

19.03.2022

Kit Components

| Product code | Description |
|----------------------|--|
| CAY640-VxxAAE | CA70SI Reagent Set for silicate |

Components:

| | |
|----------|--------------------------|
| 51508826 | Reagent SI1 for silicate |
| 51508827 | Reagent SI2 for silicate |
| 51509841 | Reagent SI3 for silicate |

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:** 51508826**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:** 0091-26589391**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.**Skin Irrit. 2 H315 Causes skin irritation.***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 hydrogensulfate monohydrate**sulphuric acid***Hazard statements***H315 Causes skin irritation.**H318 Causes serious eye damage.***Precautionary statements***P280 Wear protective gloves / 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.*

Trade name: Reagent S11

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*P321 Specific treatment (see on this label).**P362+P364 Take off contaminated clothing and wash it before reuse.***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.*

| Dangerous components: | | |
|--------------------------------------|---|-------|
| CAS: 10034-88-5 EINECS: 231-665-7 | Sodium hydrogensulfate monohydrate Eye Dam. 1, H318 | 5-10% |
| CAS: 7664-93-9 EINECS: 231-639-5 | sulphuric acid Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: $C \geq 15\%$ Skin Irrit. 2; H315: $5\% \leq C < 15\%$ Eye Irrit. 2; H319: $5\% \leq C < 15\%$ | 2-6% |
| CAS: 7782-91-4 EINECS: 231-970-5 | molybdic acid 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:** *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:***CO₂, 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.*

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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.**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.**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:** *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**IOELV (EU) | Long-term value: 0.05 mg/m³**DNELs****CAS: 7664-93-9 sulphuric acid**Inhalative | DNEL short-term | 0.1 mg/m³ (worker) (local effects)| DNEL long-term | 0.05 mg/m³ (worker) (local effects)**PNECs****CAS: 7664-93-9 sulphuric acid**

PNEC | 8.8 mg/L (Wastewater treatment plant)

| 0.25 mg/L (sea water)

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.*

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Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

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

Natural rubber, NR

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 | <i>Fluid</i> |
| Colour: | <i>Colourless</i> |
| Odour: | <i>Characteristic</i> |
| Odour threshold: | <i>Not determined.</i> |
| Melting point/freezing point: | <i>Undetermined.</i> |
| Boiling point or initial boiling point and boiling range | <i>100 °C</i> |
| Flammability | <i>Not applicable.</i> |
| Lower and upper explosion limit | |
| Lower: | <i>Not determined.</i> |
| Upper: | <i>Not determined.</i> |
| Flash point: | <i>Not applicable.</i> |
| Decomposition temperature: | <i>Not determined.</i> |
| pH | <i>Acidic</i> |
| 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: | <i>23 hPa</i> |

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Trade name: Reagent S11

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Density and/or relative density

| | |
|------------------|------------------------|
| Density: | <i>Not determined.</i> |
| Relative density | <i>Not determined.</i> |
| Vapour density | <i>Not determined.</i> |

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: *>80.0 %*

Solids content: *0.0 %*

Change in condition

Evaporation rate: *Not determined.*

Information with regard to physical hazard classes

| | |
|---|-------------|
| 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.

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: 7782-91-4 molybdic acid

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

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Skin corrosion/irritation Causes skin irritation.**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.

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

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
Label**8 (C1) Corrosive substances.
8

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Trade name: Reagent S11

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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 CLP regulation.

Hazard pictograms



GHS05

Signal word *Danger*

Hazard-determining components of labelling:

Sodium hydrogensulfate monohydrate
sulphuric acid

Hazard statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

Precautionary statements

P280 Wear protective gloves / 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.

P321 Specific treatment (see on this label).

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P362+P364 Take off contaminated clothing and wash it before reuse.

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 (REACH)

PNEC: Predicted No-Effect Concentration (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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

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.

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:** 51508827**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:** 0091-26589391**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 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

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

| | | | |
|-----------------------------------|-------------|---|--------|
| CAS: 77-92-9 EINECS: 201-069-1 | citric acid |  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:**CO₂, 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.**7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.

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Trade name: Reagent SI2

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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*

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information**Physical state***Fluid***Colour:***Colourless***Odour:***Odourless***Odour threshold:***Not determined.*

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Trade name: Reagent SI2

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| | |
|--|--|
| Melting point/freezing point: | <i>Undetermined.</i> |
| Boiling point or initial boiling point and boiling range | <i>100 °C</i> |
| Flammability | <i>Not applicable.</i> |
| Lower and upper explosion limit | |
| Lower: | <i>Not determined.</i> |
| Upper: | <i>Not determined.</i> |
| Flash point: | <i>Not applicable.</i> |
| Ignition temperature: | <i>1 °C</i> |
| Decomposition temperature: | <i>Not determined.</i> |
| pH | <i>Slightly acidic</i> |
| 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: | <i>23 hPa</i> |
| Density and/or relative density | |
| Density at 20 °C: | <i>1.081 g/cm³</i> |
| Relative density | <i>Not determined.</i> |
| Vapour density | <i>Not determined.</i> |
| 9.2 Other information | |
| Appearance: | |
| Form: | <i>Fluid</i> |
| Important information on protection of health and environment, and on safety. | |
| Auto-ignition temperature: | <i>Product is not selfigniting.</i> |
| Explosive properties: | <i>Product does not present an explosion hazard. Not determined.</i> |
| Solvent content: | |
| Water: | <i>>80.0 %</i> |
| Solids content: | <i>0.0 %</i> |
| Change in condition | |
| Evaporation rate | <i>Not determined.</i> |
| Information with regard to physical hazard classes | |
| 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> |

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Trade name: Reagent SI2

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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.

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.*

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Trade name: Reagent SI2

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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 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.*

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

(Contd. on page 7)

— IND —

Trade name: Reagent SI2

(Contd. of page 6)

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.**

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** Reagent SI3**Synonym:** *for silicate***Article number:** 51509841**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:** 0091-26589391**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 CLP regulation.***Hazard pictograms**

GHS05

Signal word *Danger***Hazard-determining components of labelling:***disodium disulphite***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 POISON CENTER/doctor.***Additional information:***EUH031 Contact with acids liberates toxic gas.***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.*

Trade name: Reagent SI3

(Contd. of page 1)

vPvB: Not applicable.

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

| Dangerous components: | | |
|-----------------------|--|-------|
| CAS: 124-68-5 | 2-amino-2-methylpropanol | 5-10% |
| EINECS: 204-709-8 | ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Aquatic Chronic 3, H412 | |
| CAS: 7681-57-4 | disodium disulphite | 2-6% |
| EINECS: 231-673-0 | ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302, EUH031 | |

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:**CO₂, 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.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

(Contd. on page 3)

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Trade name: Reagent SI3

(Contd. of page 2)

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:

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

(Contd. on page 4)

IND

Trade name: Reagent SI3

(Contd. of page 3)

Body protection: *Protective work clothing***SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

| | |
|--|--------------------------|
| Physical state | <i>Fluid</i> |
| Colour: | <i>Yellowish</i> |
| Odour: | <i>Pungent</i> |
| Odour threshold: | <i>Not determined.</i> |
| Melting point/freezing point: | <i>Undetermined.</i> |
| Boiling point or initial boiling point and boiling range | <i>Undetermined.</i> |
| Flammability | <i>Not applicable.</i> |
| Lower and upper explosion limit | |
| Lower: | <i>Not determined.</i> |
| Upper: | <i>Not determined.</i> |
| Flash point: | <i>Not applicable.</i> |
| Decomposition temperature: | <i>Not determined.</i> |
| pH | <i>Slightly alkaline</i> |
| 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: | <i>23 hPa</i> |
| Density and/or relative density | |
| Density: | <i>Not determined.</i> |
| Relative density | <i>Not determined.</i> |
| Vapour density | <i>Not determined.</i> |

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:****Organic solvents:***7.5 %***Water:***>80.0 %***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***Gases under pressure***Void***Flammable liquids***Void***Flammable solids***Void***Self-reactive substances and mixtures***Void***Pyrophoric liquids***Void***Pyrophoric solids***Void*

(Contd. on page 5)

Trade name: Reagent SI3

(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

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.

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.

(Contd. on page 6)

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Trade name: Reagent SI3

(Contd. of page 5)

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 CLP regulation.***Hazard pictograms**

GHS05

Signal word *Danger***Hazard-determining components of labelling:***disodium disulphite***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 POISON CENTER/doctor.***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***H302 Harmful if swallowed.**H315 Causes skin irritation.**H318 Causes serious eye damage.**H319 Causes serious eye irritation.*

(Contd. on page 7)

Trade name: Reagent SI3

(Contd. of page 6)

*H412 Harmful to aquatic life with long lasting effects.**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:***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)**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**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3**** Data compared to the previous version altered.**

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