

19.03.2022

**Kit Components**

| Product code         | Description                                |
|----------------------|--|
| <b>CAY643-VxxAAH</b> | <b>CA71SI Reagent Set<br/>for silicate</b> |

Components:

|          |   |
|----------|---|
| 51513729 | Reagent SI1 for silicate                  |
| 51513730 | Reagent SI2 for silicate                  |
| 51513731 | Reagent SI3, Component 1 for silicate     |
| 51513732 | Reagent SI3, Component 2 for silicate     |
| 4.160    | Standard solution SiO <sub>2</sub> 0 µg/l |

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

### 1.1 Product identifier

Trade name: **Reagent SI1**

Synonym: *for silicate*

Article number: 51513729

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: [MSDS.PCC@endress.com](mailto:MSDS.PCC@endress.com)

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



*corrosion*

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

*Eye Dam. 1 H318 Causes serious eye damage.*

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

Hazard pictograms



GHS05

Signal word *Danger*

Hazard-determining components of labelling:

*sulphuric acid*

*sodium hydrogensulphate*

Hazard statements

*H314 Causes severe skin burns and eye damage.*

Precautionary statements

*P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.*

*P321 Specific treatment (see on this label).*

*P405 Store locked up.*

*P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

**Trade name: Reagent S11**

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**Additional information:**

Product contains: Reportable explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 9.

**2.3 Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures**

**Description:** Mixture of substances listed below with nonhazardous additions.

| <b>Dangerous components:</b>  |   |       |
|---|---|-------|
| CAS: 7664-93-9<br>EINECS: 231-639-5<br>Registration number: 01-2119458838-20-XXXX | sulphuric acid<br>Skin Corr. 1A, H314<br>Specific concentration limits: Skin Corr. 1A; H314: $C \geq 15\%$<br>Skin Irrit. 2; H315: $5\% \leq C < 15\%$<br>Eye Irrit. 2; H319: $5\% \leq C < 15\%$ | 5-10% |
| CAS: 7681-38-1<br>EINECS: 231-665-7   | sodium hydrogensulphate<br>Eye Dam. 1, H318   | 2-6%  |
| CAS: 7782-91-4<br>EINECS: 231-970-5   | molybdic acid<br>STOT RE 2, H373; Eye Irrit. 2, H319; STOT SE 3, H335   | 2-6%  |

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

**SECTION 4: First aid measures****4.1 Description of first aid measures**

**General information:** Immediately remove any clothing soiled by the product.

**After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

**After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.

**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:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**For safety reasons unsuitable extinguishing agents:** no further information

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

During heating or in case of fire poisonous gases are produced.

**5.3 Advice for firefighters** No further relevant information available.

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Trade name: Reagent S11

(Contd. of page 2)

**Protective equipment:** Mount respiratory protective device.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

**6.2 Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

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 disposal information.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**Information about fire - and explosion protection:** Keep respiratory protective device available.**7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep container tightly sealed.**Storage class:** 8 B**7.3 Specific end use(s)** No further relevant information available.**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:****CAS: 7664-93-9 sulphuric acid**WEL Long-term value: 0.05\* mg/m<sup>3</sup>  
\*mist: defined as thoracic fraction**CAS: 7782-91-4 molybdic acid**WEL Short-term value: 10 mg/m<sup>3</sup>  
Long-term value: 5 mg/m<sup>3</sup>  
as Mo**DNELs****CAS: 7664-93-9 sulphuric acid**Inhalative DNEL short-term 0.1 mg/m<sup>3</sup> (worker) (local effects)DNEL long-term 0.05 mg/m<sup>3</sup> (worker) (local effects)**PNECs****CAS: 7664-93-9 sulphuric acid**

PNEC 8.8 mg/L (Wastewater treatment plant)

0.25 mg/L (sea water)

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**Trade name: Reagent S11**

(Contd. of page 3)

|      |                               |
|------|-------------------------------|
| PNEC | 2.5 µg/L (fresh water)        |
| PNEC | 2 µg/kg (marine sediment)     |
|      | 2 µg/kg (freshwater sediment) |

**Additional information:** *The lists valid during the making were used as basis.*

**8.2 Exposure controls**

**Appropriate engineering controls** *No further data; see item 7.*

**Individual protection measures, such as personal protective equipment****General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes.*

*Avoid contact with the eyes and skin.*

**Respiratory protection:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

**Hand protection**

*Protective gloves*

*To avoid skin problems reduce the wearing of gloves to the required minimum.*

*Only use chemical-protective gloves with CE-labelling of category III.*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

**Material of gloves**

*Nitrile rubber, NBR*

*Chloroprene rubber, CR*

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

**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.*

**Eye/face protection**

*Tightly sealed goggles*

**Body protection:** *Protective work clothing*

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

**Physical state**

*Fluid*

**Colour:**

*Yellow tint*

**Odour:**

*Characteristic*

**Odour threshold:**

*Not determined.*

**Melting point/freezing point:**

*Undetermined.*

**Boiling point or initial boiling point and boiling range**

*>100 °C*

**Flammability**

*Not applicable.*

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## Trade name: Reagent S11

(Contd. of page 4)

|  |  |
|--|--|
| <b>Lower and upper explosion limit</b>   |  |
| Lower:   | <i>Not determined.</i>   |
| Upper:   | <i>Not determined.</i>   |
| Flash point:   | <i>Not applicable.</i>   |
| Decomposition temperature:   | <i>Not determined.</i>   |
| pH at 20 °C  | <2   |
| Viscosity:   |  |
| Kinematic viscosity  | <i>Not determined.</i>   |
| Dynamic:   | <i>Not determined.</i>   |
| Solubility   |  |
| water:   | <i>Fully miscible.</i>   |
| Partition coefficient n-octanol/water (log value)                                    | <i>Not determined.</i>   |
| Vapour pressure at 20 °C:  | 23 hPa   |
| Density and/or relative density  |  |
| Density:   | <i>Not determined.</i>   |
| Relative density   | <i>Not determined.</i>   |
| Vapour density   | <i>Not determined.</i>   |
| <b>9.2 Other information</b>   |  |
| Appearance:  |  |
| Form:  | <i>Liquid</i>  |
| <b>Important information on protection of health and environment, and on safety.</b> |  |
| Auto-ignition temperature:   | <i>Product is not selfigniting.</i>                                      |
| Explosive properties:  | <i>Product does not present an explosion hazard.<br/>Not determined.</i> |
| Solvent content:   |  |
| Water:   | 81.4 %   |
| Solids content:  | 0.0 %  |
| Change in condition  |  |
| Evaporation rate   | <i>Not determined.</i>   |
| <b>Information with regard to physical hazard classes</b>                            |  |
| Explosives   | <i>Void</i>  |
| Flammable gases  | <i>Void</i>  |
| Aerosols   | <i>Void</i>  |
| Oxidising gases  | <i>Void</i>  |
| Gases under pressure   | <i>Void</i>  |
| Flammable liquids  | <i>Void</i>  |
| Flammable solids   | <i>Void</i>  |
| Self-reactive substances and mixtures  | <i>Void</i>  |
| Pyrophoric liquids   | <i>Void</i>  |
| Pyrophoric solids  | <i>Void</i>  |
| Self-heating substances and mixtures   | <i>Void</i>  |
| Substances and mixtures, which emit flammable gases in contact with water            | <i>Void</i>  |
| Oxidising liquids  | <i>Void</i>  |
| Oxidising solids   | <i>Void</i>  |
| Organic peroxides  | <i>Void</i>  |
| Corrosive to metals  | <i>Void</i>  |
| Desensitised explosives  | <i>Void</i>  |

**SECTION 10: Stability and reactivity**10.1 Reactivity *No further relevant information available.***10.2 Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.*

(Contd. on page 6)

Trade name: Reagent S11

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**10.3 Possibility of hazardous reactions** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity****LD/LC50 values relevant for classification:****CAS: 7681-38-1 sodium hydrogensulphate**

Oral | LD50 | 2,490 mg/kg (rat)

**CAS: 7782-91-4 molybdic acid**

Oral | LD50 | 2,689 mg/kg (rat)

**Skin corrosion/irritation** *Causes severe skin burns and eye damage.***Serious eye damage/irritation** *Causes serious eye damage.***11.2 Information on other hazards****Endocrine disrupting properties***None of the ingredients is listed.***SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Additional ecological information:****General notes:***Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water**Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.**Must not reach sewage water or drainage ditch undiluted or unneutralised.**Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.***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.**Must not be disposed together with household garbage. Do not allow product to reach sewage system.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.*

(Contd. on page 7)

Trade name: Reagent S11

(Contd. of page 6)

**SECTION 14: Transport information****14.1 UN number or ID number**

IMDG, IATA

UN2796

**14.2 UN proper shipping name**

ADR

UN2796 SULPHURIC ACID

IMDG

SULPHURIC ACID

IATA

Sulphuric acid

**14.3 Transport hazard class(es)**

ADR



Class

8 (C1) Corrosive substances.

Label

8

IMDG, IATA



Class

8 Corrosive substances.

Label

8

**14.4 Packing group**

ADR, IMDG, IATA

II

**14.5 Environmental hazards:**

Not applicable.

**14.6 Special precautions for user**

Warning: Corrosive substances.

Hazard identification number (Kemler code):

80

EMS Number:

F-A, S-B

Segregation groups

Strong acids

Stowage Category

B

Segregation Code

SG36 Stow "separated from" SGG18-alkalis.

SG49 Stow "separated from" SGG6-cyanides

**14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ)

1L

Transport category

2

Tunnel restriction code

E

IMDG

Limited quantities (LQ)

1L

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 2796 SULPHURIC ACID, 8, II

**SECTION 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

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

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**Trade name: Reagent S11**

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**Hazard pictograms**

GHS05

**Signal word** *Danger***Hazard-determining components of labelling:***sulphuric acid**sodium hydrogensulphate***Hazard statements***H314 Causes severe skin burns and eye damage.***Precautionary statements***P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.**P321 Specific treatment (see on this label).**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.***National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***16.1 Relevant phrases***H314 Causes severe skin burns and eye damage.**H318 Causes serious eye damage.**H319 Causes serious eye irritation.**H335 May cause respiratory irritation.**H373 May cause damage to organs through prolonged or repeated exposure.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***ADR: Accord relatif au transport international 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)**DNEL: Derived No-Effect Level (GB REACH)**PNEC: Predicted No-Effect Concentration (GB REACH)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Skin Corr. 1A: Skin corrosion/irritation – Category 1A**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*

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# Safety data sheet

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according to 1907/2006/EC, Article 31

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Version 6 (replaces version 5)

Revision: 19.03.2022

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**Trade name: Reagent S11**

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*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

*STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2*

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

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—GB—

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** Reagent SI2**Synonym:** *for silicate***Article number:** 51513730**1.2 Relevant identified uses of the substance or mixture and uses advised against***No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:***Endress+Hauser**Conducta GmbH+Co. KG**Dieselstraße 24**D-70839 Gerlingen***Further information obtainable from:***Phone: +49 (0)7156 209-10117**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 0044 717 635 91 91**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***Eye Irrit. 2 H319 Causes serious eye irritation.***2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008***The product is classified and labelled according to the GB CLP regulation.***Hazard pictograms**

GHS07

**Signal word** *Warning***Hazard statements***H319 Causes serious eye irritation.***Precautionary statements***P264 Wash thoroughly after handling.**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.**P337+P313 If eye irritation persists: Get medical advice/attention.***2.3 Other hazards***The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.*

Trade name: Reagent SI2

(Contd. of page 1)

**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.

| Dangerous components:   |  |        |
|---|--|--------|
| CAS: 77-92-9<br>EINECS: 201-069-1<br>Registration number: 01-2119457026-42-XXXX | citric acid<br>⚠ Eye Irrit. 2, H319; STOT SE 3, H335 | 10-20% |

**Additional information:** For the wording of the listed hazard phrases refer to section 16.**SECTION 4: First aid measures****4.1 Description of first aid measures****After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:** Generally the product does not irritate the skin.**After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:** If symptoms persist 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:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**For safety reasons unsuitable extinguishing agents:** no further information**5.2 Special hazards arising from the substance or mixture** No further relevant information available.**5.3 Advice for firefighters** No further relevant information available.**Protective equipment:** No special measures required.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.**6.2 Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling** No special precautions are necessary if used correctly.**Information about fire - and explosion protection:** No special measures required.

(Contd. on page 3)

**Trade name: Reagent SI2**

(Contd. of page 2)

**7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *Keep container tightly sealed.***Storage class:** 12**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients 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 valid during the making were used as basis.***8.2 Exposure controls****Appropriate engineering controls** *No further data; see item 7.***Individual protection measures, such as personal protective equipment****General protective and hygienic measures:***Keep away from foodstuffs, beverages and feed.**Immediately remove all soiled and contaminated clothing**Wash hands before breaks and at the end of work.**Avoid contact with the eyes.**Avoid contact with the eyes and skin.***Respiratory protection:** *Not required.***Hand protection***Protective gloves**To avoid skin problems reduce the wearing of gloves to the required minimum.**Only use chemical-protective gloves with CE-labelling of category III.**The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.***Material of gloves***Nitrile rubber, NBR**The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.***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.***Eye/face protection***Tightly sealed goggles***Body protection:** *Protective work clothing*

(Contd. on page 4)

GB

Trade name: Reagent SI2

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**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

|   |                               |
|---|-------------------------------|
| <b>Physical state</b>   | <i>Fluid</i>                  |
| <b>Colour:</b>  | <i>Clear</i>                  |
| <b>Odour:</b>   | <i>Odourless</i>              |
| <b>Odour threshold:</b>   | <i>Not determined.</i>        |
| <b>Melting point/freezing point:</b>                            | <i>Undetermined.</i>          |
| <b>Boiling point or initial boiling point and boiling range</b> | <i>&gt;100 °C</i>             |
| <b>Flammability</b>   | <i>Not applicable.</i>        |
| <b>Lower and upper explosion limit</b>                          |                               |
| <b>Lower:</b>   | <i>Not determined.</i>        |
| <b>Upper:</b>   | <i>Not determined.</i>        |
| <b>Flash point:</b>   | <i>Not applicable.</i>        |
| <b>Ignition temperature:</b>                                    | <i>1 °C</i>                   |
| <b>Decomposition temperature:</b>                               | <i>Not determined.</i>        |
| <b>pH at 20 °C</b>  | <i>&lt;2</i>                  |
| <b>Viscosity:</b>   |                               |
| <b>Kinematic viscosity</b>                                      | <i>Not determined.</i>        |
| <b>Dynamic:</b>   | <i>Not determined.</i>        |
| <b>Solubility</b>   |                               |
| <b>water:</b>   | <i>Fully miscible.</i>        |
| <b>Partition coefficient n-octanol/water (log value)</b>        | <i>Not determined.</i>        |
| <b>Vapour pressure at 20 °C:</b>                                | <i>23 hPa</i>                 |
| <b>Density and/or relative density</b>                          |                               |
| <b>Density at 20 °C:</b>  | <i>1.096 g/cm<sup>3</sup></i> |
| <b>Relative density</b>   | <i>Not determined.</i>        |
| <b>Vapour density</b>   | <i>Not determined.</i>        |

**9.2 Other information**

|  |  |
|--|--|
| <b>Appearance:</b>   |  |
| <b>Form:</b>   | <i>Liquid</i>  |
| <b>Important information on protection of health and environment, and on safety.</b> |  |
| <b>Auto-ignition temperature:</b>  | <i>Product is not selfigniting.</i>                                      |
| <b>Explosive properties:</b>   | <i>Product does not present an explosion hazard.<br/>Not determined.</i> |
| <b>Solvent content:</b>  |  |
| <b>Water:</b>  | <i>84.3 %</i>  |
| <b>Solids content:</b>   | <i>0.0 %</i>   |
| <b>Change in condition</b>   |  |
| <b>Evaporation rate</b>  | <i>Not determined.</i>   |

**Information with regard to physical hazard classes**

|  |             |
|--|-------------|
| <b>Explosives</b>                            | <i>Void</i> |
| <b>Flammable gases</b>                       | <i>Void</i> |
| <b>Aerosols</b>                              | <i>Void</i> |
| <b>Oxidising gases</b>                       | <i>Void</i> |
| <b>Gases under pressure</b>                  | <i>Void</i> |
| <b>Flammable liquids</b>                     | <i>Void</i> |
| <b>Flammable solids</b>                      | <i>Void</i> |
| <b>Self-reactive substances and mixtures</b> | <i>Void</i> |
| <b>Pyrophoric liquids</b>                    | <i>Void</i> |
| <b>Pyrophoric solids</b>                     | <i>Void</i> |

(Contd. on page 5)

## Trade name: Reagent SI2

(Contd. of page 4)

|   |      |
|---|------|
| Self-heating substances and mixtures                                      | Void |
| Substances and mixtures, which emit flammable gases in contact with water | Void |
| Oxidising liquids   | Void |
| Oxidising solids  | Void |
| Organic peroxides   | Void |
| Corrosive to metals   | Void |
| Desensitised explosives   | Void |

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No further relevant information available.

**10.2 Chemical stability**

**Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

**10.3 Possibility of hazardous reactions** No dangerous reactions known.

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

**10.5 Incompatible materials:** No further relevant information available.

**10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Acute toxicity**

**LD/LC50 values relevant for classification:**

**CAS: 77-92-9 citric acid**

|      |      |                     |
|------|------|---------------------|
| Oral | LD50 | 5,040 mg/kg (Mouse) |
|------|------|---------------------|

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

**11.2 Information on other hazards**

**Endocrine disrupting properties**

None of the ingredients is listed.

**SECTION 12: Ecological information**

**12.1 Toxicity**

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

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

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

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

**12.7 Other adverse effects**

**Additional ecological information:**

**General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

(Contd. on page 6)

Trade name: Reagent SI2

(Contd. of page 5)

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****14.1 UN number or ID number**

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:***Not applicable.***14.6 Special precautions for user***Not applicable.***14.7 Maritime transport in bulk according to IMO**

instruments

*Not applicable.*

UN "Model Regulation":

Void

**SECTION 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***The product is classified and labelled according to the GB CLP regulation.***Hazard pictograms**

GHS07

**Signal word** *Warning***Hazard statements***H319 Causes serious eye irritation.***Precautionary statements***P264 Wash thoroughly after handling.**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.**P337+P313 If eye irritation persists: Get medical advice/attention.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.***National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

(Contd. on page 7)

— GB —



**Trade name: Reagent SI2**

(Contd. of page 6)

**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**16.1 Relevant phrases**

*H319 Causes serious eye irritation.*

*H335 May cause respiratory irritation.*

**16.3 Recommended restriction of use**

**Department issuing SDS:** PCC-TWR

**Contact:** *MSDS.pcc@endress.com*

**Abbreviations and acronyms:**

*ADR: Accord relatif au transport international 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)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*

*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

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

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** Reagent SI3, Component 1**Synonym:** *for silicate***Article number:** 51513731**1.2 Relevant identified uses of the substance or mixture and uses advised against***No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:***Endress+Hauser**Conducta GmbH+Co. KG**Dieselstraße 24**D-70839 Gerlingen***Further information obtainable from:***Phone: +49 (0)7156 209-10117**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 0044 717 635 91 91**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***corrosion**Eye Dam. 1 H318 Causes serious eye damage.***2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008***The product is classified and labelled according to the GB CLP regulation.***Hazard pictograms**

GHS05

**Signal word** *Danger***Hazard-determining components of labelling:***disodium disulphite***Hazard statements***H318 Causes serious eye damage.***Precautionary statements***P101 If medical advice is needed, have product container or label at hand.**P102 Keep out of reach of children.**P103 Read carefully and follow all instructions.**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 POISON CENTER/doctor.***Additional information:***EUH031 Contact with acids liberates toxic gas.*

(Contd. on page 2)

— GB —

**Trade name: Reagent SI3, Component 1**

(Contd. of page 1)

**2.3 Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures**

**Description:** Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

|   |   |        |
|---|---|--------|
| CAS: 7681-57-4<br>EINECS: 231-673-0<br>Registration number: 01-2119531326-45-XXXX | disodium disulphite<br>☞ Eye Dam. 1, H318; ☞ Acute Tox. 4, H302, EUH031 | 10-20% |
|---|---|--------|

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

**SECTION 4: First aid measures****4.1 Description of first aid measures**

**After inhalation:** Supply fresh air; consult doctor in case of complaints.

**After skin contact:** Generally the product does not irritate the skin.

**After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing:** If symptoms persist 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:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**For safety reasons unsuitable extinguishing agents:** no further information

**5.2 Special hazards arising from the substance or mixture** No further relevant information available.**5.3 Advice for firefighters** No further relevant information available.

**Protective equipment:** Mount respiratory protective device.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

**6.2 Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

**6.4 Reference to other sections**

See Section 7 for information on safe handling.

(Contd. on page 3)

**Trade name: Reagent SI3, Component 1**

(Contd. of page 2)

See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling** *No special precautions are necessary if used correctly.*  
**Information about fire - and explosion protection:** *No special measures required.*

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

**Storage:**

**Requirements to be met by storerooms and receptacles:** *No special requirements.*

**Information about storage in one common storage facility:** *Do not store together with acids.*

**Further information about storage conditions:** *Keep container tightly sealed.*

**Storage class:** 12

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

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

**CAS: 7681-57-4 disodium disulphite**

WEL | Long-term value: 5 mg/m<sup>3</sup>

**Additional information:** *The lists valid during the making were used as basis.*

**8.2 Exposure controls**

**Appropriate engineering controls** *No further data; see item 7.*

**Individual protection measures, such as personal protective equipment**

**General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes.*

*Avoid contact with the eyes and skin.*

**Respiratory protection:** *Not required.*

**Hand protection**

Protective gloves

*To avoid skin problems reduce the wearing of gloves to the required minimum.*

*Only use chemical-protective gloves with CE-labelling of category III.*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

**Material of gloves**

*Nitrile rubber, NBR*

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

**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.*

(Contd. on page 4)

## Trade name: Reagent SI3, Component 1

(Contd. of page 3)

## Eye/face protection



Tightly sealed goggles

Body protection: Protective work clothing

## SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

## General Information

|  |                         |
|--|-------------------------|
| Physical state   | Fluid                   |
| Colour:  | Colourless              |
| Odour:   | Recognisable            |
| Odour threshold:   | Not determined.         |
| Melting point/freezing point:                            | Undetermined.           |
| Boiling point or initial boiling point and boiling range | >100 °C                 |
| Flammability   | Not applicable.         |
| Lower and upper explosion limit                          |                         |
| Lower:   | Not determined.         |
| Upper:   | Not determined.         |
| Flash point:   | Not applicable.         |
| Decomposition temperature:                               | Not determined.         |
| pH at 20 °C  | 3-5                     |
| Viscosity:   |                         |
| Kinematic viscosity                                      | Not determined.         |
| Dynamic:   | Not determined.         |
| Solubility   |                         |
| water:   | Fully miscible.         |
| Partition coefficient n-octanol/water (log value)        | Not determined.         |
| Vapour pressure at 20 °C:                                | 23 hPa                  |
| Density and/or relative density                          |                         |
| Density at 20 °C:  | 1.035 g/cm <sup>3</sup> |
| Relative density   | Not determined.         |
| Vapour density   | Not determined.         |

## 9.2 Other information

## Appearance:

Form: Fluid

## Important information on protection of health and environment, and on safety.

## Auto-ignition temperature:

Product is not selfigniting.

## Explosive properties:

Product does not present an explosion hazard.  
Not determined.

## Solvent content:

Water: 84.4 %

Solids content: 0.0 %

## Change in condition

Evaporation rate: Not determined.

## Information with regard to physical hazard classes

|                      |      |
|----------------------|------|
| Explosives           | Void |
| Flammable gases      | Void |
| Aerosols             | Void |
| Oxidising gases      | Void |
| Gases under pressure | Void |

(Contd. on page 5)

## Trade name: Reagent SI3, Component 1

(Contd. of page 4)

|   |      |
|---|------|
| Flammable liquids   | Void |
| Flammable solids  | Void |
| Self-reactive substances and mixtures                                     | Void |
| Pyrophoric liquids  | Void |
| Pyrophoric solids   | Void |
| Self-heating substances and mixtures                                      | Void |
| Substances and mixtures, which emit flammable gases in contact with water | Void |
| Oxidising liquids   | Void |
| Oxidising solids  | Void |
| Organic peroxides   | Void |
| Corrosive to metals   | Void |
| Desensitised explosives   | Void |

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** *No further relevant information available.*

**10.2 Chemical stability**

**Thermal decomposition / conditions to be avoided:**

*No decomposition if used according to specifications.*

**10.3 Possibility of hazardous reactions** *No dangerous reactions known.*

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

**10.5 Incompatible materials:** *No further relevant information available.*

**10.6 Hazardous decomposition products:** *No dangerous decomposition products known.*

**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

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

**11.2 Information on other hazards****Endocrine disrupting properties**

*None of the ingredients is listed.*

**SECTION 12: Ecological information****12.1 Toxicity**

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

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

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

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

**12.6 Endocrine disrupting properties**

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

**12.7 Other adverse effects**

**Additional ecological information:**

**General notes:**

*Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water*

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

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

(Contd. on page 6)

Trade name: Reagent SI3, Component 1

(Contd. of page 5)

**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.*

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

**Uncleaned packaging:**

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

**Recommended cleansing agents:** *Water, if necessary together with cleansing agents.*

**SECTION 14: Transport information****14.1 UN number or ID number**

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:**

Not applicable.

**14.6 Special precautions for user**

Not applicable.

**14.7 Maritime transport in bulk according to IMO**

instruments

Not applicable.

UN "Model Regulation":

Void

**SECTION 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**

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

**Hazard pictograms**

GHS05

**Signal word** *Danger***Hazard-determining components of labelling:***disodium disulphite***Hazard statements***H318 Causes serious eye damage.***Precautionary statements***P101 If medical advice is needed, have product container or label at hand.**P102 Keep out of reach of children.**P103 Read carefully and follow all instructions.**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 POISON CENTER/doctor.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.*

(Contd. on page 7)

**Trade name: Reagent SI3, Component 1**

(Contd. of page 6)

**National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**16.1 Relevant phrases***H302 Harmful if swallowed.**H318 Causes serious eye damage.**EUH031 Contact with acids liberates toxic gas.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***ADR: Accord relatif au transport international 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)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 4: Acute toxicity – Category 4**Eye Dam. 1: Serious eye damage/eye irritation – Category 1***\* Data compared to the previous version altered.**



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

### 1.1 Product identifier

Trade name: **Reagent SI3, Component 2**

Synonym: *for silicate*

Article number: 51513732

CAS Number:

55-55-0

EC number:

200-237-1

Index number:

650-031-00-4

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: [MSDS.PCC@endress.com](mailto:MSDS.PCC@endress.com)

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



*health hazard*

STOT RE 2      H373 *May cause damage to organs through prolonged or repeated exposure.*



*environment*

Aquatic Acute 1      H400 *Very toxic to aquatic life.*

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



Acute Tox. 4      H302 *Harmful if swallowed.*

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

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

(Contd. on page 2)

— GB —

**Trade name: Reagent SI3, Component 2**

(Contd. of page 1)

**Hazard pictograms**

GHS07 GHS08 GHS09

**Signal word** *Warning***Hazard-determining components of labelling:***bis(4-hydroxy-N-methylanilinium) sulfate***Hazard statements***H302 Harmful if swallowed.**H317 May cause an allergic skin reaction.**H373 May cause damage to organs through prolonged or repeated exposure.**H410 Very toxic to aquatic life with long lasting effects.***Precautionary statements***P260 Do not breathe dust/fume/gas/mist/vapours/spray.**P280 Wear protective gloves.**P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**P330 Rinse mouth.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***2.3 Other hazards***The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.***Results of PBT and vPvB assessment***PBT: Not applicable.**vPvB: Not applicable.***SECTION 3: Composition/information on ingredients****3.1 Substances****CAS No. Description***CAS: 55-55-0 bis(4-hydroxy-N-methylanilinium) sulfate***Identification number(s)***EC number: 200-237-1**Index number: 650-031-00-4***SECTION 4: First aid measures****4.1 Description of first aid measures****General information:***Immediately remove any clothing soiled by the product.**Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.***After inhalation:***Supply fresh air and to be sure call for a doctor.**In case of unconsciousness place patient stably in side position for transportation.***After skin contact:***Immediately wash with water and soap and rinse thoroughly.**Immediately rinse with water.**After eye contact: Rinse opened eye for several minutes under running water.**After swallowing: Call for a doctor immediately.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.*

(Contd. on page 3)

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**Trade name: Reagent SI3, Component 2**

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(Contd. of page 2)

**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:***CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture***During heating or in case of fire poisonous gases are produced.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *Mount respiratory protective device.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures***Mount respiratory protective device.**Wear protective clothing.***6.2 Environmental precautions:***Do not allow product to reach sewage system or any water course.**Inform respective authorities in case of seepage into water course or sewage system.**Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:***Dispose contaminated material as waste according to item 13.**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 disposal information.***SECTION 7: Handling and storage****7.1 Precautions for safe handling** *Ensure good ventilation/exhaustion at the workplace.***Information about fire - and explosion protection:** *Keep respiratory protective device available.***7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** *11***7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:** *Not required.***Additional information:** *The lists valid during the making were used as basis.***8.2 Exposure controls****Appropriate engineering controls** *No further data; see item 7.***Individual protection measures, such as personal protective equipment****General protective and hygienic measures:***Keep away from foodstuffs, beverages and feed.**Immediately remove all soiled and contaminated clothing**Wash hands before breaks and at the end of work.*

(Contd. on page 4)

## Trade name: Reagent SI3, Component 2

(Contd. of page 3)

Store protective clothing separately.

### Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

### Hand protection



Protective gloves

To avoid skin problems reduce the wearing of gloves to the required minimum.

Only use chemical-protective gloves with CE-labelling of category III.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

No chemical-protective gloves required.

### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Nitrile rubber, NBR

Natural rubber, NR

Chloroprene rubber, CR

### 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.

### Eye/face protection



Tightly sealed goggles

Body protection: Protective work clothing

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

Physical state

Solid

Colour:

Cream coloured

Odour:

Odourless

Odour threshold:

Not determined.

Melting point/freezing point:

260 °C (Decomposition)

Boiling point or initial boiling point and boiling range

Undetermined.

Flammability

Product is not flammable.

Lower and upper explosion limit

Lower:

Not determined.

Upper:

Not determined.

Flash point:

Not applicable.

Decomposition temperature:

Not determined.

pH

Not applicable.

Viscosity:

Kinematic viscosity

Not applicable.

Dynamic:

Not applicable.

Solubility

water at 20 °C:

50 g/l

Partition coefficient n-octanol/water (log value)

Not determined.

Vapour pressure:

Not applicable.

(Contd. on page 5)

**Trade name: Reagent SI3, Component 2**

(Contd. of page 4)

**Density and/or relative density**

|                   |                       |
|-------------------|-----------------------|
| Density at 20 °C: | 0.7 g/cm <sup>3</sup> |
| Relative density  | Not determined.       |
| Vapour density    | Not applicable.       |

**9.2 Other information****Appearance:**

**Form:** Powder

**Important information on protection of health and environment, and on safety.****Auto-ignition temperature:**

Not determined.

**Explosive properties:**

Product does not present an explosion hazard.

Not determined.

**Solids content:**

100.0 %

**Change in condition****Evaporation rate**

Not applicable.

**Information with regard to physical hazard classes**

|   |      |
|---|------|
| Explosives  | Void |
| Flammable gases   | Void |
| Aerosols  | Void |
| Oxidising gases   | Void |
| Gases under pressure  | Void |
| Flammable liquids   | Void |
| Flammable solids  | Void |
| Self-reactive substances and mixtures                                     | Void |
| Pyrophoric liquids  | Void |
| Pyrophoric solids   | Void |
| Self-heating substances and mixtures                                      | Void |
| Substances and mixtures, which emit flammable gases in contact with water | Void |
| Oxidising liquids   | Void |
| Oxidising solids  | Void |
| Organic peroxides   | Void |
| Corrosive to metals   | Void |
| Desensitised explosives   | Void |

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No further relevant information available.

**10.2 Chemical stability****Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

**10.3 Possibility of hazardous reactions** No dangerous reactions known.

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

**10.5 Incompatible materials:** No further relevant information available.

**10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Acute toxicity** Harmful if swallowed.

**Respiratory or skin sensitisation** May cause an allergic skin reaction.

**STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.

(Contd. on page 6)

## Trade name: Reagent SI3, Component 2

(Contd. of page 5)

## 11.2 Information on other hazards

## Endocrine disrupting properties

*Substance is not listed.*

## SECTION 12: Ecological information

## 12.1 Toxicity

**Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Remark:** *Very toxic for fish***Additional ecological information:****General notes:***Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water**Do not allow product to reach ground water, water course or sewage system.**Danger to drinking water if even small quantities leak into the ground.**Also poisonous for fish and plankton in water bodies.**Very toxic for aquatic organisms*

## SECTION 13: Disposal considerations

## 13.1 Waste treatment methods

**Recommendation***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.*

## \* SECTION 14: Transport information

## 14.1 UN number or ID number

IMDG, IATA

UN3077

## 14.2 UN proper shipping name

ADR

UN3077 ENVIRONMENTALLY HAZARDOUS  
SUBSTANCE, SOLID, N.O.S. (bis(4-hydroxy-N-  
methylanilinium) sulfate)

IMDG

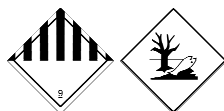
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S. (bis(4-hydroxy-N-methylanilinium)  
sulfate)

IATA

Environmentally hazardous substance, solid, n.o.s.  
(containing bis(4-hydroxy-N-methylanilinium) sulfate)

## 14.3 Transport hazard class(es)

ADR



Class

9 (M7) Miscellaneous dangerous substances and  
articles.

(Contd. on page 7)

**Trade name: Reagent SI3, Component 2**

(Contd. of page 6)

**Label** 9

**IMDG**



**Class** 9 *Miscellaneous dangerous substances and articles.*  
**Label** 9

**IATA**



**Class** 9 *Miscellaneous dangerous substances and articles.*  
**Label** 9

**14.4 Packing group**

**ADR, IMDG, IATA** III

**14.5 Environmental hazards:**

**Marine pollutant:** Yes

**Special marking (ADR):** *Symbol (fish and tree)*

**Special marking (IATA):** *Symbol (fish and tree)*

**14.6 Special precautions for user** *Warning: Miscellaneous dangerous substances and articles.*

**Hazard identification number (Kemler code):** 90

**EMS Number:** F-A, S-F

**Stowage Category** A

**Stowage Code** SW23 *When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.*

**14.7 Maritime transport in bulk according to IMO instruments** *Not applicable.*

**Transport/Additional information:**

**ADR**

**Limited quantities (LQ)** 5 kg

**Transport category** 3

**Tunnel restriction code** E

**Remarks:** *VkBl. Nr.191 (A44/27.10.71-50-04)*

**IMDG**

**Limited quantities (LQ)** 5 kg

**Excepted quantities (EQ)** *Code: E1*

*Maximum net quantity per inner packaging: 30 g*

*Maximum net quantity per outer packaging: 1000 g*

**UN "Model Regulation":** *UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (BIS(4-HYDROXY-N-METHYLANILINIUM) SULFATE), 9, III*

**SECTION 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**

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

(Contd. on page 8)

**Trade name: Reagent SI3, Component 2**

(Contd. of page 7)

**Hazard pictograms**

GHS07 GHS08 GHS09

**Signal word** *Warning***Hazard-determining components of labelling:***bis(4-hydroxy-N-methylanilinium) sulfate***Hazard statements***H302 Harmful if swallowed.**H317 May cause an allergic skin reaction.**H373 May cause damage to organs through prolonged or repeated exposure.**H410 Very toxic to aquatic life with long lasting effects.***Precautionary statements***P260 Do not breathe dust/fume/gas/mist/vapours/spray.**P280 Wear protective gloves.**P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**P330 Rinse mouth.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***Seveso category** *E1 Hazardous to the Aquatic Environment***Qualifying quantity (tonnes) for the application of lower-tier requirements** *100 t***Qualifying quantity (tonnes) for the application of upper-tier requirements** *200 t***National regulations:****Waterhazard class:** *Water hazard class 2 (Assessment by list): hazardous for water.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 4: Acute toxicity – Category 4**Skin Sens. 1: Skin sensitisation – Category 1**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1***\* Data compared to the previous version altered.**



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

### 1.1 Product identifier

Trade name:

**Standard solution SiO<sub>2</sub>**

**0 µg/l**

Synonym: 0 µg/l

CAS Number:

7732-18-5

EC number:

231-791-2

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

No further relevant information available.

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: [MSDS.PCC@endress.com](mailto:MSDS.PCC@endress.com)

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

*The substance is not classified, according to the GB CLP regulation.*

### 2.2 Label elements

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

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

### 2.3 Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

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

### 3.1 Substances

CAS No. Description

CAS: 7732-18-5 water

Identification number(s)

EC number: 231-791-2

## 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 complaints.*

(Contd. on page 2)

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**Trade name: Standard solution SiO<sub>2</sub>**

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(Contd. of page 1)

**After skin contact:** *Generally the product does not irritate the skin.*

**After eye contact:** *Rinse opened eye for several minutes under running water.*

**After swallowing:** *If symptoms persist 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.*

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**SECTION 5: Firefighting measures****5.1 Extinguishing media**

**Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.*

**For safety reasons unsuitable extinguishing agents:** *no further information*

**5.2 Special hazards arising from the substance or mixture** *No further relevant information available.*

**5.3 Advice for firefighters** *No further relevant information available.*

**Protective equipment:** *No special measures required.*

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**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.*

**6.2 Environmental precautions:** *Dilute with plenty of water.*

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

*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*

**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 disposal information.*

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**SECTION 7: Handling and storage**

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

**Information about fire - and explosion protection:** *No special measures required.*

**7.2 Conditions for safe storage, including any incompatibilities****Storage:**

**Requirements to be met by storerooms and receptacles:** *No special requirements.*

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

**Further information about storage conditions:** *None.*

**Storage class:** 12

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

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:** *Not required.*

**Additional information:** *The lists valid during the making were used as basis.*

**8.2 Exposure controls**

**Appropriate engineering controls** *No further data; see item 7.*

**Individual protection measures, such as personal protective equipment**

**General protective and hygienic measures:**

*The usual precautionary measures are to be adhered to when handling chemicals.*

**Respiratory protection:** *Not required.*

**Hand protection** *No chemical-protective gloves required.*

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(Contd. on page 3)

**Trade name: Standard solution SiO<sub>2</sub>**

(Contd. of page 2)

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**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.

**Eyeface protection** Not required.

**Body protection:** Protective work clothing

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

|   |                     |
|---|---------------------|
| <b>Physical state</b>   | Fluid               |
| <b>Colour:</b>  | Colourless          |
| <b>Odour:</b>   | Odourless           |
| <b>Odour threshold:</b>   | Not determined.     |
| <b>Melting point/freezing point:</b>                            | 0 °C                |
| <b>Boiling point or initial boiling point and boiling range</b> | 100 °C              |
| <b>Flammability</b>   | Not applicable.     |
| <b>Lower and upper explosion limit</b>                          |                     |
| <b>Lower:</b>   | Not determined.     |
| <b>Upper:</b>   | Not determined.     |
| <b>Flash point:</b>   | Not applicable.     |
| <b>pH</b>   | Not determined.     |
| <b>Viscosity:</b>   |                     |
| <b>Kinematic viscosity</b>                                      | Not determined.     |
| <b>Dynamic at 20 °C:</b>  | 0.952 mPas          |
| <b>Solubility</b>   |                     |
| <b>water:</b>   | Fully miscible.     |
| <b>Partition coefficient n-octanol/water (log value)</b>        | Not determined.     |
| <b>Vapour pressure at 20 °C:</b>                                | 23 hPa              |
| <b>Density and/or relative density</b>                          |                     |
| <b>Density at 20 °C:</b>  | 1 g/cm <sup>3</sup> |
| <b>Relative density</b>   | Not determined.     |
| <b>Vapour density</b>   | Not determined.     |

**9.2 Other information****Appearance:**

**Form:** Fluid

**Important information on protection of health and environment, and on safety.**

**Auto-ignition temperature:** Not determined.

**Explosive properties:** Product does not present an explosion hazard.  
Not determined.

**Water:** 100.0 %

**Solids content:** 0.0 %

**Change in condition**

**Evaporation rate** Not determined.

**Information with regard to physical hazard classes**

**Explosives** Void

**Flammable gases** Void

**Aerosols** Void

**Oxidising gases** Void

(Contd. on page 4)

**Trade name: Standard solution SiO2**

(Contd. of page 3)

|   |      |
|---|------|
| Gases under pressure  | Void |
| Flammable liquids   | Void |
| Flammable solids  | Void |
| Self-reactive substances and mixtures                                     | Void |
| Pyrophoric liquids  | Void |
| Pyrophoric solids   | Void |
| Self-heating substances and mixtures                                      | Void |
| Substances and mixtures, which emit flammable gases in contact with water | Void |
| Oxidising liquids   | Void |
| Oxidising solids  | Void |
| Organic peroxides   | Void |
| Corrosive to metals   | Void |
| Desensitised explosives   | Void |

**SECTION 10: Stability and reactivity****10.1 Reactivity** *No further relevant information available.***10.2 Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****11.2 Information on other hazards****Endocrine disrupting properties***Substance is not listed.***SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Additional ecological information:****General notes:** *Not hazardous for water.***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.**Smaller quantities can be disposed of with household waste.*

(Contd. on page 5)

Trade name: Standard solution SiO<sub>2</sub>

(Contd. of page 4)

**Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****14.1 UN number or ID number**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 Maritime transport in bulk according to IMO instruments** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 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** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***ADR: Accord relatif au transport international 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**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative***\* Data compared to the previous version altered.**