amine-like |

- | | |
|-----------------------------------|-----|
| pH-value (9 g/l) at 20 °C: | 7.5 |
|-----------------------------------|-----|

- | | |
|-------------------------------------|---------------|
| Melting point/Melting range: | 280, Subl. °C |
|-------------------------------------|---------------|

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· Boiling point/Boiling range:	Not determined
· Flash point:	> 100 °C
· Inflammability (solid, gaseous)	Flammable.
· Danger of explosion:	The following applies in general to flammable organic substances / preparations: Dust explosion possible if in powder or granular form (fine distribution), mixed with air.
· Critical values for explosion:	
Lower:	20 g/m ³
· Density at 20 °C	1.331 g/cm ³
· Settled apparent density at 20 °C	600 kg/m ³
· Solubility in / Miscibility with Water at 20 °C:	895 g/l
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

*10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** strong heating
- **Possibility of hazardous reactions**
 - with nitric acid, acetic anhydride
 - Strong exothermic reaction with acids
 - Reacts with halogenated compounds
 - The product is not capable of dust explosion in the form supplied; enrichment with fine dust causes risk of dust explosion
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - acids
 - peroxides
 - halogenated hydrocarbons
 - iodide
 - halogen compounds
 - combustible substances
 - oxidizing agents
- **Hazardous decomposition products:**
 - nitrous gases
 - hydrogen cyanide (prussic acid)
 - formaldehyde
 - ammonia (NH₃)
 - see chapter 5

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** The following statements refer to the individual components.

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· LD/LC50 values that are relevant for classification:		
100-97-0 methenamine		
Oral	LD50	9200 mg/kg (rat) (IUCLID)
	LD50	9200 mg/kg (rat) intravenous

· Primary irritant effect:

- **on the skin:** temporary erythema possible
- **on the eye:** slight irritations possible
- **Sensitization:** Sensitization possible by skin contact.
- **Experience with humans:** Can cause kidney damages.

· Additional toxicological information:

The following applies to aromatic amines in general: systemic effect - methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, spasm,
principal symptom: cyanosis (blue discoloration of the blood)

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

*** 12 Ecological information****· 12.1 Toxicity**

· Aquatic toxicity:	
100-97-0 methenamine	
EC50	36 mg/l/48h (Daphnia magna) (IUCLID)
LC50	49.8 mg/l/96h (Pimephales promelas)
Toxicity EC10	5 g/l (fish)
Toxicity ECo	10 g/l/48h (Daphnia magna)

- **12.2 Persistence and degradability** No further relevant information available.

· Other information:

Quantitative data on the ecological effect of this product are not available.

The following statements refer to the individual components.

CAS-No. 100-97-0: 39-47% / 28 d

The product is slightly biodegradable.

- **12.3 Bioaccumulative potential** Does not accumulate in organisms

· Behaviour in environmental systems:	
100-97-0 methenamine	
log P(o/w)	-2.84 (.)

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

· Ecotoxicological effects:**· Remark:**

Toxic for fish:

Magnesium compounds: 100 - 400 mg/l

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

· Additional ecological information:

· BSB5-value:	
100-97-0 methenamine	
BSB5	0.015 g/g (.)

· General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

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Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

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 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
----------	--

- **Uncleaned packagings:**

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

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

*14 Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA** UN1328

- **14.2 UN proper shipping name**

- **ADR** 1328 HEXAMETHYLENETETRAMINE
- **IMDG, IATA** HEXAMETHYLENETETRAMINE

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class** 4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives.
- **Label** 4.1

- **IMDG, IATA**



- **Class** 4.1 Flammable solids, self-reactive substances and solid desensitised explosives.
- **Label** 4.1

- **14.4 Packing group**

- **ADR, IMDG, IATA** III

- **14.5 Environmental hazards:**

- **Marine pollutant:** No

- **14.6 Special precautions for user**

Warning: Flammable solids, self-reactive substances and solid desensitised explosives.

- **Kemler Number:** 40

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· EMS Number:	F-A,S-G
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5 kg
· Transport category	3
· Tunnel restriction code	E

* 15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

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

- **Relevant phrases**

H228 Flammable solid.

H317 May cause an allergic skin reaction.

R11 Highly flammable.

R43 May cause sensitisation by skin contact.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

NFPA: National Fire Protection Association (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

GESTIS-Stoffdatenbank

IUCLID (International Uniform Chemical Information Database)

Data arise from reference works and literature.

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

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* 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier** Reagent for water analysis
- **Product name:** Chloride T1
- **Catalog number:** 549-607, 95727754
- **Details of the supplier of the safety data sheet**

- **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

- **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

- **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

- **Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

2 Hazards identification

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



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R41: Risk of serious damage to eyes.

- **Label elements**

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

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

- **Hazard pictograms** GHS05

- **Signal word** Danger

- **Hazard-determining components of labelling:**

sodium bisulfate

- **Hazard statements**

H318 Causes serious eye damage.

- **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P310 Immediately call a POISON CENTER or doctor/physician.

* 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of organic and inorganic compounds

- **Dangerous components:**

CAS: 7681-38-1 EINECS: 231-665-7 Index number: 016-046-00-X	sodium bisulfate	 Xi R41  Eye Dam. 1, H318	45-55%
---	------------------	--	--------

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 4 First aid measures

- **Description of first aid measures**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.
Call a doctor immediately.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; instantly call for medical help.
- **Most important symptoms and effects, both acute and delayed**
mucous membrane irritation
after inhalation:
coughing
irritations
after swallowing:
thirst
ataxia (impaired locomotor coordination)
gastric or intestinal trouble
diarrhoea
fatigue
- **Danger** Danger of pulmonary oedema.

* 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
Use fire fighting measures that suit the environment.
Water
Foam
Fire-extinguishing powder
Carbon dioxide (CO₂)
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Nitrogen oxides (NO_x)

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Carbon monoxide (CO)

Sulphur oxides (SO_x)

Sodium oxide

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

- **Additional information**

Ambient fire may liberate hazardous vapours.

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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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

- **Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

* 7 Handling and storage

- **Handling**

- **Precautions for safe handling** Prevent formation of dust.

- **Information about protection against explosions and fires:** The product is not flammable

- **Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:** Store in cool location.

- **Information about storage in one common storage facility:** Store away from metals.

- **Further information about storage conditions:**

Protect from heat and direct sunlight.

Store under dry conditions.

Protect from humidity and keep away from water.

This product is hygroscopic.

Protect from the effects of light.

- **Recommended storage temperature:** 20°C +/- 5°C

- **Storage class** 10-13

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **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.

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- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P2
 - **Protection of hands:**
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**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 1 (>10 min)
 - **Eye protection:** Tightly sealed safety glasses.
 - **Body protection:** Protective work clothing.
-

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Appearance:	
· Form:	Tablets
· Colour:	Cream coloured
· Odour:	Odourless
· pH-value (11 g/l) at 20°C:	1.6
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	Not applicable
· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density at 20°C	1.78 g/cm ³
· Solubility in / Miscibility with	
· Water:	Soluble
· Solvent content:	
· Organic solvents:	0.0 %
· Solids content:	100.0 %

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
Reacts with alcohols
Forms hydrogen in aqueous solution with metals
Liberates acid in contact with water or alcohol.

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- **Incompatible materials:**
 - alkalis
 - metals
 - alcohols
 - oxidizing agents
 - **Hazardous decomposition products:** see chapter 5
-

* 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:		
7681-38-1 sodium bisulfate		
Oral	LD50	2490 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rabbit)

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

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Strong irritant with the danger of severe eye injury.
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:** Irritant
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available
-

12 Ecological information

- **Toxicity**

· Aquatic toxicity:	
7681-38-1 sodium bisulfate	
EC50	190 mg/l/48h (Daphnia magna)
Toxicity EC10	> 1 16h/ g/l (Pseudomonas putida)

EC50	190 mg/l/48h (Daphnia magna)
Toxicity EC10	> 1 16h/ g/l (Pseudomonas putida)

- **Persistence and degradability**

- **Other information:**

Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.

- **Ecotoxicological effects:**

- **Remark:**

Toxic for fish:
sulphates > 7 g/l
Forms corrosive mixtures with water even if diluted.

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

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.

- **Results of PBT and vPvB assessment** no data available

- **vPvB assessments:** no data available

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13 Disposal considerations

- **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 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

* 14 Transport information

- | | |
|--|--|
| · Land transport ADR/RID (cross-border) | |
| · ADR/RID-GGVS/E Class: - | |

- | | |
|-----------------------------------|----|
| · Maritime transport IMDG: | |
| · IMDG Class: | - |
| · Marine pollutant: | No |

- | | |
|--|---|
| · Air transport ICAO-TI and IATA-DGR: | |
| · ICAO/IATA Class: | - |

- **UN "Model Regulation":** -
- **Special precautions for user** Not applicable.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

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

- **Relevant phrases**
H318 Causes serious eye damage.
R41 Risk of serious damage to eyes.
- **Recommended restriction of use:** professional/industrial use only
- **Abbreviations and acronyms:**
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization

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ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· Sources

GESTIS-Stoffdatenbank

IUCLID (International Uniform Chemical Information Database)

Data arise from reference works and literature.

· * Data compared to the previous version altered.

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

- **1.1 Product identifier**
- **Product name:** Chloride T2
- **Catalog number:** 95727754, 549-607
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* 2 Hazards identification

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



GHS05 corrosion

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



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R34: Causes burns.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS05, GHS09
- **Signal word** Danger
- **Hazard-determining components of labelling:**
potassium monopersulfate triple salt
silver nitrate

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Hazard statements

H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.













3 Composition/information on ingredients

3.2 Mixtures

Description: Mixture of organic and inorganic compounds

Dangerous components:

M-factor: 100 / CAS 7761-88-8

CAS: 37222-66-5	potassium monopersulfate triple salt  C R34;  Xn R22;  O R8  Ox. Sol. 2, H272;  Skin Corr. 1B, H314;  Acute Tox. 4, H302	10-20%
CAS: 7761-88-8 EINECS: 231-853-9 Index number: 047-001-00-2	silver nitrate  C R34;  O R8;  N R50/53  Ox. Sol. 2, H272;  Skin Corr. 1B, H314;  Aquatic Acute 1, H400; Aquatic Chronic 1, H410	≤ 2.5%

REACH - Pre-registered substances All components are REACH pre-registered.

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

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 or oxygen; call for doctor.

In case of unconsciousness bring patient into stable side position for transport.

After skin contact

Instantly rinse with water.

Instantly wash with polyethylene glycol 400.

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

After eye contact

Rinse opened eye for several minutes (at least 10 min) under running water.

Call a doctor immediately.

After swallowing

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

Do not induce vomiting; instantly call for medical help.

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

after inhalation:

sickness

coughing

headache

damage to the affected mucous membranes possible

after swallowing:

strong caustic effect.

breathing difficulty

cramps

Danger

Danger of impaired breathing.

Danger of gastric perforation.

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

If swallowed or in case of vomiting, danger of entering the lungs

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 Subsequent observation for pneumonia and pulmonary oedema

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
Use fire fighting measures that suit the environment.
Water spray jet
Alcohol-resistant foam
Fire-extinguishing powder
Carbon dioxide (CO₂)
- **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire:
nitrogen oxides (NO_x)
Sulphur oxides (SO_x)
Oxygen (O₂)
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.

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Inform respective authorities in case product reaches water or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7 Handling and storage

- **7.1 Precautions for safe handling**
Open and handle container with care.
Prevent formation of dust.
Keep away from heat and direct sunlight.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.
Protect from the effects of light.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 8 B

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 · **7.3 Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

 · **Additional information about design of technical systems:** No further data; see item 7.

 · **8.1 Control parameters**

 · **Components with limit values that require monitoring at the workplace:**
7761-88-8 silver nitrate (≤ 2.5%)

WEL (Great Britain)	Long-term value: 0.01 mg/m ³ as Ag
IOELV (European Union)	Long-term value: 0.01 mg/m ³ as Ag
OEL (Sweden)	Long-term value: 0.01 mg/m ³ som Ag; totaldamm

 · **8.2 Exposure controls**

 · **Personal protective equipment**

 · **General protective and hygienic measures**

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while working.

 · **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

 · **Recommended filter device for short term use:** Filter P3

 · **Protection of hands:**

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**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level = 1 (< 10 min)

 · **Eye protection:** Tightly sealed safety glasses.

 · **Body protection:** Protective work clothing.

* 9 Physical and chemical properties

 · **9.1 Information on basic physical and chemical properties**

 · **Appearance:**

Form: Tablets

Colour: Pigmented

 · **Odour:** Odourless

 · **pH-value (12.9 g/l) at 20 °C:** 2.2

 · **Melting point/Melting range:** Not determined

 · **Boiling point/Boiling range:** Not determined

 · **Flash point:** Not applicable

 · **Density at 20 °C** 1.5 g/cm³

 · **Vapour density** Not applicable.

 · **Evaporation rate** Not applicable.

 · **Solubility in / Miscibility with**

Water: Soluble

 · **Solvent content:**

Organic solvents: 0.0 %

Solids content: 100.0 %

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· 9.2 Other information	No further relevant information available.
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10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with alcohols
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - alkalis
 - halogen compounds
 - reducing agents
 - aluminium
- **Hazardous decomposition products:**
 - see chapter 5
 - sodium monoxide

11 Toxicological information

- **11.1 Information on toxicological effects**
 - **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.
- | | |
|---|-----------------------|
| · LD/LC50 values that are relevant for classification: | |
| 37222-66-5 potassium monopersulfate triple salt | |
| Oral | LD50 1250 mg/kg (rat) |
| 7761-88-8 silver nitrate | |
| Oral | LD50 1173 mg/kg (rat) |
- **Primary irritant effect:**
 - **on the skin:** Caustic effect on skin and mucous membranes.
 - **on the eye:** strong caustic effect.
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:**
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

*12 Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

37222-66-5 potassium monopersulfate triple salt	
LC50	36 - 52 mg/l/96h (byr)
7761-88-8 silver nitrate	
EC50	0.002 mg/l/48h (Daphnia magna) (Merck)
LC50	0.029 mg/l/96h (Leuciscus idus) (MERCK)
	0.006 mg/l/96h (Lepomis macrochirus) (ECOTOX)

- **12.2 Persistence and degradability** No further relevant information available.

- **Other information:**

- Quantitative data on the ecological effect of this product are not available.
- The following statements refer to the individual components.

- **12.3 Bioaccumulative potential** Nitrates: may contribute to the eutrophication of water supplies

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- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
Toxic for fish:
sulphates > 7 g/l
Forms corrosive mixtures with water even if diluted.
- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

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	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
---------------------------------	--

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

*14 Transport information

- | | |
|-------------------------------------|---|
| 14.1 UN-Number | UN3260 |
| ADR, IMDG, IATA | |
| 14.2 UN proper shipping name | 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (potassium monopersulfate triple salt, SILVER NITRATE), ENVIRONMENTALLY HAZARDOUS |
| ADR | |
| IMDG | CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (potassium monopersulfate triple salt, SILVER NITRATE), MARINE POLLUTANT |
| IATA | CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (potassium monopersulfate triple salt, SILVER NITRATE) |

14.3 Transport hazard class(es)	
ADR	
 	
Class	8 (C2) Corrosive substances.
Label	8
IMDG	
 	
Class	8 Corrosive substances.



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· Label	8
· IATA	
	
· Class	8 Corrosive substances.
· Label	8
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards: · Marine pollutant:	Product contains environmentally hazardous substances: silver nitrate Yes
· Special marking (ADR):	Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups	Warning: Corrosive substances. 80 F-A,S-B Acids
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code	 1 kg 2 E

* 15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

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

· **Relevant phrases**

- H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

- R22 Harmful if swallowed.
R34 Causes burns.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R8 Contact with combustible material may cause fire.

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

· Sources

GESTIS-Stoffdatenbank
ECOTOX Database
Data arise from reference works and literature.

· * Data compared to the previous version altered.

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Version number 19

Revision: 26.11.2014

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

- **1.1 Product identifier**
- **Product name:** CyA-Test
- **Catalog number:** 95727760, 549-613
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:** No hazards to be particularly mentioned.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of organic and inorganic compounds
- **Dangerous components:** Void
- **REACH - Pre-registered substances** All components are REACH pre-registered.

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; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.

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Seek immediate medical advice.

- **After swallowing**

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

In case of persistent symptoms consult doctor.

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

After swallowing of large amounts:

thirst

gastric pain

general feeling of sickness

pseudoallergic reactions

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

* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

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

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

combustible

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

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Sulphur dioxide (SO₂)

Hydrogen chloride (HCl)

Ammonia (NH₃)Phosphorus oxides (P_xO_x)

Dipotassium oxide

hydrogen cyanide (prussic acid)

- **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**

Wear protective equipment. Keep unprotected persons away.

- **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:**

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

- **6.4 Reference to other sections**

No dangerous materials are released.

See Section 7 for information on safe handling

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** Prevent formation of dust.

- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:** Store in cool location.

- **Information about storage in one common storage facility:** Store away from oxidising agents.

- **Further information about storage conditions:**

Protect from heat and direct sunlight.

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Product name: CyA-Test

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- Store under dry conditions.
- Protect from humidity and keep away from water.
- This product is hygroscopic.
- Protect from the effects of light.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 11
- **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
- **Eye protection:**
use against the effects of fumes / dust
Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

* SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|------------------|-----------|
| · Form: | Tablets |
| · Colour: | White |
| · Odour: | Odourless |

· pH-value at 20 °C:	6
-----------------------------	---

· Melting point/Melting range:	Not determined
---------------------------------------	----------------

· Boiling point/Boiling range:	Not determined
---------------------------------------	----------------

· Flash point:	Not applicable
-----------------------	----------------

· Danger of explosion:	Product is not explosive.
-------------------------------	---------------------------

· Density at 20 °C	1.38 g/cm ³
---------------------------	------------------------

· Vapour density	Not applicable.
-------------------------	-----------------

· Evaporation rate	Not applicable.
---------------------------	-----------------

· Solubility in / Miscibility with Water:	Soluble
--	---------

· Solvent content:

· Organic solvents:	0.0 %
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· Solids content:	100.0 %
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Product name: CyA-Test

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· 9.2 Other information No further relevant information available.

* SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - alkali metals
 - acids
 - halogen compounds
 - combustible substances
 - oxidizing agents
- **Hazardous decomposition products:**
 - carbon monoxide (CO) and carbon dioxide (CO₂)
 - see chapter 5

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.
- **Subacute to chronic toxicity:** chronic: dermatitis
- **Additional toxicological information:**
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** Quantitative data on the ecological effect of this product are not available.
- **12.3 Bioaccumulative potential**
 - Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
 - Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
 - Do not allow product to reach ground water, water bodies or sewage system.
- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

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GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2014

Version number 19

Revision: 26.11.2014

Product name: CyA-Test

(Contd. of page 4)

· European waste catalogue	
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

* SECTION 14: Transport information

· 14.1 UN-Number · ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **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.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organisation
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 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)

- **Sources**

IUCLID (International Uniform Chemical Information Database)
 ECOTOX Database
 International Chemical Safety Cards (ICSCs)
 Data arise from reference works and literature.

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

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

Printing date 22.05.2015

Version number 14

Revision: 22.05.2015

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

- **1.1 Product identifier**
- **Product name:** **DPD Acidifying**
(boric acid free)
- **Catalog number:** 98032751, 549-621
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

SECTION 2: Hazards identification

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



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R41: Risk of serious damage to eyes.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS05
- **Signal word** Danger
- **Hazard-determining components of labelling:**
sodium bisulfate
- **Hazard statements**
H318 Causes serious eye damage.
- **Precautionary statements**
P280 Wear eye protection / face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.

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GB

Safety data sheet

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Version number 14

Revision: 22.05.2015

**Product name: DPD Acidifying
(boric acid free)**



(Contd. of page 1)

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

SECTION 3: Composition/information on ingredients

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

- **Dangerous components:**

CAS: 7681-38-1 EINECS: 231-665-7 Index No: 016-046-00-X	sodium bisulfate	 Xi R41  Eye Dam. 1, H318	10-20%
---	------------------	--	--------

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.
Call a doctor immediately.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting.
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:**
irritations
after swallowing:
sickness
vomiting
diarrhoea
cardiovascular disorders
after inhalation:
mucous membrane irritation
Danger of pulmonary oedema.
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

SECTION 5: Firefighting measures

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

— GB —
(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 22.05.2015

Version number 14

Revision: 22.05.2015

**Product name: DPD Acidifying
(boric acid free)**

(Contd. of page 2)

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Avoid causing dust.
Ensure adequate ventilation
- **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
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** No special precautions necessary if used correctly.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from the effects of light.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 13
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Avoid contact with the eyes and skin.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
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**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)

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Safety data sheet

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**Product name: DPD Acidifying
(boric acid free)**

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- **Eye protection:**
Tightly sealed safety glasses.
use against the effects of fumes / dust
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|------------------------|-----------------|
| Form / Physical state: | Tablets |
| Colour: | White |
| · Odour: | Odourless |
| · Odour threshold: | Not determined. |

· pH-value (14.3 g/l) at 20 °C: 2.4

· Melting point/Melting range: Not determined

· Boiling point/Boiling range: Not applicable
Decomposition

· Flash point: Not applicable

· Inflammability (solid, gaseous) The product is not combustible.

· Danger of explosion: Product is not explosive.

· Critical values for explosion:

- | | |
|--------|-----------------|
| Lower: | Not determined. |
| Upper: | Not determined. |

· Density at 20 °C 2.65 g/cm³

· Relative density Not determined.

· Vapour density Not applicable.

· Evaporation rate Not applicable.

· Solubility in / Miscibility with

Water: Soluble

· Partition coefficient (n-octanol/water): Not applicable.

· Viscosity:

- | | |
|------------|-----------------|
| dynamic: | Not applicable. |
| kinematic: | Not applicable. |

· Solvent content:

Organic solvents: 0.0 %

Solids content: 100.0 %

· 9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

· Reactivity

· **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

· Possibility of hazardous reactions

Forms hydrogen in aqueous solution with metals

Liberates acid in contact with water or alcohol.

· **Conditions to avoid** No further relevant information available.

· Incompatible materials:

metals
alcohols
aluminium
oxidizing agents

· Hazardous decomposition products:

Sulphur oxides (SO_x)
see chapter 5

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Safety data sheet

according to 1907/2006/EC, Article 31

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Revision: 22.05.2015

**Product name: DPD Acidifying
(boric acid free)**

sodium monoxide

(Contd. of page 4)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.

Primary irritant effect:

Skin corrosion/irritation

No irritant effect.
(rabbit)

Serious eye damage/irritation

Strong irritant with the danger of severe eye injury.

Respiratory or skin sensitisation

No sensitizing effect known.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

no data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

7757-82-6 sodium sulphate

EC50	2564 mg/l/48h (Daphnia magna) (IUCLID)
LC50	120 mg/l/96h (Gambusia affinis) (IUCLID)
	13500-14500 mg/l/96h (Pimephales promelas)

12.2 Persistence and degradability

No further relevant information available.

Other information:

Methods for the determination of biodegradability are not applicable to inorganic substances.
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.

12.3 Bioaccumulative potential

No further relevant information available.

Behaviour in environmental systems:

12.4 Mobility in soil

No further relevant information available.

Ecotoxicological effects:

Remark:

Forms corrosive mixtures with water even if diluted.
Toxic for fish:
sulphates > 7 g/l

Bacterial toxicity:

sulphates toxic > 2.5 g/l

Additional ecological information:

General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

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

European waste catalogue

16 05 07*	discarded inorganic chemicals consisting of or containing dangerous substances
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(Contd. on page 6)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 22.05.2015

Version number 14

Revision: 22.05.2015

**Product name: DPD Acidifying
(boric acid free)**

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class 	Void
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	Not dangerous according to the above specifications.

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* SECTION 16: Other information

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

- **Relevant phrases**

H318 Causes serious eye damage.

R41 Risk of serious damage to eyes.

- **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

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

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)

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

- **Sources** Data arise from safety data sheets, reference works and literature.
- *** Data compared to the previous version altered.**



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

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

* 1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier** Reagent for water analysis
- **Product name:** DPD Neutralising
- **Catalog number:** 98032752, 549-622
- **1.2 Details of the supplier of the safety data sheet**

- **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

- **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

- **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

- **1.3 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 2 Hazards identification

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

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

The product is not classified as hazardous according to the CLP regulation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void

- **Information concerning particular hazards for human and environment:**

The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.

- **2.2 Label elements**

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

- **Hazard pictograms** Void

- **Signal word** Void

- **Hazard statements** Void

* 3 Composition/information on ingredients

- **3.2 Chemical characterization: Mixtures**

- **Description:** mixture contains inorganic compounds

- **Dangerous components:** Void

- **REACH - Pre-registered substances** All components are REACH pre-registered.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

Product name: DPD Neutralising

(Contd. of page 1)

* 4 First aid measures

- **4.1 Description of first aid measures**
 - **General information** No special measures required.
 - **After inhalation** Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact** Instantly rinse with water.
 - **After eye contact** Rinse opened eye for several minutes (at least 10 min) under running water.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed**
After swallowing of large amounts:
sickness
vomiting
 - **Danger** Danger of disturbed cardiac rhythm.
 - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.
-

* 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**
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
dipotassium oxide
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Ambient fire may liberate hazardous vapours.
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.
-

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid causing dust.
Use breathing protection against the effects of fumes/dust/aerosol.
 - **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
 - **6.4 Reference to other sections** No dangerous materials are released.
-

* 7 Handling and storage

- **Handling**
- **7.1 Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** The product is not flammable

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

Product name: DPD Neutralising

(Contd. of page 2)

- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
Protect from the effects of light.
 - **Recommended storage temperature:** 20°C +/- 5°C
 - **Storage class** 10-13
 - **7.3 Specific end use(s)** No further relevant information available.
-

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P1
 - **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
 - **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 1 (>10 min)
 - **Eye protection:**
use against the effects of fumes / dust
Safety glasses
 - **Body protection:** Protective work clothing.
-

* 9 Physical and chemical properties

- | | |
|--|-----------|
| · 9.1 Information on basic physical and chemical properties | |
| · Appearance: | |
| · Form: | Tablets |
| · Colour: | White |
| · Odour: | Odourless |
| · pH-value (12.3 g/l) at 20°C: 9 | |
| · Melting point/Melting range: Not determined | |
| · Boiling point/Boiling range: 1413°C | |

(Contd. on page 4)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

Product name: DPD Neutralising

(Contd. of page 3)

· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density at 20°C	2.032 g/cm ³
· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

* 10 Stability and reactivity

- **Reactivity**
 - **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Conditions to avoid** No further relevant information available.
 - **Incompatible materials:**
 - acids
 - metals
 - NH_x
 - oxidizing agents
 - > forms heat
 - **Hazardous decomposition products:** see chapter 5
-

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

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

Oral	LD50	2849 mg/kg (rat) (calc.)
------	------	-----------------------------

- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** slight irritations possible
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures should be adhered to general rules for handling chemicals.
-

* 12 Ecological information

- **12.1 Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**

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

Quantitative data on the ecological effect of this product are not available.

(Contd. on page 5)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

Product name: DPD Neutralising

(Contd. of page 4)

- **Behaviour in environmental systems:**
 - **12.3 Bioaccumulative potential** No further relevant information available.
 - **12.4 Mobility in soil** No further relevant information available.
 - **Additional ecological information:**
 - **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
 - **12.5 Results of PBT and vPvB assessment** no data available
 - **vPvB assessments:** no data available
 - **12.6 Other adverse effects** No further relevant information available.
-

* 13 Disposal considerations

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

· European waste catalogue	
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.
 - **Recommended cleaning agent:** Water, if necessary with cleaning agent.
-

* 14 Transport information

- | | |
|---|--|
| · 14.1 UN-Number | |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name | |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es) | |
| · ADR, ADN, IMDG, IATA | |
| · Class | Void |
| · 14.4 Packing group | |
| · ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards: | |
| · Marine pollutant: | No |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |
| · UN "Model Regulation": | - |
-

* 15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Not required.

(Contd. on page 6)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2011

Version number 12

Revision: 13.07.2011

Product name: DPD Neutralising

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

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.

- **Abbreviations and acronyms:**

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

IUCLID (International Uniform Chemical Information Database)

Data arise from reference works and literature.

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

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

Printing date 25.07.2013

Version number 3

Revision: 25.07.2013

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

- **1.1 Product identifier**
- **Product name:** DPD No.1
- **Catalog number:** 95727747, 549-600, 95727761, 549-614
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de



2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.

3 Composition/information on ingredients

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

Dangerous components:

CAS: 139-33-3	disodium dihydrogenethylenediaminetetraacetate	 Xn R20	≤ 2.5%
EINECS: 205-358-3		 Acute Tox. 4, H332	

- **REACH - Pre-registered substances** All components are REACH pre-registered.

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; consult doctor in case of symptoms.

(Contd. on page 2)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.07.2013

Version number 3

Revision: 25.07.2013

Product name: DPD No.1

(Contd. of page 1)

- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
 - **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed**
after swallowing:
gastric or intestinal trouble
cardiovascular disorders
thirst
gastric pain
general feeling of sickness
 - **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.
-

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**
Can be released in case of fire:
Nitrogen oxides (NO_x)
Carbon monoxide (CO)
Sulphur dioxide (SO₂)
Sulphur oxides (SO_x)
Phosphorus oxides (P_xO_x)
Dipotassium oxide
Sodium oxide
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Avoid causing dust.
 - **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
 - **6.4 Reference to other sections** No dangerous materials are released.
-

7 Handling and storage

- **7.1 Precautions for safe handling** Prevent formation of dust.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.

(Contd. on page 3)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.07.2013

Version number 3

Revision: 25.07.2013

Product name: DPD No.1

(Contd. of page 2)

- Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 13
 - **7.3 Specific end use(s)** No further relevant information available.
-

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P1
 - **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
 - **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≤ 1 (>10 min)
 - **Eye protection:**
use against the effects of fumes / dust
Safety glasses
 - **Body protection:** Protective work clothing.
-

9 Physical and chemical properties

- | | |
|---|-----------|
| • 9.1 Information on basic physical and chemical properties | |
| • Appearance: | |
| Form: | Tablets |
| Colour: | White |
| Odour: | Odourless |
| • pH-value (13.5 g/l) at 20 °C: 6.2 | |
| • Melting point/Melting range: Not determined | |
| • Boiling point/Boiling range: Not applicable | |
| • Flash point: Not applicable | |
| • Danger of explosion: Product is not explosive. | |
| • Density Not determined | |
| • Solubility in / Miscibility with Water: Soluble | |
| • Solvent content: | |
| Organic solvents: | 0.0 % |
| • 9.2 Other information No further relevant information available. | |
-

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.07.2013

Version number 3

Revision: 25.07.2013

Product name: DPD No.1

(Contd. of page 3)

- **Incompatible materials:**
NHx
oxidizing agents
 - **Hazardous decomposition products:**
carbon monoxide and carbon dioxide
sodium monoxide
see chapter 5
-

11 Toxicological information

- **11.1 Information on toxicological effects**
 - **Acute toxicity:**
Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.
 - **Primary irritant effect:**
 - **on the skin:** slight irritations possible
 - **on the eye:** slight irritations possible
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The usual precautionary measures should be adhered to general rules for handling chemicals.
 - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available
-

12 Ecological information

- **12.1 Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
 - **12.2 Persistence and degradability** No further relevant information available.
 - **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
 - **12.3 Bioaccumulative potential**
Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.
 - **Behaviour in environmental systems:**
 - **12.4 Mobility in soil** No further relevant information available.
 - **Ecotoxicological effects:**
 - **Remark:**
Toxic for fish:
sulphates > 7 g/l
 - **Bacterial toxicity:** sulphates toxic > 2.5 g/l
 - **Additional ecological information:**
 - **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
 - **12.5 Results of PBT and vPvB assessment** Not applicable.
 - **12.6 Other adverse effects** No further relevant information available.
-

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

European waste catalogue	
---------------------------------	--

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
----------	--

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.07.2013

Version number 3

Revision: 25.07.2013

Product name: DPD No.1

(Contd. of page 4)

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.
-

14 Transport information

· 14.1 UN-Number · ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **National regulations**
 - **Information about limitation of use:** Not required.
 - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

16 Other information

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

- **Relevant phrases**

H332 Harmful if inhaled.

R20 Harmful by inhalation.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized 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)

- **Sources**

IUCLID (International Uniform Chemical Information Database)

Data arise from reference works and literature.

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



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

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

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

· **1.1 Product identifier**

· **Product name:** DPD No.1 High Calcium

· **Catalog number:** 95727748, 549-601, 95727749, 549-602

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

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

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

· **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

· **1.4 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

2 Hazards identification

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

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

The product is not classified as hazardous according to the CLP regulation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void

· **Information concerning particular hazards for human and environment:** No hazards to be particularly mentioned.

· **2.2 Label elements**

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

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Additional information:**

Safety data sheet available on request.

3 Composition/information on ingredients

· **3.2 Mixtures**

· **Description:** Mixture of organic and inorganic compounds

· **Dangerous components:**

CAS: 139-33-3	disodium dihydrogenethylenediaminetetraacetate	Xn R20	2.5-5%
EINECS: 205-358-3		Acute Tox. 4, H332	

· **REACH - Pre-registered substances** All components are REACH pre-registered.

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

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

Product name: DPD No.1 High Calcium

(Contd. of page 1)

* 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; consult doctor in case of symptoms.

· **After skin contact** Instantly wash with water and soap and rinse thoroughly.

· **After eye contact**

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

· **After swallowing**

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

In case of persistent symptoms consult doctor.

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

After swallowing of large amounts:

thirst

sickness

vomiting

cardiovascular disorders

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

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

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

Can be released in case of fire:

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Sulphur dioxide (SO₂)

Phosphorus oxides (P_xO_x)

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.

* 6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Avoid causing dust.

· **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:

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

· 6.4 Reference to other sections

No dangerous materials are released.

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

7 Handling and storage

· **7.1 Precautions for safe handling** No special precautions necessary if used correctly.

· **Information about protection against explosions and fires:** The product is not flammable

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

Product name: DPD No.1 High Calcium

(Contd. of page 2)

- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class 13**
 - **7.3 Specific end use(s)** No further relevant information available.
-

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 - Wash hands during breaks and at the end of the work.
 - Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P1
 - **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
 - **Material of gloves**
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
 - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - Value for the permeation: Level ≤ 1 (>10 min)
 - **Eye protection:**
 - Safety glasses
 - use against the effects of fumes / dust
 - **Body protection:** Protective work clothing.
-

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

- | | |
|--|---------------------------|
| · Appearance: | |
| Form: | Tablets |
| Colour: | White |
| · Odour: | Odourless |
| · Odour threshold: | Not determined. |
| · pH-value at 20 °C: | 6.2 |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 300 °C |
| · Flash point: | Not applicable |
| · Inflammability (solid, gaseous) | Not determined. |
| · Danger of explosion: | Product is not explosive. |
| · Critical values for explosion: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| · Density | Not determined |
-

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

Product name: DPD No.1 High Calcium

(Contd. of page 3)

· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Soluble
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· dynamic:	Not applicable.
· kinematic:	Not applicable.
· Solvent content:	
· Organic solvents:	0.0 %
· Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - aluminium
 - NH_x
- **Hazardous decomposition products:**
 - see chapter 5
 - sodium monoxide

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
 - **on the skin:** DPD may cause allergic skin reaction
 - **on the eye:** irritating effect possible
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available

* 12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - The following statements refer to the individual components.
- **12.3 Bioaccumulative potential**
 - Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
 - Toxic for fish:
 - sulphates > 7 g/l

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

Product name: DPD No.1 High Calcium

(Contd. of page 4)

- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Additional ecological information:**

· COD-value:
139-33-3 disodium dihydrogenethylenediaminetetraacetate
COD 0.59 g/g (.)

- **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.

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

- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

· European waste catalogue
16 05 09 discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

*14 Transport information

· 14.1 UN-Number	Void
· ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name	Void
· ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	Void
· ADR, ADN, IMDG, IATA	Void
· Class	Void
· 14.4 Packing group	Void
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	No
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Not required.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 4

Revision: 07.08.2013

Product name: DPD No.1 High Calcium

(Contd. of page 5)

• Relevant phrases

H332 Harmful if inhaled.

R20 Harmful by inhalation.

• Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized 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)

• Sources Data arise from reference works and literature.**• * Data compared to the previous version altered.**

GB

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

Printing date 18.07.2013

Version number 2

Revision: 18.07.2013

* 1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Product name:** **DPD No.3**

· **Catalog number:** 95727750, 549-603, 95727765, 549-618

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

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

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

· **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

· **1.4 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

2 Hazards identification

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

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

The product is not classified as hazardous according to the CLP regulation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void

· **Information concerning particular hazards for human and environment:** No hazards to be particularly mentioned.

· **2.2 Label elements**

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

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

* 3 Composition/information on ingredients

· **3.2 Mixtures**

· **Description:** mixture contains inorganic compounds

· **Dangerous components:** Void

· **REACH - Pre-registered substances** All components are REACH pre-registered.

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; consult doctor in case of symptoms.

· **After skin contact** Instantly rinse with water.

· **After eye contact**

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

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed**
After swallowing of large amounts:
sickness
vomiting
drop in blood pressure
absorption
 - **Danger** Danger of disturbed cardiac rhythm.
 - **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.
-

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**
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
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.
-

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid causing dust.
Wear protective equipment. Keep unprotected persons away.
 - **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:**
Collect mechanically.
Ensure adequate ventilation.
Dispose of contaminated material as waste according to item 13.
 - **6.4 Reference to other sections** No dangerous materials are released.
-

* 7 Handling and storage

- **7.1 Precautions for safe handling** Prevent formation of dust.
 - **Information about protection against explosions and fires:** The product is not flammable
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 13
 - **7.3 Specific end use(s)** No further relevant information available.
-

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8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Do not eat, drink or smoke while working.
Wash hands during breaks and at the end of the work.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≤ 1 (>10 min)
- **Eye protection:**
use against the effects of fumes / dust
Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

- | | |
|--|--|
| · 9.1 Information on basic physical and chemical properties | |
| · Appearance: | |
| Form: | Tablets |
| Colour: | White |
| Odour: | Odourless |
| · pH-value (13 g/l) at 20 °C: | 6.3 |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 1330 °C |
| · Flash point: | Not applicable |
| · Danger of explosion: | Product is not explosive. |
| · Density at 20 °C | 2.160 g/cm ³ |
| · Solubility in / Miscibility with Water: | Soluble |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| Solids content: | 100.0 % |
| · 9.2 Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
alkali metals
acids
oxidizing agents
--> forms heat

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 · **Hazardous decomposition products:** see chapter 5

11 Toxicological information

 · **11.1 Information on toxicological effects**

 · **Acute toxicity:**

Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.

 · **Primary irritant effect:**

 · **on the skin:** slight irritations possible

 · **on the eye:** Irritant effect.

 · **Sensitization:** Sensitizing effect by skin contact is possible by prolonged/repeated exposure.

 · **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures should be adhered to general rules for handling chemicals.

 · **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

CAS-Nr. 7447-40-7:

Bacterial mutagenicity: Salmonella typhimurium - negative (NTP)

 Mutagenicity (mammal cell test): chromosome aberration positiv (NTP)

12 Ecological information

 · **12.1 Toxicity**

 · **Aquatic toxicity:** No further relevant information available.

 · **12.2 Persistence and degradability** No further relevant information available.

 · **Other information:**

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

Quantitative data on the ecological effect of this product are not available.

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

 · **Behaviour in environmental systems:**

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

 · **Additional ecological information:**

 · **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

 · **12.5 Results of PBT and vPvB assessment** no data available

 · **vPvB assessments:** no data available

 · **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

 · **13.1 Waste treatment methods**

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

 · **European waste catalogue**

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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 · **Uncleaned packagings:**

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

 · **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

 · **14.1 UN-Number**

 · **ADR, ADN, IMDG, IATA**

 Void

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· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **National regulations**
 - **Information about limitation of use:** Not required.
 - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

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.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organization
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized 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)

- **Sources**

NTP (National Toxicology Program)
 GESTIS-Stoffdatenbank
 Data arise from reference works and literature.

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



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

Printing date 19.01.2011

Version number 3

Revision: 19.01.2011

* 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier** Reagent for water analysis
- **Product name:** DPD No. 4
- **Catalog number:**
95727751, 549-604
- **Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE - 44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 231 945100
e-mail: sales@tintometer.de

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard-determining components of labelling:** Void
- **Hazard statements** Void
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

* 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of organic and inorganic compounds

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Product name: DPD No. 4

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- **Dangerous components:** Void
 - **REACH - Pre-registered substances** All components are REACH pre-registered.
-

4 First aid measures

- **Description of first aid measures**
 - **General information** Instantly remove any clothing soiled by the product.
 - **After inhalation** Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact** Instantly wash with water and soap and rinse thoroughly.
 - **After eye contact**
Rinse opened eye for several minutes (at least 10 min) under running water.
Seek immediate medical advice.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **Most important symptoms and effects, both acute and delayed**
after swallowing:
irritations
thirst
gastric pain
general feeling of sickness
-

* 5 Firefighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
nitrogen oxides (NO_x)
Carbon monoxide (CO)
Sulphur dioxide (SO₂)
iodine compounds
Phosphorus oxides (P_xO_x)
dipotassium oxide
combustible
 - **Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Ambient fire may liberate hazardous vapours.
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.
-

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid causing dust.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.

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Product name: DPD No. 4

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- **Reference to other sections** No dangerous materials are released.
-

7 Handling and storage

- **Handling**
 - **Precautions for safe handling** Prevent formation of dust.
 - **Information about protection against explosions and fires:** No special measures required.
 - **Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
 - **Recommended storage temperature:** 20°C +/- 5°C
-

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 - Wash hands during breaks and at the end of the work.
 - Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P1
 - **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
 - **Material of gloves**
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - Value for the permeation: Level ≥ 1 (>10 min)
 - **Eye protection:**
 - Safety glasses
 - use against the effects of fumes / dust
 - **Body protection:** Protective work clothing.
-

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
 - **Appearance:**

Form:	Tablets
Colour:	White
Odour:	Odourless
-

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Product name: DPD No. 4

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· pH-value at 20°C:	6.2
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	1330°C Not applicable
· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density	Not determined
· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %

10 Stability and reactivity

- **Reactivity**
 - **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Incompatible materials:**
 - metals
 - NH_x
 - oxidizing agents
 - **Hazardous decomposition products:**
 - carbon monoxide and carbon dioxide
 - see chapter 5
-

*11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.
 - **Primary irritant effect:**
 - **on the skin:** slight irritations possible
 - **on the eye:** slight irritations possible
 - **Sensitization:** No sensitizing effect known.
 - **Subacute to chronic toxicity:** iodide: chronic hypothyroidism
 - **Additional toxicological information:**
 - The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available
-

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Version number 3

Revision: 19.01.2011

Product name: **DPD No. 4**

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12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability**
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential**
Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.
- **Ecotoxicological effects:**
- **Remark:**
Toxic for fish:
sulphates > 7 g/l
The following applies to iodides in general: biological effects:
Crustaceans Daphnia Magna EC50 = 2.7 mg/l
Protozoa E. Sulcatum toxic as from 40 mg/l
- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
- **Results of PBT and vPvB assessment** no data available
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **vPvB assessments:** no data available

13 Disposal considerations

- **Waste treatment methods**

- **European waste catalogue**

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
----------	--

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

- **Land transport ADR/RID (cross-border)**

- **ADR/RID-GGVS/E Class:** -

- **Maritime transport IMDG:**

- **IMDG Class:** -

- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**

- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -

- **Special precautions for user** Not applicable.

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Product name: DPD No. 4

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Not required.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

- **Abbreviations and acronyms:**

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

- **Sources** Data arise from reference works and literature.
- *** Data compared to the previous version altered.**

GB

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

Printing date 09.10.2014

Version number 12

Revision: 09.10.2014

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

1.1 Product identifier

Product name: **Fluoride Standard 1 mg/l**

Catalog number: 95727758, 549-611

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the preparation: Standard Solution for calibration purposes

1.3 Details of the supplier of the safety data sheet

Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified as hazardous according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void

Information concerning particular hazards for human and environment:

The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.

2.2 Label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements Void

SECTION 3: Composition/information on ingredients

3.1 Substances aqueous solution

3.2 Mixtures

Dangerous components: Void

REACH - Pre-registered substances All components are REACH pre-registered.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information No special measures required.

After inhalation Supply fresh air; consult doctor in case of symptoms.

After skin contact Instantly rinse with water.

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Product name: Fluoride Standard 1 mg/l

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- **After eye contact** Rinse opened eye for several minutes (at least 10 min) under running water.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
After swallowing of large amounts:
sickness
vomiting
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
 - **5.3 Advice for firefighters**
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **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**
Wear protective equipment. Keep unprotected persons away.
 - **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Dilute with much water.
 - **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, universal binders).
 - **6.4 Reference to other sections** No dangerous materials are released.
-

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
 - **Information about protection against explosions and fires:** The product is not flammable
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from humidity and keep away from water.
Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 12
 - **7.3 Specific end use(s)** No further relevant information available.
-

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Revision: 09.10.2014

Product name: Fluoride Standard 1 mg/l

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- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Protection of hands:**
No chemical-protective gloves required.
Preventive skin protection by use of skin-protecting agents is recommended.
- **Eye protection:** Safety glasses recommended during refilling.
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

Form:	Fluid
Colour:	Colourless
Odour:	Odourless

· pH-value at 20 °C: 7

· Melting point/Melting range: 0 °C
 · Boiling point/Boiling range: 100 °C

· Flash point: Not applicable

· Danger of explosion: Product is not explosive.

· Density at 20 °C: 1 g/cm³
 · Vapour density: Not determined.
 · Evaporation rate: Not determined.

· Solubility in / Miscibility with
 Water: Fully miscible

· Solvent content:
 Organic solvents: 0.0 %
 Water: < 100 %

· Solids content: < 2 %

· 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** see chapter 5

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

· Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** slight irritations possible
- **Sensitisation:** No sensitizing effect known.

· Subacute to chronic toxicity:

chronic ingestion: contains fluoride which may affect behaviour / central nervous system, respiration, cardiovascular system, liver, urinary system, brain, metabolism
 chronic toxic effect: fluorosis

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Product name: Fluoride Standard 1 mg/l

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Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The material is not subject to classification according to EC lists in the last version.

The usual precautionary measures should be adhered to general rules for handling chemicals.

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available

* SECTION 12: Ecological information

12.1 Toxicity

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **Other information:** Quantitative data on the ecological effect of this product are not available.

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

Behaviour in environmental systems:

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

Additional ecological information:

· **General notes:** Mixture: Generally not hazardous for water.

· **12.5 Results of PBT and vPvB assessment** no data available

· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

European waste catalogue

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
----------	--

Uncleaned packagings:

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

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

14.1 UN-Number

· **ADR, ADN, IMDG, IATA** Void

14.2 UN proper shipping name

· **ADR, ADN, IMDG, IATA** Void

14.3 Transport hazard class(es)

· **ADR, ADN, IMDG, IATA**

· **Class** Void

14.4 Packing group

· **ADR, IMDG, IATA** Void

14.5 Environmental hazards:

· **Marine pollutant:** No

14.6 Special precautions for user

Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:

Not dangerous according to the above specifications.

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Product name: Fluoride Standard 1 mg/l

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **Water hazard class:** Generally not hazardous for water.
- **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.

- **Recommended restriction of use:** professional/industrial use only
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 - ICAO: International Civil Aviation Organisation
 - ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 - EC50: effective concentration, 50 percent (in vivo)
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - 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)
- **Sources**
 - Data arise from reference works and literature.
 - IUCLID (International Uniform Chemical Information Database)
 - NTP (National Toxicology Program)
- *** Data compared to the previous version altered.**

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

Printing date 06.03.2015

Version number 3

Revision: 06.03.2015

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

- **1.1 Product identifier**
- **Product name:** Glycine
- **Catalog number:** 95727752, 549-605, 95727766, 549-619
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Preparation contains organic compounds.
- **Dangerous components:** Void
- **REACH - Pre-registered substances** All components are REACH pre-registered.

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; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.

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Product name: Glycine

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
After swallowing of large amounts:
thirst
diarrhoea
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** CO₂, extinguishing powder or water jet. Fight larger fires with water jet.
 - **5.2 Special hazards arising from the substance or mixture**
combustible
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NO_x)
Sulphur dioxide (SO₂)
nitrous gases
carbon monoxide (CO) and carbon dioxide (CO₂)
 - **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**
Wear protective equipment. Keep unprotected persons away.
 - **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
 - **6.4 Reference to other sections**
See Section 7 for information on safe handling
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**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Dust can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** store away from solvents
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
Protect from the effects of light.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 11

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Product name: **Glycine**

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- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves** Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
- **Eye protection:**
Safety glasses
use against the effects of fumes / dust
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Appearance:**
 - **Form / Physical state:** Tablets
 - **Colour:** White
 - **Odour:** Odourless
- **pH-value at 20 °C:** 5.8
- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** Not applicable
- **Flash point:** Not applicable
- **Danger of explosion:** The following applies in general to flammable organic substances / preparations: Dust explosion possible if in powder or granular form (fine distribution), mixed with air.
- **Density at 20 °C** 1.48 g/cm³
- **Vapour density** Not applicable.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with**
 - **Water:** Soluble
- **Solvent content:**
 - **Organic solvents:** 0.0 %
- **Solids content:** 100.0 %
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
halogen compounds

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Product name: Glycine

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combustible substances
oxidizing agents

- **Hazardous decomposition products:**

nitrous gases
see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **Primary irritant effect:**

- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.

- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures should be adhered to general rules for handling chemicals.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **12.2 Persistence and degradability** No further relevant information available.

- **Other information:** Quantitative data on the ecological effect of this product are not available.

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

- **Behaviour in environmental systems:**

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

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

- **vPvB assessments:** no data available

- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation** Disposal must be made according to official regulations.

- **European waste catalogue**

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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- **Uncleaned packagings:**

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

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, ADN, IMDG, IATA**

Void

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Product name: Glycine

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· 14.2 UN proper shipping name	
· ADR, ADN, IMDG	Void
· IATA	Void
	-
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **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.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

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)

- **Sources** Data arise from reference works and literature.

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

Printing date 28.05.2014

Version number 22

Revision: 28.05.2014

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

- **1.1 Product identifier**
- **Product name:** Hydrogenperoxide LR
- **Catalog number:** 95727762, 549-615
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.

3 Composition/information on ingredients

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

Dangerous components:

CAS: 7631-95-0	Sodium molybdate, anhydrous	2.5-5%
EINECS: 231-551-7	☒ Xn R20; ☒ Xi R36/37/38	
	☒ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

Safety data sheet

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Version number 22

Revision: 28.05.2014

Product name: Hydrogenperoxide LR

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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; consult doctor in case of symptoms.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.

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

irritations
 After swallowing of large amounts:
 thirst
 gastric pain
 drop in blood pressure
 absorption
 cardiovascular disorders

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

* 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

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

Carbon monoxide (CO)

Sulphur dioxide (SO₂)

Sulphur oxides (SO_x)

nitrogen oxides (NO_x)

iodine compounds

Hydrogen iodide (HI)

Phosphorus oxides (P_xO_x)

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.

* 6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

- **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:

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

- **6.4 Reference to other sections** No dangerous materials are released.
-

7 Handling and storage

· 7.1 Precautions for safe handling

No special precautions necessary if used correctly.

Prevent formation of dust.

- **Information about protection against explosions and fires:** The product is not flammable

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Product name: Hydrogenperoxide LR

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - This product is hygroscopic.
 - Protect from the effects of light.
 - Protect from heat and direct sunlight.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class 13**
- **7.3 Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

· 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

7631-95-0 Sodium molybdate, anhydrous (2.5-5%)

OEL (Sweden)	Long-term value: 5 mg/m ³ som Mo; totaldamm
--------------	---

- **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P1

· Protection of hands:

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

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)

· Eye protection:

Safety glasses
use against the effects of fumes / dust

- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

Form:	Tablets
Colour:	Light grey
Odour:	Odourless

- **pH-value (12.5 g/l) at 20 °C:** 5.4-6

- **Melting point/Melting range:** Not determined

- **Boiling point/Boiling range:** 891 °C

- **Flash point:** Not applicable

- **Danger of explosion:** Product is not explosive.

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Version number 22

Revision: 28.05.2014

Product name: Hydrogenperoxide LR

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· Density	Not determined
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

*10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - alkali metals
 - peroxides
 - oxidizing agents
- **Hazardous decomposition products:**
 - carbon monoxide and carbon dioxide
 - see chapter 5

*11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:		
7631-95-0 Sodium molybdate, anhydrous		
Oral	LD50	4000 mg/kg (rat)
Inhalative	LC50	1.93 mg/l/4h (rat) (ECHA)

- **Primary irritant effect:**
 - **on the skin:** slight irritations possible
 - **on the eye:** slight irritations possible
- **Sensitization:**
 - Sensitizing effect by skin contact is possible by prolonged/repeated exposure.
 - Sensitization possible in predisposed persons (MERCK).
- **Subacute to chronic toxicity:** iodide: chronic hypothyroidism
- **Additional toxicological information:**
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - CAS-No. 7681-11-0:
 - Bacterial mutagenicity: Salmonella typhimurium - negative (NTP)

*12 Ecological information

- **12.1 Toxicity**

· Aquatic toxicity:		
7631-95-0 Sodium molybdate, anhydrous		
LC50	800 mg/l/96h	(Oncorhynchus mykiss)

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according to 1907/2006/EC, Article 31

Printing date 28.05.2014

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Revision: 28.05.2014

Product name: Hydrogenperoxide LR

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- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
- **12.3 Bioaccumulative potential** Phosphates and/or nitrogen compounds: may contribute to the eutrophication of water supplies
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
Toxic for fish:
NH₄⁺ > 0.3 mg/l
sulphates > 7 g/l
molybdenum compounds in general: > 25 mg/l
The following applies to iodides in general: biological effects:
Crustaceans Daphnia Magna EC50 = 2.7 mg/l
Protozoa E. Sulcatum toxic as from 40 mg/l
- **Algae toxicity:** molybdenum compounds: Sc. quadricauda toxic from 54 mg/l
- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Protozoa:** molybdenum compounds: Microregma toxic from 27 mg/l
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

*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.
Disposal must be made according to official regulations.

· European waste catalogue	
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class 	Void
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 28.05.2014

Version number 22

Revision: 28.05.2014

Product name: Hydrogenperoxide LR

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· Transport/Additional information:	Not dangerous according to the above specifications.
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* 15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

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

- **Relevant phrases**

H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.

R20 Harmful by inhalation.
 R36/37/38 Irritating to eyes, respiratory system and skin.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized 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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

- **Sources**

ECOTOX Database
 GESTIS-Stoffdatenbank
 Data arise from reference works and literature.
 IUCLID (International Uniform Chemical Information Database)
 CSST (Service du répertoire toxicologique)

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

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.05.2011

Version number 2

Revision: 18.05.2011

* 1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier** Reagent for water analysis

· **Product name:** Iron LR

· **Catalog number:**
95727756, 549-609

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

· **Supplier:**

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

phone: +49 231 945100
e-mail: sales@tintometer.de

· **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

· **Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 2 Hazards identification

· **Classification of the substance or mixture**

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



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36: Irritating to eyes.



Xi; Sensitising

R43: May cause sensitisation by skin contact.

· **Label elements**

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

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

· **Hazard pictograms** GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**

calcium thioglycollate trihydrate

· **Hazard statements**

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 2

Revision: 18.05.2011

Product name: Iron LR

(Contd. of page 1)

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture of organic and inorganic compounds

Dangerous components:

CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9	adipic acid ☒ Xi R36 ☒ Eye Irrit. 2, H319	30-40%
CAS: 65208-41-5 EINECS: 249-881-5	calcium thioglycollate trihydrate ☒ Xn R22; ☒ Xi R37; ☒ Xi R43 ☒ Acute Tox. 4, H302; Skin Sens. 1, H317; STOT SE 3, H335	≤ 2.5%

REACH - Pre-registered substances All components are REACH pre-registered.

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

4 First aid measures

Description of first aid measures

General information Instantly remove any clothing soiled by the product.

After inhalation Supply fresh air and call for doctor for safety reasons.

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 10 min) under running water.

Call a doctor immediately.

After swallowing

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

Seek medical treatment.

Most important symptoms and effects, both acute and delayed

after swallowing:

mucous membrane irritation

thirst

general feeling of sickness

after inhalation:

irritations

coughing

breathing difficulty

Danger risk of skin sensitization

5 Firefighting measures

Extinguishing media

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

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according to 1907/2006/EC, Article 31

Printing date 18.05.2011

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Product name: Iron LR

(Contd. of page 2)

- **Special hazards arising from the substance or mixture**

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

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Sulphur dioxide (SO₂)

Sulphur oxides (SO_x)

combustible

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

- **Additional information**

Ambient fire may liberate hazardous vapours.

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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Avoid causing dust.

Wear protective equipment. Keep unprotected persons away.

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

- **Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

7 Handling and storage

- **Handling**

- **Precautions for safe handling**

Keep containers tightly sealed.

Prevent formation of dust.

- **Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:**

Store in cool location.

Unsuitable material for container: steel.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:**

Keep container tightly sealed.

Protect from heat and direct sunlight.

Store under dry conditions.

Protect from humidity and keep away from water.

Protect from the effects of light.

- **Recommended storage temperature:** 20°C +/- 5°C

- **Storage class** 10-13

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.05.2011

Version number 2

Revision: 18.05.2011

Product name: Iron LR

(Contd. of page 3)

- **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.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Avoid contact with the eyes and skin.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
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**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 1 (>10 min)
- **Eye protection:**
Tightly sealed safety glasses.
use against the effects of fumes / dust
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Appearance:	
· Form:	Tablets
· Colour:	Yellow tint
· Odour:	Characteristic
· pH-value at 20°C:	3.5
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	265°C Not applicable
· Flash point:	> 100°C
· Danger of explosion:	Product is not explosive.
· Density	Not determined
· Solubility in / Miscibility with	
· Water:	Soluble
· Solvent content:	
· Organic solvents:	0.0 %
· Solids content:	100.0 %

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Safety data sheet

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Version number 2

Revision: 18.05.2011

Product name: Iron LR

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10 Stability and reactivity

- **Reactivity**
 - **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Possibility of hazardous reactions**
 - Reacts with reducing agents
 - Reacts with strong oxidizing agents
 - **Incompatible materials:**
 - alkalis
 - halogen compounds
 - combustible substances
 - oxidizing agents
 - **Hazardous decomposition products:**
 - hydrogen sulphide
 - see chapter 5
-

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

LD/LC50 values that are relevant for classification:		
65208-41-5 calcium thioglycollate trihydrate		
Oral	LD50	352 mg/kg (rat) (Merck)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
 - **Sensitization:** Sensitizing effect by skin contact is possible by prolonged/repeated exposure.
 - **Subacute to chronic toxicity:**
 - CAS-No. 124-04-9:
 - Sensitization test (guinea pig): negative (IUCLID)
 - **Additional toxicological information:** Irritant
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available
-

12 Ecological information

- **Toxicity**

Acquatic toxicity:	
124-04-9 adipic acid	
EC50	86 mg/l/48h (Daphnia magna) (MERCK-OECD 202)
LC50	511 mg/l/48h (Leuciscus idus) 97 mg/l/96h (Pimephales promelas) (ECOTOX)

- **Persistence and degradability**

- **Other information:**

Quantitative data on the ecological effect of this product are not available.

The following statements refer to the individual components.

CAS-No. 124-04-9: 100% / 28 d

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.05.2011

Version number 2

Revision: 18.05.2011

Product name: Iron LR

(Contd. of page 5)

· Behaviour in environmental systems:	
124-04-9 adipic acid	
log P(o/w)	0.081 (25°C) (.) (MERCK-OECD 107)

- **Ecotoxicological effects:**
- **Remark:** Harmful effect due to pH shift.

· Alga toxicity:	
124-04-9 adipic acid	
IC50	31 mg/l/72h (Desmodesmus subspicatus) (IUCLID)

· Bacterial toxicity:	
124-04-9 adipic acid	
EC50	92 mg/l/17h (Pseudomonas putida) (IUCLID)

- **Additional ecological information:**
- **General notes:**
Water danger class 3 (German Regulation) (Self-assessment acc. VwVwS Annex 4): extremely hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into soil.
- **Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available

13 Disposal considerations

- **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 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

· Land transport ADR/RID (cross-border)	
· ADR/RID-GGVS/E Class: -	
· Maritime transport IMDG:	
· IMDG Class:	-
· Marine pollutant:	No
· Air transport ICAO-TI and IATA-DGR:	
· ICAO/IATA Class:	-
· UN "Model Regulation": -	
· Special precautions for user Not applicable.	

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.05.2011

Version number 2

Revision: 18.05.2011

Product name: Iron LR

(Contd. of page 6)

 · **Transport/Additional information:** Not dangerous according to the above specifications.

15 Regulatory information

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

 · **National regulations**

 · **Information about limitation of use:**

 Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC)

 Employment restrictions concerning young persons must be observed.

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

16 Other information

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

 · **Relevant phrases**

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

 H335 May cause respiratory irritation.

R22 Harmful if swallowed.

R36 Irritating to eyes.

R37 Irritating to respiratory system.

 R43 May cause sensitisation by skin contact.

 · **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

 LD50: Lethal dose, 50 percent

 · **Sources**

IUCLID (International Uniform Chemical Information Database)

ECOTOX Database

 Data arise from reference works and literature.

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

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

Printing date 02.07.2014

Version number 32

Revision: 02.07.2014

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

1.1 Product identifier

• **Product name:** Manganese LR 1

• **Catalog number:** 95727759, 549-612

• **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

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

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

• **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

• **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

• **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

• **1.4 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

2 Hazards identification

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

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



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

• **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36: Irritating to eyes.

• **2.2 Label elements**

• **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.

• **Hazard pictograms** GHS07

• **Signal word** Warning

• **Hazard statements**

H319 Causes serious eye irritation.

• **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

3 Composition/information on ingredients

• **3.2 Mixtures**

• **Description:** Mixture of organic and inorganic compounds

(Contd. on page 2)

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 02.07.2014

Version number 32

Revision: 02.07.2014

Product name: Manganese LR 1

(Contd. of page 1)

· Dangerous components:		
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8	ammonium chloride ☒ Xn R22; ☒ Xi R36 ☒ Acute Tox. 4, H302; Eye Irrit. 2, H319	40-50%
CAS: 62479-72-5 EINECS: 222-440-4	formaldehyde oxime trimer hydrochloride ☒ Xi R36/37/38 ☒ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	2.5-5%

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

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 and call for doctor for safety reasons.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes (min 10 min.) under running water. Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting.
Seek medical treatment.
- **4.2 Most important symptoms and effects, both acute and delayed:**
mucous membrane irritation
irritations
after inhalation:
coughing
breathing difficulty
after swallowing:
absorption
sickness
vomiting
diarrhoea
After swallowing of large amounts:
drop in blood pressure
respiratory paralysis
CNS disorders
cramps
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Hydrogen chloride (HCl)
ammonia (NH₃)
nitrogen oxides (NO_x)
- **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.

— GB —
(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 02.07.2014

Version number 32

Revision: 02.07.2014

Product name: **Manganese LR 1**

(Contd. of page 2)

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

* 7 Handling and storage

- **7.1 Precautions for safe handling** Prevent formation of dust.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store in cool location.
Unsuitable material for container: aluminium.
Cu, Pb, Fe
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from the effects of light.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 13
- **7.3 Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1 Control parameters**

· Components with limit values that require monitoring at the workplace:

12125-02-9 ammonium chloride (40-50%)

WEL (Great Britain)	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³
---------------------	---

· DNELs

12125-02-9 ammonium chloride

Oral	Consumer DNEL / longterm / Systemic effects	55.2 mg/kg (.) (Merck)
Dermal	Consumer DNEL / longterm / Systemic effects	55.2 mg/kg (.) (Merck)
	Worker DNEL / longterm / Systemic effects	128.9 mg/kg (.) (Merck)
Inhalative	Consumer DNEL / longterm / Systemic effects	9.4 mg/m ³ (.) (Merck)
	Worker DNEL / longterm / Systemic effects	43.97 mg/m ³ (.) (Merck)

- **Additional information:** The lists that were valid during the compilation were used as basis.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 32

Revision: 02.07.2014

Product name: Manganese LR 1

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- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
 Avoid contact with the eyes and skin.
 Take off immediately all contaminated clothing
 Wash hands during breaks and at the end of the work.
 Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
 Protective gloves.
 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**
 The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 Value for the permeation: Level = 1 (< 10 min)
- **Eye protection:**
 Tightly sealed safety glasses.
 use against the effects of fumes / dust
- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form:	Tablets
Colour:	White
· Odour:	Odourless
· Odour threshold:	Not determined.
· pH-value at 20 °C:	2.7
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	Not determined
· Flash point:	Not applicable
· Inflammability (solid, gaseous)	Not determined.
· Danger of explosion:	Product is not explosive.
· Critical values for explosion:	
Lower:	Not determined.
Upper:	Not determined.
· Density	Not determined
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Soluble
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %

(Contd. on page 5)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 02.07.2014

Version number 32

Revision: 02.07.2014

Product name: Manganese LR 1

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· 9.2 Other information	No further relevant information available.
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* 10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - alkali metals
 - alkali compounds
 - alkalis
 - acids
 - halogen compounds
 - chlorine
 - oxidizing agents
 - > forms heat
- **Hazardous decomposition products:**
 - ammonia (NH₃)
 - Hydrogen chloride (HCl)
 - see chapter 5

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
Oral	CLP ATE _(MX)	> 2000 mg/kg (.)

12125-02-9 ammonium chloride		
Oral	LD50	1440 mg/kg (rat) (MERCK)

- **Primary irritant effect:**
- **on the skin:** slight irritations possible
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Subacute to chronic toxicity:**
 - repeated skin exposure can produce local skin destruction or dermatitis
 - chronic: dermatitis
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - CAS-No.: 12125-02-9
 - Bacterial mutagenicity: Ames test - negative (IUCLID)

12 Ecological information

- **12.1 Toxicity**

· Aquatic toxicity:		
12125-02-9 ammonium chloride		
EC50	> 100 mg/l/48h	(Daphnia magna)
LC50	209 mg/l/96h	(Cyprinus carpio) (IUCLID)

- **12.2 Persistence and degradability** No further relevant information available.

- **Other information:**

Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.

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

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· Behaviour in environmental systems:	
12125-02-9 ammonium chloride	
log P(o/w)	-4.37 (.)
· 12.4 Mobility in soil No further relevant information available.	
· Ecotoxicological effects:	
· Remark: Toxic for fish: NH ₄ ⁺ > 0.3 mg/l	
· Additional ecological information:	
· General notes: Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water. Do not allow product to reach ground water, water bodies or sewage system.	
· 12.5 Results of PBT and vPvB assessment no data available	
· 12.6 Other adverse effects No further relevant information available.	

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

* 14 Transport information

· 14.1 UN-Number	
· ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name	
· ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	
	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
	Not applicable.
· Transport/Additional information:	
	Not dangerous according to the above specifications.

* 15 Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
· Labelling according to Regulation (EC) No 1272/2008	
· Hazard-determining components of labelling: ammonium chloride	
· Information about limitation of use: Employment restrictions concerning young persons must be observed.	

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

*16 Other information

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

- **Relevant phrases**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
.....	
R22	Harmful if swallowed.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organization
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

- **Sources**

Data arise from reference works and literature.
 NTP (National Toxicology Program)
 IUCLID (International Uniform Chemical Information Database)

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

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

Printing date 25.11.2011

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* 1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier** Reagent for water analysis
- **Product name:** Manganese LR 2
- **Catalog number:** 549-612, 95727759
- **1.2 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.3 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* 2 Hazards identification

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



GHS05 corrosion

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



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R35: Causes severe burns.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS05, GHS07
- **Signal word** Danger
- **Hazard-determining components of labelling:**
lithium hydroxide
- **Hazard statements**
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

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Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description: Mixture of inorganic compounds

Dangerous components:

CAS: 1310-65-2	lithium hydroxide	 C R35;  Xn R22  Acute Tox. 3, H301;  Skin Corr. 1A, H314	10-20%
EINECS: 215-183-4			

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

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 or oxygen; call for doctor.

In case of unconsciousness bring patient into stable side position for transport.

After skin contact

Instantly rinse with water.

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

After eye contact

Rinse opened eye for several minutes (at least 10 min) under running water.

Call a doctor immediately.

After swallowing

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

Do not induce vomiting; instantly call for medical help.

4.2 Most important symptoms and effects, both acute and delayed

after inhalation:

coughing

breathing difficulty

headache

damage to the affected mucous membranes

after swallowing:

pain

sickness

vomiting

burns

CNS disorders

Danger

Danger of system failure.

Danger of gastric perforation.

Danger of impaired breathing.

Indication of any immediate medical attention and special treatment needed

If swallowed or in case of vomiting, danger of entering the lungs

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 Subsequent observation for pneumonia and pulmonary oedema

* 5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Nitrogen oxides (NO_x)
Hydrogen chloride (HCl)
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.

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid causing dust.
Wear protective equipment. Keep unprotected persons away.
- **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:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Collect mechanically.
- **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.

* 7 Handling and storage

- **Handling**
- **7.1 Precautions for safe handling**
Open and handle container with care.
Prevent formation of dust.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
Do not store together with acids.
Store away from oxidizing agents.
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.

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Protect from the effects of light.

- **Recommended storage temperature:** 20°C +/- 5°C
- **Storage class** 8B
- **7.3 Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

· 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

1310-65-2 lithium hydroxide (10-20%)

 WEL (Great Britain) | Short-term value: 1 mg/m³

- **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

- Keep away from foodstuffs, beverages and food.
- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes and skin.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P2

· Protection of hands:

- Alkaline resistant gloves
- 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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Tightly sealed safety glasses.

- **Body protection:** Alkaline resistant protective clothing

* 9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|----------------|-----------|
| Form: | Tablets |
| Colour: | White |
| Odour: | Odourless |

 · **pH-value (11.7 g/l) at 20°C:** 12.9

 · **Melting point/Melting range:** Not determined

 · **Boiling point/Boiling range:** 925°C

 · **Flash point:** Not applicable

 · **Danger of explosion:** Product is not explosive.

 · **Density at 20°C** 2.091 g/cm³

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· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

* 10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
 - Reacts with metals to form nitrous fumes and hydrogen
 - Reacts with water
 - > forms heat
 - Corrosive action on metals
 - Corrodes aluminium
 - Aqueous solution reacts alkaline.
 - Reacts with light alloys to form hydrogen
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - aluminium
 - zinc
 - organic substances
 - acids
 - oxidizing agents
 - > forms heat
- **Hazardous decomposition products:** see chapter 5

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:		
1310-65-2 lithium hydroxide		
Oral	LD50	210 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Strong caustic effect on skin and mucous membranes.
 - **on the eye:** strong caustic effect.
- **Sensitization:** No sensitizing effect known.
- **Experience with humans:** May cause lung damages.
- **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Corrosive
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
 - The following applies to lithium compounds in general:
 - after absorption: CNS disorders, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance

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 · **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

*12 Ecological information

- **12.1 Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
Methods for the determination of biodegradability are not applicable to inorganic substances.
Does not cause biological oxygen deficit.
- **Behaviour in environmental systems:**
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
Harmful effect due to pH shift.
Forms corrosive mixtures with water even if diluted.
- **Additional ecological information:**
The following applies to lithium compounds in general:
MERCK - biological effects:
fish toxic from 100 mg/l up
Daphnia toxic from 16 mg/ up
plants toxic from 0.2 mg/l up (value calculated as Li)
- **General notes:**
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

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

European waste catalogue	
16 05 07*	discarded inorganic chemicals consisting of or containing dangerous substances

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

- | | |
|--------------------------|--------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN2680 |

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<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	<p>2680 LITHIUM HYDROXIDE, mixture LITHIUM HYDROXIDE, mixture</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<p>8 (C6) Corrosive substances. 8</p>
<ul style="list-style-type: none"> · IMDG, IATA 	<p>8 Corrosive substances. 8</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	<p>II</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	<p>No</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups 	<p>Warning: Corrosive substances. 80 F-A,S-B Alkalis</p>
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Tunnel restriction code 	<p>1 kg E</p>

* 15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

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

- **Relevant phrases**
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.

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R22 Harmful if swallowed.

R35 Causes severe burns.

· Abbreviations and acronyms:

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· Sources

GESTIS-Stoffdatenbank

Data arise from reference works and literature.

· * Data compared to the previous version altered.

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

Printing date 07.08.2013

Version number 2

Revision: 07.08.2013

* 1 Identification of the substance/mixture and of the company/undertaking

· 1.1 Product identifier

· **Product name:** Phenol red Photometer

· **Catalog number:** 95727753, 549-606, 95727767, 549-620

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

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

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

· **Supplier:**

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

· **1.4 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 2 Hazards identification

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

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

The product is not classified as hazardous according to the CLP regulation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void

· **Information concerning particular hazards for human and environment:** No hazards to be particularly mentioned.

· **2.2 Label elements**

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

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

* 3 Composition/information on ingredients

· **3.2 Mixtures**

· **Description:** Mixture of organic and inorganic compounds

· **Dangerous components:** Void

· **REACH - Pre-registered substances** All components are REACH pre-registered.

4 First aid measures

· **4.1 Description of first aid measures**

· **General information** No special measures required.

· **After inhalation** Supply fresh air; consult doctor in case of symptoms.

· **After skin contact** Instantly wash with water and soap and rinse thoroughly.

· **After eye contact**

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

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Product name: Phenol red Photometer

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed**
After swallowing of large amounts:
sickness
vomiting
breathing difficulty
 - **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.
-

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**
Formation of toxic gases is possible during heating or in case of fire.
 - **5.3 Advice for firefighters**
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **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.
-

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Avoid causing dust.
 - **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
 - **6.4 Reference to other sections** No dangerous materials are released.
-

* 7 Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
 - **Information about protection against explosions and fires:** The product is not flammable
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.
Protect from the effects of light.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 13
 - **7.3 Specific end use(s)** No further relevant information available.
-

* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.

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Product name: Phenol red Photometer

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- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≤ 1 (>10 min)
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form:	Tablets
Colour:	Orange
· Odour:	Odourless
· pH-value (12.8 g/l) at 20 °C:	5.1
· Melting point/Melting range:	801 °C
· Boiling point/Boiling range:	1461 °C
· Flash point:	Not applicable
· Inflammability (solid, gaseous)	Product is not inflammable.
· Danger of explosion:	Product is not explosive.
· Density at 20 °C	2.16 g/cm ³
· Settled apparent density at 20 °C	~ 1140 kg/m ³
· Solubility in / Miscibility with Water at 20 °C:	358 g/l
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
alkali metals
--> forms heat
- **Hazardous decomposition products:** see chapter 5

— GB —
(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.08.2013

Version number 2

Revision: 07.08.2013

Product name: Phenol red Photometer

(Contd. of page 3)

* 11 Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:**

Quantitative data on the toxicity of the preparation are not available.

The following statements refer to the individual components.

- **Primary irritant effect:**

- **on the skin:** temporary erythema possible

- **on the eye:** Irritant effect.

- **Sensitization:** No sensitizing effect known.

- **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures should be adhered to general rules for handling chemicals.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

CAS-No. 7647-14-5:

Bacterial mutagenicity: Ames test - negative (IUCLID)

* 12 Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **12.2 Persistence and degradability** No further relevant information available.

- **Other information:** Quantitative data on the ecological effect of this product are not available.

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

- **Behaviour in environmental systems:**

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

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

- **12.5 Results of PBT and vPvB assessment** no data available

- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

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

- **European waste catalogue**

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
----------	--

- **Uncleaned packagings:**

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

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

* 14 Transport information

- **14.1 UN-Number**

- **ADR, ADN, IMDG, IATA**

Void

- **14.2 UN proper shipping name**

- **ADR, ADN, IMDG, IATA**

Void

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GB

Safety data sheet

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Revision: 07.08.2013

Product name: Phenol red Photometer

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· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

* 15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Not required.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 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.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organization
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized 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)

- **Sources**

GESTIS-Stoffdatenbank
 IUCLID (International Uniform Chemical Information Database)
 NTP (National Toxicology Program)

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

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

* 1 Identification of substance:

- **Product name:** Phosphate No.1 LR
- **Catalog number:** 95727764, 549-617
- **Application of the substance / the preparation:** Reagent for water analysis
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.tintometer.de
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **Emergency information:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

2 Hazards identification

- **Hazard designation:**



T Toxic

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.

R 60 May impair fertility.

R 61 May cause harm to the unborn child.

R 41 Risk of serious damage to eyes.

Restricted to professional users.

- **GHS label elements**



Danger

H360 - May damage fertility or the unborn child.



Danger

H318 - Causes serious eye damage.

- **Prevention:**

P281 Use personal protective equipment as required.

P201 Obtain special instructions before use.

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Product name: Phosphate No.1 LR

(Contd. of page 1)

· Response:

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 or doctor/physician.

· Storage:

P405 Store locked up.

· Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

· **Description:** Mixture of organic and inorganic compounds

· Dangerous components:

CAS: 7681-38-1 EINECS: 231-665-7 Index number: 016-046-00-X	sodium bisulfate ☒ Xi; R 41 Danger: ☒ 3.3/1	50-60%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2	boric acid Repr. Cat. 2; ☒ T; R 60-61 Danger: ☒ 3.7/1B	25-35%
CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9	adipic acid ☒ Xi; R 36 Warning: ☒ 3.3/2	10-20%
CAS: 28300-74-5 EINECS: 234-293-3 Index number: 051-003-00-9	potassium antimony(III) oxide tartrate hemihydrate ☒ Xn, ☒ N; R 20/22-51/53 Warning: ☒ 3.1.O/4, 3.1.I/4 ☒ 4.1.C/2	≤ 0.1%

· **REACH - Pre-registered substances** All components are REACH pre-registered.

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

4 First aid measures

· **General information** Instantly remove any clothing soiled by the product.

· After inhalation

Supply fresh air.

Seek medical treatment.

· 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 10 min) under running water.

Call a doctor immediately.

· After swallowing

Seek medical treatment.

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

· The following symptoms may occur:

after inhalation:

mucous membrane irritation

coughing

breathing difficulty

after swallowing:

gastric or intestinal trouble

sickness

vomiting

cramps

(Contd. on page 3)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

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Product name: Phosphate No.1 LR

(Contd. of page 2)

ataxia (impaired locomotor coordination)
 drop in temperature
 CNS disorders
 fatigue
 cardiovascular disorders

5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **Special hazards caused by the material, its products of combustion or resulting gases:**
 Formation of toxic gases is possible during heating or in case of fire.
 Can be released in case of fire
 nitrogen oxides (NO_x)
 Sulphur oxides (SO_x)
 Sodium oxide
 - **Protective equipment:**
 Wear self-contained breathing apparatus.
 Wear full protective suit.
 - **Additional information**
 Ambient fire may liberate hazardous vapours.
 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.
-

6 Accidental release measures

- **Person-related safety precautions:**
 Wear protective equipment. Keep unprotected persons away.
 Avoid causing dust.
 Use breathing protection against the effects of fumes/dust/aerosol.
 - **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
 - **Measures for cleaning/collecting:**
 Dispose of contaminated material as waste according to item 13.
 Collect mechanically.
 Ensure adequate ventilation.
-

7 Handling and storage

- **Handling**
- **Information for safe handling:**
 Open and handle container with care.
 Prevent formation of dust.
- **Information about protection against explosions and fires:** The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Store away from metals.
- **Further information about storage conditions:**
 Protect from heat and direct sunlight.
 Store under dry conditions.
 Protect from humidity and keep away from water.
 This product is hygroscopic.
 Protect from the effects of light.
 Store in a locked cabinet or with access restricted to technical experts or their assistants.

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according to 1907/2006/EC, Article 31

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Product name: Phosphate No.1 LR

(Contd. of page 3)

 · **Recommended storage temperature:** 20°C +/- 5°C

* 8 Exposure controls and personal protection

 · **Additional information about design of technical systems:** No further data; see item 7.

 · **Components with limit values that require monitoring at the workplace:**
28300-74-5 potassium antimony(III) oxide tartrate hemihydrate (≤ 0.1%)

WEL (Great Britain)	Long-term value: 0.5 mg/m ³ as Sb
---------------------	---

 · **Additional information:** The lists that were valid during the compilation were used as basis.

 · **Personal protective equipment**

 · **General protective and hygienic measures**

Take off immediately all contaminated clothing

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

Avoid contact with the eyes.

Do not eat, drink or smoke while working.

 · **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

 · **Recommended filter device for short term use:** Filter P3

 · **Protection of hands:**

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**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level ≥ 1 (>10 min)

 · **Eye protection:** Tightly sealed safety glasses.

 · **Body protection:** Protective work clothing.

9 Physical and chemical properties:

· Form:	Tablets
· Colour:	White
· Odour:	Odourless

 · **Melting point/Melting range:** Not determined

 · **Boiling point/Boiling range:** 265°C

 · **Flash point:** Not applicable

 · **Danger of explosion:** Product is not explosive.

 · **Density at 20°C** 2.162 g/cm³

· Solubility in / Miscibility with Water:	Soluble
--	---------

 · **pH-value (4.75 g/l) at 20°C:** 1.13

· Solvent content:	
Organic solvents:	0.0 %

Solids content:	100.0 %
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(Contd. on page 5)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

Product name: Phosphate No.1 LR

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10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Materials to be avoided:**
 - alkalis
 - metals
 - alcohols
 - oxidizing agents
 - **Dangerous reactions**
 - Reacts with alcohols
 - Reacts with certain metals
 - Forms hydrogen in aqueous solution with metals
 - Liberates acid in contact with water or alcohol.
 - **Dangerous products of decomposition:**
 - Sulphur oxides (SO_x)
 - see chapter 5
-

11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

· LD/LC50 values that are relevant for classification:		
7681-38-1 sodium bisulfate		
Oral	LD50	2490 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Strong irritant with the danger of severe eye injury.
 - **Sensitization:** No sensitizing effect known.
 - **Subacute to chronic toxicity:**
 - CAS-No. 124-04-9:
 - Sensitization test (guinea pig): negative (IUCLID)
 - CAS-No. 10043-35-3:
 - MERCK: Sensitisation test (guinea pig): negative (OECD 406)
 - **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Toxic
 - Irritant
 - Boric acid:
 - Absorption: gastro-intestinal tract, mucous membranes
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - Boric acid:
 - Bacterial mutagenicity: Ames test - negative (IUCLID)
 - Mutagenicity (mammal cell test): chromosome aberration negative (NTP)
 - evaluation for carcinogenicity: negative in animals (NTP)
 - Product is suspected to cause injury to foetus.
-

12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - The following statements refer to the individual components.

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Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

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Product name: Phosphate No.1 LR

(Contd. of page 5)

CAS-No. 124-04-9: 100% / 28 d

· Ecotoxicological effects:
· Aquatic toxicity:
7681-38-1 sodium bisulfate

EC50 | 190 mg/l/48h (Daphnia magna)

· Remark:

Harmful effect due to pH shift.

Toxic for fish:

sulphates > 7 g/l

Forms corrosive mixtures with water even if diluted.

· Bacterial toxicity: sulphates toxic > 2.5 g/l

· Additional ecological information:
· General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

· PBT assessments: no data available

· vPvB assessments: no data available

13 Disposal considerations

· Product:
· 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 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
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· Uncleaned packagings:
· Recommendation: Disposal must be made according to official regulations.

· Recommended cleaning agent: Water, if necessary with cleaning agent.

14 Transport information

· Land transport ADR/RID (cross-border)
· ADR/RID-GGVS/E Class: -

· Maritime transport IMDG:
· IMDG Class: -

· Marine pollutant: No

· Air transport ICAO-TI and IATA-DGR:
· ICAO/IATA Class: -

· UN "Model Regulation": -

· Transport/Additional information: Not dangerous according to the above specifications.

 GB
 (Contd. on page 7)

Safety Data Sheet

according to 1907/2006/EC, Article 31

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Revision: 26.11.2010

Product name: Phosphate No.1 LR

(Contd. of page 6)

15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**

T Toxic

- **Hazard-determining components of labelling:**

boric acid

- **Risk phrases:**

60 May impair fertility.
61 May cause harm to the unborn child.
41 Risk of serious damage to eyes.

- **Safety phrases:**

53 Avoid exposure - obtain special instructions before use.
20 When using do not eat or drink.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/39 Wear suitable protective clothing and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

- **Special designation of certain preparations:**

Restricted to professional users.

- **National regulations**

- **Information about limitation of use:**

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC)

Employment restrictions concerning young persons must be observed.

- **Substances of very high concern (SVHC) according to REACH, Article 57**

10043-35-3	boric acid
------------	------------

16 Other information

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

- **Relevant R-phrases**

20/22 Harmful by inhalation and if swallowed.
36 Irritating to eyes.
41 Risk of serious damage to eyes.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
60 May impair fertility.
61 May cause harm to the unborn child.

- **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
LC50: Lethal concentration, 50 percent

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Safety Data Sheet

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Product name: Phosphate No.1 LR

(Contd. of page 7)

LD50: Lethal dose, 50 percent

· Sources

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

· * Data compared to the previous version altered.

GB

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

* 1 Identification of substance:

- **Product name:** Phosphate No.2 LR
- **Catalog number:** 95727764, 549-617
- **Application of the substance / the preparation:** Reagent for water analysis
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.tintometer.de
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **Emergency information:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* 2 Hazards identification

- **Hazard designation:**



T Toxic

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.

R 60 May impair fertility.

R 61 May cause harm to the unborn child.

R 31 Contact with acids liberates toxic gas.

R 41 Risk of serious damage to eyes.

Restricted to professional users.

- **GHS label elements**



Danger

H360 - May damage fertility or the unborn child.



Danger

H318 - Causes serious eye damage.

EUH031 EUH031 - Contact with acids liberates toxic gas.

(Contd. on page 2)

— GB —

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

Product name: Phosphate No.2 LR

(Contd. of page 1)

Prevention:

- P281 Use personal protective equipment as required.
- P201 Obtain special instructions before use.

Response:

- 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 or doctor/physician.

Storage:

- P405 Store locked up.







Disposal:

- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

- **Description:** mixture contains anorganic compounds

Dangerous components:

CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2	boric acid	Repr. Cat. 2;  T; R 60-61 Danger:  3.7/1B	70-80%
CAS: 7681-57-4 EINECS: 231-673-0 Index number: 016-063-00-2	disodium disulphite	 Xn,  Xi; R 22-31-41 Danger:  3.3/1 Warning:  3.1.O/4	10-20%

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 4 First aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation**
 - Supply fresh air.
 - Seek medical treatment.
- **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 10 min) under running water.
 - Call a doctor immediately.
- **After swallowing**
 - Rinse out mouth and then drink 1-2 glasses of water.
 - Seek medical treatment.
- **The following symptoms may occur:**
 - after inhalation:
 - breathing difficulty
 - coughing
 - mucous membrane irritation
 - after swallowing:
 - irritations
 - sickness
 - vomiting
 - gastric or intestinal trouble
 - CNS disorders
 - fatigue
 - ataxia (impaired locomotor coordination)
 - cardiovascular disorders

(Contd. on page 3)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

Product name: Phosphate No.2 LR

(Contd. of page 2)

cramps

5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
nitrogen oxides (NO_x)
Sulphur oxides (SO_x)
Sodium oxide
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Ambient fire may liberate hazardous vapours.
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.

6 Accidental release measures

- **Person-related safety precautions:**
Put on breathing apparatus.
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
- **Measures for cleaning/collecting:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.

* 7 Handling and storage

- **Handling**
- **Information for safe handling:**
Open and handle container with care.
Prevent formation of dust.
- **Information about protection against explosions and fires:** The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
Do not store together with acids.
Store away from oxidizing agents.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
Protect from the effects of light.
Store in a locked cabinet or with access restricted to technical experts or their assistants.
- **Recommended storage temperature:** 20°C +/- 5°C

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

(Contd. on page 4)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 26.11.2010

Product name: Phosphate No.2 LR

(Contd. of page 3)

· Components with limit values that require monitoring at the workplace:
7681-57-4 disodium disulphite (10-20%)

 WEL (Great Britain) Long-term value: 5 mg/m³
· Additional information: The lists that were valid during the compilation were used as basis.

· Personal protective equipment
· General protective and hygienic measures

- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes.
- Do not eat, drink or smoke while working.

· Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.

· Recommended filter device for short term use: Filter P2

· Protection of hands:

- 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

- The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Value for the permeation: Level ≥ 1 (>10 min)

· Eye protection: Tightly sealed safety glasses.

· Body protection: Protective work clothing.

* 9 Physical and chemical properties:

· Form:	Tablets
· Colour:	White
· Odour:	Odourless
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	300°C
· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density at 20°C	1.549 g/cm ³
· Solubility in / Miscibility with Water:	Soluble
· pH-value (10.1 g/l) at 20°C:	4.72
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - acids
 - oxidizing agents
- **Dangerous reactions** Contact with acids releases toxic gases

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— GB —

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Product name: Phosphate No.2 LR

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· Dangerous products of decomposition:

Sulphur dioxide
 carbon monoxide and carbon dioxide
 Nitrogen oxides (NO_x)
 Sulphur oxides (SO_x)
 see chapter 5

11 Toxicological information

· **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

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

10043-35-3 boric acid		
Oral	LD50	2660 mg/kg (rat) (GESTIS)
Dermal	LD50	> 2000 mg/kg (rat) (RTECS)
	LD ₀	1500 mg/kg (child) (MERCK)
Inhalative	LC 50	>2.03 mg/l (rat) (MERCK)
	NOAEL	9.6 B mg/kg (rat) (NTP)
7681-57-4 disodium disulphite		
Oral	LD50	1540 mg/kg (rat) (MERCK)
Dermal	LD50	> 2000 mg/kg (rat) (RTECS)

· **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitizing effect by inhalation and skin contact is possible by prolonged exposure.

· **Subacute to chronic toxicity:**

CAS-No. 10043-35-3:
 MERCK: Sensitisation test (guinea pig): negative (OECD 406)

· **Experience with humans:**

molybdenum(VI):
 Can cause liver damages.
 Can cause kidney damages.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Toxic
 Irritant

in case of an acute molybdenum(VI) intoxication: diarrhoea, anaemia, fatigue, loss of appetite

Boric acid:

Absorption: gastro-intestinal tract, mucous membranes

· **Mutagenicity:**

Boric acid:

Disodium disulphite has shown positive results in screening tests for mutagenicity. (IUCLID)

Mutagenicity (mammal cell test): chromosome aberration negative (NTP)

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Boric acid:

Bacterial mutagenicity: Ames test - negative (IUCLID)

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evaluation for carcinogenicity: negative in animals (NTP)
 Product is suspected to cause injury to foetus.

*12 Ecological information:

· **Information about elimination (persistence and degradability):**

· **Other information:**

Quantitative data on the ecological effect of this product are not available.
 Methods for the determination of biodegradability are not applicable to inorganic substances.
 Does not cause biological oxygen deficit.

· **Behaviour in environmental systems:**

10043-35-3 boric acid

log P(o/w)	0.76 (25°C) (.) (IUCLID)
------------	-----------------------------

· **Mobility and bioaccumulation potential:**

Depending on the concentration, nitrogen compounds may contribute to the eutrophication of water supplies.

· **Ecotoxicological effects:**

· **Aquatic toxicity:**

10043-35-3 boric acid

EC50	133 mg/l/48h (Daphnia magna) (ECOTOX)
LC50	50-100 mg/l/96h (Oncorhynchus mykiss) (ECOTOX)

7681-57-4 disodium disulphite

EC50	89 mg/l/48h (Daphnia magna) (MERCK)
LC50	150-220 mg/l/96h (Oncorhynchus mykiss) (MERCK)

· **Remark:**

Toxic for fish:
 NH_4^+ > 0.3 mg/l
 molybdenum compounds in general: > 25 mg/l

· **Algae toxicity:**

molybdenum compounds: Sc. quadricauda toxic from 54 mg/l

7681-57-4 disodium disulphite

IC50	48 mg/l/72h (Desmodesmus subspicatus) (MERCK)
------	--

· **Bacterial toxicity:**

7681-57-4 disodium disulphite

EC50	56 mg/l/17h (Pseudomonas putida) (IUCLID)
------	--

· **Protozoa:** molybdenum compounds: Microregma toxic from 27 mg/l

· **Additional ecological information:**

· **COD-value:**

7681-57-4 disodium disulphite

COD	0.165 g/g (.) (MERCK)
-----	--------------------------

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

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Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

- **PBT assessments:** no data available
 - **vPvB assessments:** no data available
-

13 Disposal considerations

- **Product:**

- **Recommendation**

Disposal must be made according to official regulations.

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

Hand over to disposers of hazardous waste.

- **European waste catalogue**

16 05 07*	discarded inorganic chemicals consisting of or containing dangerous substances
-----------	--

- **Uncleaned packagings:**

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

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

- **Land transport ADR/RID (cross-border)**

- **ADR/RID-GGVS/E Class:** -

- **Maritime transport IMDG:**

- **IMDG Class:** -

- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**

- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -

- **Transport/Additional information:** Not dangerous according to the above specifications.

*15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**

T Toxic

- **Hazard-determining components of labelling:**

boric acid

- **Risk phrases:**

60 May impair fertility.

61 May cause harm to the unborn child.

31 Contact with acids liberates toxic gas.

41 Risk of serious damage to eyes.

- **Safety phrases:**

53 Avoid exposure - obtain special instructions before use.

20 When using do not eat or drink.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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36/39 Wear suitable protective clothing and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

- **Special designation of certain preparations:**

Restricted to professional users.

- **National regulations**

- **Information about limitation of use:**

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC)

Employment restrictions concerning young persons must be observed.

- **Substances of very high concern (SVHC) according to REACH, Article 57**

10043-35-3	boric acid
------------	------------

* 16 Other information

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

- **Relevant R-phrases**

22 Harmful if swallowed.

31 Contact with acids liberates toxic gas.

41 Risk of serious damage to eyes.

60 May impair fertility.

61 May cause harm to the unborn child.

- **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

GESTIS-Stoffdatenbank

Data arise from reference works and literature.

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

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

Printing date 22.07.2014

Version number 28

Revision: 22.07.2014

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

- **1.1 Product identifier**
- **Product name:** SPADNS Reagent
- **Catalog number:** 95727757, 549-610
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

SECTION 2: Hazards identification

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



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS05, GHS07
- **Signal word** Warning
- **Hazard-determining components of labelling:**
hydrogen chloride
- **Hazard statements**
H290 May be corrosive to metals.
H315 Causes skin irritation.

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H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P280 Wear protective gloves / eye protection.

P261 Avoid breathing mist/vapours/spray.






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.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

SECTION 3: Composition/information on ingredients**3.2 Mixtures****Dangerous components:**

CAS: 7647-01-0	hydrogen chloride	10-20%
EINECS: 231-595-7	 C R34;  Xi R37	
Index number: 017-002-01-X	 Met. Corr.1, H290;  Skin Corr. 1B, H314;  STOT SE 3, H335	

• **REACH - Pre-registered substances** All components are REACH pre-registered.

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

SECTION 4: First aid measures**4.1 Description of first aid measures**

• **General information** Instantly remove any clothing soiled by the product.

• **After inhalation** Supply fresh air and call for doctor for safety reasons.

After skin contact

Instantly rinse with water.

If skin irritation continues, consult a doctor.

After eye contact

Rinse opened eye for several minutes (at least 10 min) under running water.

Call a doctor immediately.

After swallowing

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

Seek medical treatment.

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

irritations

after inhalation:

breathing difficulty

coughing

mucous membrane irritation

after swallowing:

gastric or intestinal trouble

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

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents**

Use fire fighting measures that suit the environment.

CO₂, sand, extinguishing powder.**For safety reasons unsuitable extinguishing agents**

Water.

If possible use dry extinguishing agents.

5.2 Special hazards arising from the substance or mixture

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

Hydrogen chloride (HCl)

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

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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.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures

- Wear protective equipment. Keep unprotected persons away.
- Use breathing protection against the effects of fumes/dust/aerosol.

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.
- Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.
- Absorb with liquid-binding material (sand, diatomite, universal binders).

6.4 Reference to other sections

- See Section 7 for information on safe handling
- 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 Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: The product is not flammable

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and containers:

- Store in cool location.
- Store only in the original container.

Information about storage in one common storage facility:

- Store away from metals.
- Store away from oxidizing agents.

Further information about storage conditions:

- Keep container tightly sealed.
- Store container in a well ventilated position.
- Protect from heat and direct sunlight.
- Protect from humidity and keep away from water.
- Protect from the effects of light.

Recommended storage temperature: 20 °C +/- 5 °C

Storage class 8 B

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection
Additional information about design of technical systems: No further data; see item 7.

8.1 Control parameters
Components with limit values that require monitoring at the workplace:
7647-01-0 hydrogen chloride (10-20%)

WEL (Great Britain)	Short-term value: 8 mg/m ³ , 5 ppm Long-term value: 2 mg/m ³ , 1 ppm (gas and aerosol mists)
IOELV (European Union)	Short-term value: 15 mg/m ³ , 10 ppm Long-term value: 8 mg/m ³ , 5 ppm Chlorwasserstoff

Additional information: The lists that were valid during the compilation were used as basis.

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- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
 Avoid contact with the eyes and skin.
 Do not inhale gases / fumes / aerosols.
 Take off immediately all contaminated clothing
 Wash hands during breaks and at the end of the work.
 Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter B
- **Protection of hands:** 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**
 The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 Value for the permeation: Level = 1 (< 10 min)
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|------------------|-----------|
| · Form: | Fluid |
| · Colour: | Light red |
| · Odour: | Odourless |

· pH-value at 20 °C:	0.4
-----------------------------	-----

· Melting point/Melting range:	Not determined
---------------------------------------	----------------

· Boiling point/Boiling range:	85 °C
---------------------------------------	-------

· Flash point:	Not applicable
-----------------------	----------------

· Danger of explosion:	Product is not explosive.
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· Density	Not determined
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· Vapour density	Not determined.
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· Evaporation rate	Not determined.
---------------------------	-----------------

· Solubility in / Miscibility with

· Water:	Fully miscible
-----------------	----------------

· Solvent content:

· Organic solvents:	0.0 %
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· Water:	< 90 %
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· Solids content:	< 1 %
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· 9.2 Other information	No further relevant information available.
--------------------------------	--

SECTION 10: Stability and reactivity

· Reactivity

· **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

· **Possibility of hazardous reactions** Reacts with metals forming hydrogen (--> Explosive!)

· **Conditions to avoid** No further relevant information available.

· Incompatible materials:

metals
 alkali metals
 aluminium
 alkalis
 oxidizing agents

· Hazardous decomposition products:

Hydrogen chloride (HCl)

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Product name: SPADNS Reagent

see chapter 5

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SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

7647-01-0 hydrogen chloride

Inhalative	LC50	3124 ppm / 1h (rat) (V), pure
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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
Toxic for fish:
HCl > 25 mg/l
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms.
- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

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

European waste catalogue

16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

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SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	UN1789
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1789 HYDROCHLORIC ACID, solution HYDROCHLORIC ACID
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 (C1) Corrosive substances. 8
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups 	Warning: Corrosive substances. 80 F-A,S-B Acids
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	<hr style="border-top: 1px dashed #000;"/>
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code 	5L 3 E

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Information about limitation of use: Employment restrictions concerning young persons must be observed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

- Relevant phrases
 - H290 May be corrosive to metals.
 - H314 Causes severe skin burns and eye damage.
 - H335 May cause respiratory irritation.
 - R34 Causes burns.
 - R37 Irritating to respiratory system.

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Product name: SPADNS Reagent

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· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized 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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Met. Corr. 1: Corrosive to metals, Hazard Category 1
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· Sources

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

· * Data compared to the previous version altered.

GB

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

Printing date 17.09.2014

Version number 2

Revision: 17.09.2014

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

· 1.1 Product identifier

· Product name: **Verification Standard 430 nm**

· Catalog number: 95727746, 310-760

· 1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

· Application of the substance / the preparation: Coloured Standard Solution for calibration purposes

· 1.3 Details of the supplier of the safety data sheet

· Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

· Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

· 1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

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

The product is not classified as hazardous according to the CLP regulation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void

· Information concerning particular hazards for human and environment: No hazards to be particularly mentioned.

· 2.2 Label elements

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

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

* SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Description: aqueous solution

· Dangerous components: Void

· REACH - Pre-registered substances All components are REACH pre-registered.

* 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.

· After skin contact Instantly rinse with water.

· After eye contact

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

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:** No further relevant information available.
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
 - **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**
Wear protective equipment. Keep unprotected persons away.
 - **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Dilute with much water.
 - **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
 - **6.4 Reference to other sections**
See Section 7 for information on safe handling
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** No special measures required.
 - **Information about protection against explosions and fires:** The product is not flammable
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store only in unopened original containers.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from frost.
Protect from the effects of light.
Store in the dark.
Protect from humidity and keep away from water.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 12
 - **7.3 Specific end use(s)** No further relevant information available.
-

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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- **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.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter B
 - **Protection of hands:**
Avoid direct contact with the product/ the mixture by corresponding measures.
Wear gloves in case of breakage / leakage.
 - **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
 - **Eye protection:** Wear safety glasses in case of breakage / leakage.
 - **Body protection:** Protective work clothing.
-

* SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form:	Fluid
Colour:	Yellow
· Odour:	Odourless
· Odour threshold:	Not determined.
· pH-value at 20 °C:	6.2
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	100 °C
· Flash point:	Not applicable
· Inflammability (solid, gaseous)	Not applicable.
· Danger of explosion:	Product is not explosive.
· Critical values for explosion:	
Lower:	Not determined.
Upper:	Not determined.
· Density at 20 °C	1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	> 99 %
· Solids content:	< 1 %

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Product name: Verification Standard 430 nm

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· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** see chapter 5

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Mixture: Generally not hazardous for water.
- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· European waste catalogue	
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16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

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Revision: 17.09.2014

Product name: Verification Standard 430 nm

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* SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class 	Void
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	Void
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	Not dangerous according to the above specifications.

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **Information about limitation of use:** Not required.
 - **Water hazard class:** Generally not hazardous for water.
 - **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.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organisation
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 EC50: effective concentration, 50 percent (in vivo)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 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)

- **Sources** Data arise from reference works and literature.
 - *** Data compared to the previous version altered.**
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Safety data sheet according to 1907/2006/EC, Article 31

Printing date 17.09.2014

Version number 9

Revision: 17.09.2014

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

1.1 Product identifier

Product name: **Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l, 4 mg/l**

Catalog number:

95727745, 310-750, 95727746, 310-760

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

No further relevant information available.

Application of the substance / the preparation: Coloured Standard Solution for calibration purposes

1.3 Details of the supplier of the safety data sheet

Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified as hazardous according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void

Information concerning particular hazards for human and environment:

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

2.2 Label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements Void

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: aqueous solution

Dangerous components:

CAS: 67-68-5	dimethyl sulfoxide	substance with a Community workplace exposure limit	2.5-5%
EINECS: 200-664-3			

REACH - Pre-registered substances All components are REACH pre-registered.

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Product name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l, 4 mg/l

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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; consult doctor in case of symptoms.
- **After skin contact** Instantly rinse with water.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:**
after absorption:
headache
vomiting
general feeling of sickness
CNS disorders
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Sulphur oxides (SOx)
- **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**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **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:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
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** No special precautions necessary if used correctly.
- **Information about protection against explosions and fires:**
The product is not flammable
The product can form flammable fumes when heated.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store only in unopened original containers.
Store in cool location.

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Product name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l, 4 mg/l

(Contd. of page 2)

- **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
 - Protect from heat and direct sunlight.
 - Protect from frost.
 - Protect from the effects of light.
 - Store in the dark.
 - Protect from humidity and keep away from water.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 12
 - **7.3 Specific end use(s)** No further relevant information available.
-

* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1 Control parameters**

- **Components with limit values that require monitoring at the workplace:**

67-68-5 dimethyl sulfoxide (2.5-5%)

OEL (Sweden)	Short-term value: 500 mg/m ³ , 150 ppm Long-term value: 150 mg/m ³ , 50 ppm H
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- **Additional information:** The lists that were valid during the compilation were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 - Avoid contact with the skin.
 - Take off immediately all contaminated clothing
 - Wash hands during breaks and at the end of the work.
 - Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter A
 - **Protection of hands:**
 - Avoid direct contact with the product/ the mixture by corresponding measures.
 - Wear gloves in case of breakage / leakage.
 - **Material of gloves**
 - Chloroprene rubber, CR
 - Recommended thickness of the material: ≥ 0.5 mm
 - **Penetration time of glove material**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **As protection from splashes gloves made of the following materials are suitable:**
 - Natural rubber, NR
 - Recommended thickness of the material: ≥ 0.11 mm
 - Value for the permeation: Level = 1 (< 10 min)
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **Eye protection:** Wear safety glasses in case of breakage / leakage.
 - **Body protection:** Protective work clothing.
-

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **Appearance:**
 - Form:** Fluid
 - Colour:** Pink
 - **Odour:** Odourless
 - **Odour threshold:** Not determined.
 - **pH-value at 20 °C:** 6
 - **Melting point/Melting range:** Not determined
 - **Boiling point/Boiling range:** 100 °C
-

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Product name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l, 4 mg/l

(Contd. of page 3)

· Flash point:	Not determined
· Inflammability (solid, gaseous)	Not applicable.
· Danger of explosion:	Product is not explosive. However, formation of explosive air mixtures is possible.
· Critical values for explosion:	
Lower:	Not determined.
Upper:	Not determined.
· Density at 20 °C	1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
· Solvent content:	
Organic solvents:	< 5 %
Water:	> 95 %
Solids content:	< 1 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** metals
- **Hazardous decomposition products:** see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The usual precautionary measures should be adhered to general rules for handling chemicals.
DMSO readily penetrates skin and may carry other dissolved chemicals into the body.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
CAS 67-68-5: 3.1 % / 14 d

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- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
- **12.5 Results of PBT and vPvB assessment** no data available
- **vPvB assessments:** no data available
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

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

· European waste catalogue

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- | | |
|---|--|
| · 14.1 UN-Number | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es) | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · Class | Void |
| · 14.4 Packing group | Void |
| · ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards: | |
| · Marine pollutant: | No |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **VOC-value EC:** 1037.8 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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Revision: 17.09.2014

Product name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l, 4 mg/l

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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.

• **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

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)

• **Sources** Data arise from reference works and literature.

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

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

Printing date 14.08.2014

Version number 35

Revision: 14.08.2014

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

- **1.1 Product identifier**
- **Product name:** Verification Standard 560 nm / Reference Standard pH 7,5
- **Catalog number:** 95727746, 310-760
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Coloured Standard Solution for calibration purposes
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

SECTION 2: Hazards identification

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



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

R10-67: Flammable. Vapours may cause drowsiness and dizziness.

- **Information concerning particular hazards for human and environment:**

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

Has a narcotizing effect.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS02, GHS07
- **Signal word** Warning
- **Hazard statements**
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.08.2014

Version number 35

Revision: 14.08.2014

Product name: Verification Standard 560 nm / Reference Standard pH 7,5

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Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P280 Wear protective gloves / eye protection.
 P233 Keep container tightly closed.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 If eye irritation persists: Get medical advice/attention.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: Solvent mixture.

Dangerous components:

CAS: 67-63-0	propan-2-ol	10-20%
EINECS: 200-661-7	☒ Xi R36; ☒ F R11	
Index number: 603-117-00-0	R67	
☒ Flam. Liq. 2, H225; ☒ Eye Irrit. 2, H319; STOT SE 3, H336		

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Instantly rinse with water.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:**
irritations
after inhalation:
dazed
dizziness
coughing
after swallowing:
sickness
vomiting
- **Danger** Condition may deteriorate with alcohol consumption.
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents** Water with a full water jet.

- **5.2 Special hazards arising from the substance or mixture** Can form explosive gas-air mixtures.

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.

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 Ambient fire may liberate hazardous vapours.

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SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

- **6.2 Environmental precautions:**

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

Damp down gases/fumes/haze with water spray jet.

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

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, universal binders).

- **6.4 Reference to other sections**

See Section 7 for information on safe handling

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**

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:**

Store in cool location.

Do not use light alloy containers.

- **Information about storage in one common storage facility:** Store away from oxidizing agents.

- **Further information about storage conditions:**

Keep container tightly sealed.

Protect from heat and direct sunlight.

Protect from humidity and keep away from water.

Protect from the effects of light.

- **Recommended storage temperature:** 20 °C +/- 5 °C

- **Storage class** 3

- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **8.1 Control parameters**

- **Components with limit values that require monitoring at the workplace:**

67-63-0 propan-2-ol (10-20%)
WEL (Great Britain) Short-term value: 1250 mg/m³, 500 ppmLong-term value: 999 mg/m³, 400 ppm

OEL (Sweden)

Short-term value: 600 mg/m³, 250 ppmLong-term value: 350 mg/m³, 150 ppm

- **Additional information:** The lists that were valid during the compilation were used as basis.

- **8.2 Exposure controls**

- **Personal protective equipment**

- **General protective and hygienic measures**

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

Do not eat, drink or smoke while working.

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Apply solvent resistant clothing before beginning work.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter A
 - **Protection of hands:**
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
Wear gloves in case of breakage / leakage.
 - **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
 - **Eye protection:** Safety glasses
 - **Body protection:** Protective work clothing.
-

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form:	Liquid
Colour:	Pink
Odour:	Alcohol-like
· pH-value at 20 °C:	8.2
· Melting point/Melting range:	Not applicable
· Boiling point/Boiling range:	82 °C
· Flash point:	32 °C (DIN EN ISO 13736)
· Inflammability (solid, gaseous)	Flammable.
· Critical values for explosion:	
Lower:	2.0 Vol % (2-propanol)
Upper:	12.0 Vol % (2-propanol)
· Density at 20 °C	0.976 g/cm ³
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water:	Fully miscible
· Solvent content:	
Organic solvents:	< 20 %
Water:	< 85 %
Solids content:	< 1 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
Forms peroxides
Forms explosive gas mixture with air
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
alkali metals
acids
zinc
light metals
oxidizing agents

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- **Hazardous decomposition products:**
carbon monoxide and carbon dioxide
see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

67-63-0 propan-2-ol

Oral	LD50	5045 mg/kg (rat) (RTECS)
	LDLo	3570 mg/kg (human) (RTECS)
Dermal	LD50	12800 mg/kg (rabbit) (RTECS)
Inhalative	LC50	30 mg/l/4h (rat)
		16000 ppm/8h (rat)

- **Primary irritant effect:**
- **on the skin:** slight irritations possible
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**
Vapours have anaesthetic effect.
In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.
Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

67-63-0 propan-2-ol

EC50	13299 mg/l/48h (Daphnia magna)
	3010 mg/l (Daphnia magna)
	NOEC: 757 mg/l
LC50	1400 mg/l/96h (Lepomis macrochirus) (ECOTOX)
	9640 mg/l/96h (Pimephales promelas) (Lit.)

- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:**
Quantitative data on the ecological effect of this product are not available.
The following statements refer to the individual components.
CAS 67-63-0: 95% / 21 d (MERCK OECD Screening Test)
- **12.3 Bioaccumulative potential** No further relevant information available.

- **Behaviour in environmental systems:**

67-63-0 propan-2-ol

log P(o/w)	0.05 (.)
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- **12.4 Mobility in soil** No further relevant information available.

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· Ecotoxicological effects:
· Algae toxicity:
67-63-0 propan-2-ol

 IC50 > 1000 mg/l/72h (Desmodesmus subspicatus)
(IUCLID)

· Bacterial toxicity: CAS-No. 67-63-0: Photobacterium phosphoreum EC50: 22000 mg/l/15 min Microtox-Test MERCK

· Protozoa:
67-63-0 propan-2-ol

EC5 4930 mg/l/72h (Protozoa)

· Additional ecological information:
· General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

· 12.5 Results of PBT and vPvB assessment no data available

· 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods
· Recommendation Disposal must be made according to official regulations.

· European waste catalogue

16 05 06 | laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

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

· Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN-Number
· ADR, IMDG, IATA UN1993

· 14.2 UN proper shipping name
· ADR 1993 FLAMMABLE LIQUID, N.O.S. (not viscous) (ISOPROPANOL
(ISOPROPYL ALCOHOL))

· IMDG, IATA FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL)

· 14.3 Transport hazard class(es)
· ADR

· Class 3 (F1) Flammable liquids.

· Label 3

· IMDG, IATA

· Class 3 Flammable liquids.

· Label 3

· 14.4 Packing group
· ADR, IMDG, IATA III

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<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: 	Warning: Flammable liquids. 30 F-E, <u>S-E</u>
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	3 D/E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **VOC-value EC:** 826.4 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

- **Relevant phrases**

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

R11 Highly flammable.
R36 Irritating to eyes.
R67 Vapours may cause drowsiness and dizziness.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized 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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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· Sources

Data arise from reference works and literature.

RTECS (Registry of Toxic Effects of Chemical Substances)

IUCLID (International Uniform Chemical Information Database)

CSST (Service du répertoire toxicologique)

· * Data compared to the previous version altered.

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

Printing date 18.09.2014

Version number 10

Revision: 18.09.2014

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

1.1 Product identifier

Product name: **Verification Standard 580 nm**

Catalog number: 95727746, 310-760

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the preparation: Coloured Standard Solution for calibration purposes

1.3 Details of the supplier of the safety data sheet

Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified as hazardous according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void

Information concerning particular hazards for human and environment: No hazards to be particularly mentioned.

2.2 Label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements Void

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: aqueous solution

Dangerous components:

CAS: 67-68-5	dimethyl sulfoxide	0.1-1.0%
EINECS: 200-664-3		

REACH - Pre-registered substances All components are REACH pre-registered.

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.

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- **After skin contact** Instantly rinse with water.
 - **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
 - **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
after absorption:
coughing
general feeling of sickness
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
 - **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**
Wear protective equipment. Keep unprotected persons away.
 - **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Dilute with much water.
 - **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
 - **6.4 Reference to other sections**
See Section 7 for information on safe handling
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** No special measures required.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store only in unopened original containers.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from frost.
Protect from the effects of light.
Store in the dark.
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20 °C +/- 5 °C
- **Storage class** 12

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 · **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **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.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Avoid contact with the skin.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter A
 - **Protection of hands:**
Avoid direct contact with the product/ the mixture by corresponding measures.
Wear gloves in case of breakage / leakage.
 - **Material of gloves**
Chloroprene rubber, CR
Recommended thickness of the material: ≥ 0.5 mm
 - **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **As protection from splashes gloves made of the following materials are suitable:**
Natural rubber, NR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level = 1 (< 10 min)
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **Eye protection:** Wear safety glasses in case of breakage / leakage.
 - **Body protection:** Protective work clothing.
-

* SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

- | | |
|--|-----------------|
| · Appearance: | |
| Form: | Fluid |
| Colour: | Blue |
| · Odour: Odourless | |
| · Odour threshold: Not determined. | |
| · pH-value at 20 °C: 7 | |
| · Melting point/Melting range: Not determined | |
| · Boiling point/Boiling range: 100 °C | |
| · Flash point: Not applicable | |
| · Inflammability (solid, gaseous) Not applicable. | |
| · Danger of explosion: Product is not explosive. | |
| · Critical values for explosion: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| · Density at 20 °C 1 g/cm ³ | |
| · Relative density Not determined. | |
| · Vapour density Not determined. | |
| · Evaporation rate Not determined. | |

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· Solubility in / Miscibility with Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
· Solvent content:	
Organic solvents:	< 1 %
Water:	> 97 %
Solids content:	< 1 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
 - **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Conditions to avoid** No further relevant information available.
 - **Incompatible materials:**
 - light metals
 - metals
 - **Hazardous decomposition products:** see chapter 5
-

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
 - **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** irritating effect possible
 - **Sensitisation:** No sensitizing effect known.
 - **Additional toxicological information:**
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
 - DMSO readily penetrates skin and may carry other dissolved chemicals into the body.
 - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available
-

SECTION 12: Ecological information

- **12.1 Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
 - **12.2 Persistence and degradability** No further relevant information available.
 - **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - The following statements refer to the individual components.
 - CAS 67-68-5: 3.1 % / 14 d
 - **12.3 Bioaccumulative potential** No further relevant information available.
 - **Behaviour in environmental systems:**
 - **12.4 Mobility in soil** No further relevant information available.
 - **Additional ecological information:**
 - **General notes:** Mixture: Generally not hazardous for water.
 - **12.5 Results of PBT and vPvB assessment** no data available
 - **12.6 Other adverse effects** No further relevant information available.
-

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Product name: Verification Standard 580 nm

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

- **European waste catalogue**

16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
----------	--

- **Uncleaned packagings:**

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

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, ADN, IMDG, IATA** Void

- **14.2 UN proper shipping name**

- **ADR, ADN, IMDG, IATA** Void

- **14.3 Transport hazard class(es)**

- **ADR, ADN, IMDG, IATA**

- **Class** Void

- **14.4 Packing group**

- **ADR, IMDG, IATA** Void

- **14.5 Environmental hazards:**

- **Marine pollutant:** No

- **14.6 Special precautions for user**

Not applicable.

- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

- **Transport/Additional information:**

Not dangerous according to the above specifications.

SECTION 15: Regulatory information

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

- **Information about limitation of use:** Not required.

- **Water hazard class:** Generally not hazardous for water.

- **VOC-value EC:** 602.2 g/l

- **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.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

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

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Revision: 18.09.2014

Product name: Verification Standard 580 nm

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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- **Sources** Data arise from reference works and literature.
 - *** Data compared to the previous version altered.**
-

GB

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

Printing date 24.03.2015

Version number 5

Revision: 24.03.2015

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

- **1.1 Product identifier**
- **Product name:** Verification Standard 610 nm
- **Catalog number:** 95727746, 310-760
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Coloured Standard Solution for calibration purposes
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* SECTION 2: Hazards identification

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



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
R10: Flammable.
- **Information concerning particular hazards for human and environment:**
At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS02
- **Signal word** Warning
- **Hazard statements**
H226 Flammable liquid and vapour.
- **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves / eye protection.
P233 Keep container tightly closed.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P403+P235 Store in a well-ventilated place. Keep cool.

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SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Solvent mixture.

- **Dangerous components:**

CAS: 67-63-0	propan-2-ol	5-10%
EINECS: 200-661-7	☒ Xi R36; ☒ F R11	
Index No: 603-117-00-0	R67	
Reg.nr.: 01-2119457558-25-XXXX	☒ Flam. Liq. 2, H225; ☒ Eye Irrit. 2, H319; STOT SE 3, H336	

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Instantly rinse with water.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:**
irritations
after inhalation:
coughing
dazed
dizziness
after swallowing:
sickness
vomiting
- **Danger** Condition may deteriorate with alcohol consumption.
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
Use fire fighting measures that suit the environment.
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
carbon monoxide (CO) and carbon dioxide (CO₂)
- **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**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.

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Damp down gases/fumes/haze with water spray jet.

6.3 Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, universal binders).

6.4 Reference to other sections

See Section 7 for information on safe handling

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

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and containers:

Store only in the original container.

Store in cool location.

Do not use light alloy containers.

Information about storage in one common storage facility: Store away from oxidising agents.

Further information about storage conditions:

Keep container tightly sealed.

Protect from heat and direct sunlight.

Protect from the effects of light.

Store in the dark.

Recommended storage temperature: 20 °C +/- 5 °C

Storage class 3

7.3 Specific end use(s) No further relevant information available.

* SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

8.1 Control parameters
Components with limit values that require monitoring at the workplace:
67-63-0 propan-2-ol (5-10%)

WEL (Great Britain)	Short-term value: 1250 mg/m ³ , 500 ppm Long-term value: 999 mg/m ³ , 400 ppm
OEL (Sweden)	Short-term value: 600 mg/m ³ , 250 ppm Long-term value: 350 mg/m ³ , 150 ppm

67-68-5 dimethyl sulfoxide (0.1-1.0%)

OEL (Sweden)	Short-term value: 500 mg/m ³ , 150 ppm Long-term value: 150 mg/m ³ , 50 ppm H
--------------	---

DNELs
67-63-0 propan-2-ol

Oral	DNEL	26 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	888 mg/kg (Worker / long-term / systemic effects)
		319 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	500 mg/m ³ (Worker / long-term / systemic effects)
		89 mg/m ³ (Consumer / long-term / systemic effects)

Additional information: The lists that were valid during the compilation were used as basis.

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- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Protection of hands:**
Wear gloves in case of breakage / leakage.
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**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|--------------------------|-----------------|
| · Form / Physical state: | Fluid |
| · Colour: | Blue |
| · Odour: | Solvent-like |
| · Odour threshold: | Not determined. |

· pH-value at 20 °C:	7.3
----------------------	-----

· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	82 °C Not determined

· Flash point:	39.5 °C (DIN EN ISO 2719/A)
----------------	-----------------------------

· Inflammability (solid, gaseous)	Not applicable.
-----------------------------------	-----------------

· Danger of explosion:	Not determined.
------------------------	-----------------

· Critical values for explosion:

· Lower:	Not determined.
· Upper:	Not determined.

· Density at 20 °C	1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with Water:	Fully miscible
---	----------------

· Partition coefficient (n-octanol/water):	Not determined.
--	-----------------

· Viscosity:

· dynamic:	Not determined.
· kinematic:	Not determined.

· Solvent content:

· Organic solvents:	< 10 %
· Water:	> 90 %

· Solids content:	< 1 %
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· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
 - Forms peroxides
 - Forms explosive gas mixture with air
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - alkali metals
 - acids
 - light metals
 - oxidizing agents
- **Hazardous decomposition products:**
 - carbon monoxide (CO) and carbon dioxide (CO₂)
 - see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

67-63-0 propan-2-ol

Oral	LD50	5045 mg/kg (rat) (RTECS)
	LDLo	3570 mg/kg (human) (RTECS)
Dermal	LD50	12800 mg/kg (rabbit) (RTECS)
Inhalative	LC50	30 mg/l/4h (rat)

- **Primary irritant effect:**
 - **on the skin:** slight irritations possible
 - **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.
- **Additional toxicological information:**
 - Vapours have anaesthetic effect.
 - Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, disziness, etc.
 - DMSO readily penetrates skin and may carry other dissolved chemicals into the body.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

67-63-0 propan-2-ol

EC50	13299 mg/l/48h (Daphnia magna)
	3010 mg/l (Daphnia magna)
	NOEC: 757 mg/l
LC50	1400 mg/l/96h (Lepomis macrochirus) (ECOTOX)
	9640 mg/l/96h (Pimephales promelas)
	(Lit.)

- **12.2 Persistence and degradability** No further relevant information available.

- **Other information:**

Quantitative data on the ecological effect of this product are not available.
 The following statements refer to the individual components.
 CAS 67-63-0: 95% / 21 d (MERCK OECD Screening Test)
 CAS 67-68-5: 3.1 % / 14 d

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

Behaviour in environmental systems:
67-63-0 propan-2-ol

log P(o/w) 0.05 (.)

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

Ecotoxicological effects:
Algae toxicity:
67-63-0 propan-2-ol

 IC50 > 1000 mg/l/72h (Desmodesmus subspicatus)
 (IUCLID)

- **Bacterial toxicity:** CAS-No. 67-63-0: Photobacterium phosphoreum EC50: 22000 mg/l/15 min Microtox-Test MERCK

Protozoa:
67-63-0 propan-2-ol

 EC5 4930 mg/l/72h (Protozoa)
 (Entosiphon sulcatum)

Additional ecological information:
General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
 Must not reach sewage water or drainage ditch undiluted or unneutralised.

- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

European waste catalogue

16 05 06* laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1993

- **14.2 UN proper shipping name**
- **ADR** 1993 FLAMMABLE LIQUID, N.O.S. (not viscous) (ISOPROPANOL (ISOPROPYL ALCOHOL))
- **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL)

14.3 Transport hazard class(es)
ADR


- **Class** 3 (F1) Flammable liquids.
- **Label** 3

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<ul style="list-style-type: none"> · IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: 	Warning: Flammable liquids. 30 F-E, S-E
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	3 D/E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **VOC-value EC:** 791.3 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* SECTION 16: Other information

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

- **Relevant phrases**

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

R11 Highly flammable.
R36 Irritating to eyes.
R67 Vapours may cause drowsiness and dizziness.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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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 (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

• Sources

CSST (Service du répertoire toxicologique)
IUCLID (International Uniform Chemical Information Database)
RTECS (Registry of Toxic Effects of Chemical Substances)
Data arise from reference works and literature.

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

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

1.1 Product identifier

Product name: **Verification Standard 660 nm**

Catalog number: 95727746, 310-760

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the preparation: Coloured Standard Solution for calibration purposes

1.3 Details of the supplier of the safety data sheet

Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

R10: Flammable.

Information concerning particular hazards for human and environment:

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

Hazard pictograms GHS02

Signal word Warning

Hazard statements

H226 Flammable liquid and vapour.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P280 Wear protective gloves / eye protection.

P233 Keep container tightly closed.

P243 Take precautionary measures against static discharge.

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

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P403+P235 Store in a well-ventilated place. Keep cool.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: Solvent mixture.

Dangerous components:

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5	ethanol	 F R11  Flam. Liq. 2, H225	40-45%
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REACH - Pre-registered substances All components are REACH pre-registered.

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

SECTION 4: First aid measures

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

After inhalation Supply fresh air; consult doctor in case of symptoms.

After skin contact Instantly rinse with water.

After eye contact

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

After swallowing

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

In case of persistent symptoms consult doctor.

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

after inhalation:

breathing difficulty

headache

dazed

dizziness

irritations

after swallowing:

vomiting

sickness

CNS disorders

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

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents

 CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents Water with a full water jet.

5.2 Special hazards arising from the substance or mixture Can form explosive gas-air mixtures.

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

Keep away from ignition sources

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Damp down gases/fumes/haze with water spray jet.
 - **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
 - **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
-

* SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:**
Store in cool location.
Do not use light alloy containers.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from humidity and keep away from water.
Protect from the effects of light.
Store in the dark.
Store container in a well ventilated position.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class 3**
 - **7.3 Specific end use(s)** No further relevant information available.
-

* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1 Control parameters**

Components with limit values that require monitoring at the workplace:	
64-17-5 ethanol (40-50%)	
WEL (Great Britain)	Long-term value: 1920 mg/m ³ , 1000 ppm
OEL (Sweden)	Short-term value: 1900 mg/m ³ , 1000 ppm Long-term value: 1000 mg/m ³ , 500 ppm

WEL (Great Britain)	Long-term value: 1920 mg/m ³ , 1000 ppm
OEL (Sweden)	Short-term value: 1900 mg/m ³ , 1000 ppm Long-term value: 1000 mg/m ³ , 500 ppm

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
Apply water resistant clothing before beginning work.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Protection of hands:**
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
Wear gloves in case of breakage / leakage.
- **Material of gloves**
nitrile rubber, NBR

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Recommended thickness of the material: ≥ 0.11 mm
· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level = 1 (< 10 min)

· Eye protection: Tightly sealed safety glasses.

· Body protection: Solvent resistant protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties
· Appearance:
Form: Fluid

Colour: Light green

· Odour: Solvent-like

· pH-value at 20 °C: 7.7

· Melting point/Melting range: Not applicable

· Boiling point/Boiling range: 78 °C

· Flash point: 24 °C (DIN EN ISO 13736)

· Critical values for explosion:
Lower: 3.5 Vol % (Ethanol)

Upper: 15.0 Vol % (Ethanol)

· Density at 20 °C 0.920 g/cm³
· Vapour density Not determined.

· Evaporation rate Not determined.

· Solubility in / Miscibility with
Water: Fully miscible

· Solvent content:
Organic solvents: > 40 %

Water: < 60 %

· 9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

· Reactivity
· Thermal decomposition / conditions to be avoided: To avoid thermal decomposition do not overheat.

· Possibility of hazardous reactions Forms explosive gas mixture with air

· Conditions to avoid No further relevant information available.

· Incompatible materials:

chlorine

alkali metals

acids

halogen compounds

peroxides

oxidizing agents

· Hazardous decomposition products:

Inflammable gases/vapours

Carbon monoxide

see chapter 5

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects
· Acute toxicity: Quantitative data on the toxicity of the preparation are not available.

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· LD/LC50 values that are relevant for classification:		
64-17-5 ethanol		
Oral	LD50	6200 mg/kg (rat) (IUCLID)
Dermal	LD50	> 20000 mg/kg (rabbit)

· Primary irritant effect:

- **on the skin:** slight irritations possible
- **on the eye:** irritating effect possible
- **Sensitization:** No sensitizing effect known.
- **Subacute to chronic toxicity:** chronic: dermatitis
- **Experience with humans:** Can cause liver damages.

· Additional toxicological information:

- Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc. Mists may be irritant to the mucous membranes and upper respiratory tract.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:		
64-17-5 ethanol		
EC50	9268-14221 mg/l/48h (Daphnia magna)	(IUCLID)
LC50	8140 mg/l/48h (Leuciscus idus)	(IUCLID)

- **12.2 Persistence and degradability** No further relevant information available.

· Other information:

- Quantitative data on the ecological effect of this product are not available.
- The product is easily biodegradable.

- **12.3 Bioaccumulative potential** Does not accumulate in organisms

· Behaviour in environmental systems:		
64-17-5 ethanol		
log P(o/w)	-0.32	(.)

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

· Ecotoxicological effects:

- **Algae toxicity:** CAS-No. 64-17-5: Scenedesmus quadricauda: IC5: 5000 mg/l/7d
- **Bacterial toxicity:** CAS-No. 64-17-5: Pseudomonas putida EC5: 6500 mg/l/16h (IUCLID)
- **Protozoa:** CAS-No. 64-17-5: Entosiphon sulcatum EC5: 65 mg/l/72h
- **Additional ecological information:**

· COD-value:		
64-17-5 ethanol		
COD	1.99 g/g	(.)

· BSB5-value:		
64-17-5 ethanol		
BSB5	0.93-1.67 g/g	(.)

· General notes:

- Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
- Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
- Must not reach sewage water or drainage ditch undiluted or unneutralized.

- **12.5 Results of PBT and vPvB assessment** no data available

- **12.6 Other adverse effects** No further relevant information available.

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SECTION 13: Disposal considerations

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

- **European waste catalogue**

14 06 03	other solvents and solvent mixtures
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1170

- **14.2 UN proper shipping name**
- **ADR** 1170 ETHANOL (ETHYL ALCOHOL), solution
- **IMDG** ETHANOL (ETHYL ALCOHOL), solution
- **IATA** ETHANOL, solution

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class** 3 (F1) Flammable liquids.
- **Label** 3

- **IMDG, IATA**



- **Class** 3 Flammable liquids.
- **Label** 3

- **14.4 Packing group**

- **ADR, IMDG, IATA** III

- **14.5 Environmental hazards:**

- **Marine pollutant:** No

- **14.6 Special precautions for user**

- **Warning:** Flammable liquids.
- **Kemler Number:** 30
- **EMS Number:** F-E,S-D

- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

- **Transport/Additional information:**

- **ADR**

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
- **Transport category** 3
- **Tunnel restriction code** D/E

- **IMDG**

- **Limited quantities (LQ)** 5L

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<ul style="list-style-type: none"> · Excepted quantities (EQ) 	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
 - **VOC-value EC:** 829.8 g/l
 - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

SECTION 16: Other information

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

- **Relevant phrases**

H225 Highly flammable liquid and vapour.

R11 Highly flammable.

- **Abbreviations and acronyms:**

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

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Flam. Liq. 3: Flammable liquids, Hazard Category 3

- **Sources**

IUCLID (International Uniform Chemical Information Database)

RTECS (Registry of Toxic Effects of Chemical Substances)

Data arise from reference works and literature.

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

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

1.1 Product identifier

Product name: **ZERO Verification / Reference Standard**

Catalog number: 95727745, 310-750, 95727746, 310-760

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the preparation: Standard Solution for calibration purposes

1.3 Details of the supplier of the safety data sheet

Supplier:

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

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

Informing department:

e-mail: produktsicherheit@tintometer.de
Product Safety Department

Contact for technical details:

Technical Department
e-mail: technik@tintometer.de

1.4 Emergency telephone number:

Poison Center Berlin, Germany
phone: 0049-30 30686 790

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified as hazardous according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Void

Information concerning particular hazards for human and environment: No hazards to be particularly mentioned.

2.2 Label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements Void

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: aqueous solution

Dangerous components: Void

REACH - Pre-registered substances All components are REACH pre-registered.

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.

After skin contact Instantly rinse with water.

After eye contact

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

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
after swallowing and inhalation:
mucous membrane irritation
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
 - **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**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
 - **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:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
 - **6.4 Reference to other sections**
See Section 7 for information on safe handling
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** No special measures required.
 - **Information about protection against explosions and fires:** The product is not flammable
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store only in unopened original containers.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from frost.
Protect from the effects of light.
Store in the dark.
Protect from humidity and keep away from water.
 - **Recommended storage temperature:** 20 °C +/- 5 °C
 - **Storage class** 12
 - **7.3 Specific end use(s)** No further relevant information available.
-

* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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- **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.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke while working.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter A
 - **Protection of hands:**
Avoid direct contact with the product/ the mixture by corresponding measures.
Wear gloves in case of breakage / leakage.
 - **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
 - **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)
 - **Eye protection:** Wear safety glasses in case of breakage / leakage.
 - **Body protection:** Protective work clothing.
-

* SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

- | | |
|------------------|-----------------|
| Form: | Fluid |
| Colour: | Colourless |
| Odour: | Light |
| Odour threshold: | Not determined. |

· pH-value at 20 °C:	4.3
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· Melting point/Melting range:	Not determined
--------------------------------	----------------

· Boiling point/Boiling range:	100 °C
--------------------------------	--------

· Flash point:	Not applicable
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· Inflammability (solid, gaseous)	Not applicable.
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· Danger of explosion:	Product is not explosive.
------------------------	---------------------------

· Critical values for explosion:

- | | |
|--------|-----------------|
| Lower: | Not determined. |
| Upper: | Not determined. |

· Density at 20 °C	1 g/cm ³
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· Relative density	Not determined.
--------------------	-----------------

· Vapour density	Not determined.
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· Evaporation rate	Not determined.
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· Solubility in / Miscibility with Water:	Fully miscible
---	----------------

· Partition coefficient (n-octanol/water):	Not determined.
--	-----------------

· Viscosity:

- | | |
|------------|-----------------|
| dynamic: | Not determined. |
| kinematic: | Not determined. |

· Solvent content:

- | | |
|-------------------|--------|
| Organic solvents: | 0.0 % |
| Water: | > 99 % |

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· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** see chapter 5

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitisation:** No sensitizing effect known.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogeny, mutagenicity and toxicity for reproduction)** no data available

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** Quantitative data on the ecological effect of this product are not available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Mixture: Generally not hazardous for water.
- **12.5 Results of PBT and vPvB assessment** no data available
- **12.6 Other adverse effects** No further relevant information available.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· European waste catalogue	
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16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

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SECTION 14: Transport information

· 14.1 UN-Number · ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Information about limitation of use:** Not required.
- **Water hazard class:** Generally not hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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- **Abbreviations and acronyms:**

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