

Kit Components

Product code	Description
CAY546-VxxAAH	CA7xCL Reagent set for total chlorine

Components:

51513037	Reagent CL1, Component 1 for chlorine
51513039	Reagent CL1, Component 2 for chlorine
51513040	Reagent CL2, Component 1 for chlorine
51513041	Reagent CL2, Component 2 for chlorine

SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: **Reagent CL1, Component 1**

Synonym: *for chlorine*

Article number: 51513037

Recommended use of the chemical and restrictions on use *No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

Supplier's details

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

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

The product is not classified, according to the Globally Harmonised System (GHS).

GHS label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

* SECTION 3: Composition or information on ingredients

Mixtures

Description: *Mixture of non-hazardous substances*

Dangerous components: *Void*

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

SECTION 4: First-aid measures

Description of necessary first-aid measures

General information: *No special measures required.*

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.*

After swallowing: *If symptoms persist consult doctor.*

Most important symptoms or effects, acute and delayed *No further relevant information available.*

Indication of immediate medical attention and special treatment needed, if necessary

No further relevant information available.

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Trade name: Reagent CL1, Component 1

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SECTION 5: Fire-fighting measures

Suitable extinguishing media**Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.***For safety reasons unsuitable extinguishing agents:** *no further information***Specific hazards arising from the chemical:** *No further relevant information available.***Special protective actions for fire fighters:** *No further relevant information available.***Protective equipment:** *No special measures required.*

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: *Wear protective clothing.***Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***Methods and material for containment and cleaning up:** *Pick up mechanically.***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

Precautions for safe handling: *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***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:** 13**Specific end use(s):** *No further relevant information available.*

SECTION 8: Exposure controls or personal protection

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.***Exposure controls****Appropriate engineering controls:** *No further data; see section 7.***Individual protection measures, such as personal protective equipment (PPE)****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.***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. 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.*

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Trade name: Reagent CL1, Component 1

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Eye or face protection *Not required.*Body protection: *Protective work clothing***SECTION 9: Physical and chemical properties**

Information on basic physical and chemical properties

General Information

Physical state	<i>Solid</i>
Colour:	<i>White</i>
Odour:	<i>Odourless</i>
Odour threshold:	<i>Not determined.</i>
Melting point/freezing point:	<i>Undetermined.</i>
نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان	<i>Undetermined.</i>
Flammability	<i>Not determined.</i>
Upper or lower flammability or explosive limits	
Lower:	<i>Not determined.</i>
Upper:	<i>Not determined.</i>
Flash point:	<i>Not applicable.</i>
pH	<i>Not applicable.</i>
Viscosity:	
Viscosity	<i>Not applicable.</i>
Dynamic:	<i>Not applicable.</i>
Solubility	
water:	<i>Soluble.</i>
Partition coefficient: n-octanol or water	<i>Not determined.</i>
Vapour pressure:	<i>Not applicable.</i>
Vapour density + Relative density	
Density:	<i>Not determined.</i>
Relative density	<i>Not determined.</i>
Vapour density	<i>Not applicable.</i>

Other information

Appearance:

Form: *Powder*

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

Ignition temperature:

Product is not selfigniting.

Explosive properties:

*Product does not present an explosion hazard.
Not determined.*

Solvent content:

Solids content:

100.0 %

Change in condition

Evaporation rate

Not applicable.

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>

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Trade name: Reagent CL1, Component 1

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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**Reactivity** No further relevant information available.**Chemical stability****Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.**Conditions to avoid** No further relevant information available.**Incompatible materials:** No further relevant information available.**Hazardous decomposition products:** No dangerous decomposition products known.**SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** Based on available data, the classification criteria are not met.**Skin corrosion or irritation** Based on available data, the classification criteria are not met.**Serious eye damage or irritation** Based on available data, the classification criteria are not met.**Respiratory and skin sensitization** Based on available data, the classification criteria are not met.**Germ cell mutagenicity** Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity** Based on available data, the classification criteria are not met.**Specific target organ toxicity – single exposure**

Based on available data, the classification criteria are not met.

Specific target organ toxicity – repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazards Based on available data, the classification criteria are not met.**Information on other hazards****endocrine disrupting potential**

None of the ingredients is listed.

SECTION 12: Ecological information**Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

Other adverse effects**Additional ecological information:****General notes:**

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

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Trade name: Reagent CL1, Component 1

(Contd. of page 4)

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

SECTION 13: Disposal considerations**Waste treatment methods**

Recommendation *Smaller quantities can be disposed of with household waste.*

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**UN number**

ADN, IMDG, IATA *Void*

UN proper shipping name

ADR, ADN, IMDG, IATA *Void*

Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class *Void*

Packing group

ADR, IMDG, IATA *Void*

Environmental hazards:

Marine pollutant: *No*

Special precautions for user *Not applicable.*

Transport in bulk according to Annex II of

MARPOL 73/78 and the IBC Code *Not applicable.*

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

UN "Model Regulation": *Void*

SECTION 15: Regulatory information**Safety, health and environmental regulations specific for the product in question**

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

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.*

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.

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

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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Safety data Sheet

in accordance with SANS

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Printing date 19.09.2024

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Revision: 19.09.2024

Trade name: Reagent CL1, Component 1

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.**

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SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: **Reagent CL1, Component 2**

Synonym: *for chlorine*

Article number: 51513039

CAS Number:

7681-11-0

EC number:

231-659-4

Recommended use of the chemical and restrictions on use *No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

Supplier's details

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

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

The substance is not classified, according to the Globally Harmonised System (GHS).

GHS label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

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 or information on ingredients

Substances

CAS No. Description

CAS: 7681-11-0 potassium iodide

Identification number(s)

EC number: 231-659-4

SECTION 4: First-aid measures

Description of necessary first-aid measures

General information: *No special measures required.*

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.*

(Contd. on page 2)

Trade name: Reagent CL1, Component 2

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After swallowing: *If symptoms persist consult doctor.***Most important symptoms or effects, acute and delayed** *No further relevant information available.***Indication of immediate medical attention and special treatment needed, if necessary***No further relevant information available.***SECTION 5: Fire-fighting measures****Suitable 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***Specific hazards arising from the chemical** *No further relevant information available.***Special protective actions for fire fighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***Methods and material for containment and cleaning up:** *Pick up mechanically.***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****Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***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**Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls or personal protection****Control parameters****Ingredients with limit values that require monitoring at the workplace:** *Not required.***DNELs****CAS: 7681-11-0 potassium iodide**

Oral	DNEL long term exposure	0.01 mg/kg /bw/day (consumer) (systemic effect)
Dermal	DNEL long term	1 mg/kg /bw/day (worker) (systemic effect) 1 mg/kg /bw/day (consumer) (systemic effect)
Inhalative	DNEL long-term	0.07 mg/m ³ (worker) (systemic effect) 0.035 mg/m ³ (consumer) (systemic effect)

PNECs**CAS: 7681-11-0 potassium iodide**

PNEC	0.007 mg/L (fresh water)
PNEC	0.007 mg/kg (freshwater sediment)

(Contd. on page 3)

Trade name: Reagent CL1, Component 2

(Contd. of page 2)

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

Exposure controls

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

Individual protection measures, such as personal protective equipment (PPE)

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.*

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.

Eye or face protection *Not required.*

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

General Information

Physical state

Solid

Colour:

White

Odour:

Odourless

Odour threshold:

Not determined.

Melting point/freezing point:

681 °C

نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان

1,330 °C

Flammability

Product is not flammable.

Upper or lower flammability or explosive limits

Lower:

Not determined.

Upper:

Not determined.

Flash point:

Not applicable.

Decomposition temperature:

Not determined.

pH

Not applicable.

Viscosity:

Viscosity

Not applicable.

Dynamic:

Not applicable.

Solubility

water at 20 °C:

1.4 g/l

Partition coefficient: n-octanol or water

Not determined.

Vapour pressure:

Not applicable.

Vapour density + Relative density

Density at 20 °C:

3.13 g/cm³

Relative density

Not determined.

Vapour density

Not applicable.

Other information

Appearance:

Form:

Solid material

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

Ignition temperature:

Not determined.

Explosive properties:

Product does not present an explosion hazard.

Not determined.

Solids content:

100.0 %

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Trade name: Reagent CL1, Component 2

(Contd. of page 3)

Molecular weight	166.01 g/mol
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**Reactivity** No further relevant information available.**Chemical stability****Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.**Conditions to avoid** No further relevant information available.**Incompatible materials:** No further relevant information available.**Hazardous decomposition products:** No dangerous decomposition products known.**SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** Based on available data, the classification criteria are not met.**Skin corrosion or irritation** Based on available data, the classification criteria are not met.**Serious eye damage or irritation** Based on available data, the classification criteria are not met.**Respiratory and skin sensitization** Based on available data, the classification criteria are not met.**Germ cell mutagenicity** Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity** Based on available data, the classification criteria are not met.**Specific target organ toxicity – single exposure**

Based on available data, the classification criteria are not met.

Specific target organ toxicity – repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazards Based on available data, the classification criteria are not met.**Information on other hazards****endocrine disrupting potential**

Substance is not listed.

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Trade name: Reagent CL1, Component 2

(Contd. of page 4)

SECTION 12: Ecological information**Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

Other adverse effects**Additional ecological information:****General notes:**

Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water

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

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

SECTION 13: Disposal considerations**Waste treatment methods****Recommendation** Smaller quantities can be disposed of with household waste.**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****UN number****ADN, IMDG, IATA** Void**UN proper shipping name****ADR, ADN, IMDG, IATA** Void**Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** Void**Packing group****ADR, IMDG, IATA** Void**Environmental hazards:****Marine pollutant:** No**Special precautions for user** Not applicable.**Transport in bulk according to Annex II of****MARPOL 73/78 and the IBC Code** Not applicable.**Transport/Additional information:**

Not dangerous according to the above specifications.

UN "Model Regulation": Void**SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements** Void**Hazard pictograms** Void**Signal word** Void**Hazard statements** Void

(Contd. on page 6)

Trade name: Reagent CL1, Component 2

(Contd. of page 5)

Directive 2012/18/EU**Named dangerous substances - ANNEX I** *Substance is not listed.***National regulations:****Waterhazard class:** *Water hazard class 3 (Assessment by list): extremely hazardous for water.***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.

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**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**DNEL: Derived No-Effect Level (REACH)**PNEC: Predicted No-Effect Concentration (REACH)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**** Data compared to the previous version altered.**

SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: **Reagent CL2, Component 1**

Synonym: *for chlorine*

Article number: 51513040

Recommended use of the chemical and restrictions on use *No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

Supplier's details

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

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

The product is not classified, according to the Globally Harmonised System (GHS).

GHS label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

* SECTION 3: Composition or information on ingredients

Mixtures

Description: *aqueous solution*

Dangerous components: *Void*

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

SECTION 4: First-aid measures

Description of necessary first-aid measures

General information: *No special measures required.*

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.*

After swallowing: *If symptoms persist consult doctor.*

Most important symptoms or effects, acute and delayed *No further relevant information available.*

Indication of immediate medical attention and special treatment needed, if necessary

No further relevant information available.

(Contd. on page 2)

Trade name: Reagent CL2, Component 1

(Contd. of page 1)

SECTION 5: Fire-fighting measures

Suitable extinguishing media**Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.***For safety reasons unsuitable extinguishing agents:** *no further information***Specific hazards arising from the chemical:** *No further relevant information available.***Special protective actions for fire fighters:** *No further relevant information available.***Protective equipment:** *No special measures required.*

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: *Wear protective clothing.***Environmental precautions:** *Dilute with plenty of water.***Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).***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

Precautions for safe handling: *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***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***Specific end use(s):** *No further relevant information available.*

SECTION 8: Exposure controls or personal protection

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.***Exposure controls****Appropriate engineering controls:** *No further data; see section 7.***Individual protection measures, such as personal protective equipment (PPE)****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.***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. 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.*

(Contd. on page 3)

Trade name: Reagent CL2, Component 1

(Contd. of page 2)

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 or face protection *Not required.*

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****General Information****Physical state***Fluid***Colour:***Colourless***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***0 °C***نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان***100 °C***Flammability***Not applicable.***Upper or lower flammability or explosive limits****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***pH at 20 °C***<2***Viscosity:****Viscosity***Not determined.***Dynamic:***Not determined.***Solubility****water:***Fully miscible.***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure at 20 °C:***23 hPa***Vapour density + Relative density****Density at 20 °C:***1 g/cm³***Relative density***Not determined.***Vapour density***Not determined.***Other information****Appearance:****Form:***Fluid***Important information on protection of health and environment, and on safety.****Ignition temperature:***Product is not selfigniting.***Explosive properties:**

*Product does not present an explosion hazard.
Not determined.*

Solvent content:**Water:***99.8 %***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*

(Contd. on page 4)

Trade name: Reagent CL2, Component 1

(Contd. of page 3)

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**Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.***Skin corrosion or irritation** *Based on available data, the classification criteria are not met.***Serious eye damage or irritation** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *Based on available data, the classification criteria are not met.***Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***Carcinogenicity** *Based on available data, the classification criteria are not met.***Reproductive toxicity** *Based on available data, the classification criteria are not met.***Specific target organ toxicity – single exposure***Based on available data, the classification criteria are not met.***Specific target organ toxicity – repeated exposure***Based on available data, the classification criteria are not met.***Aspiration hazards** *Based on available data, the classification criteria are not met.***Information on other hazards****endocrine disrupting potential***None of the ingredients is listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.*

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Trade name: Reagent CL2, Component 1

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Other adverse effects**Additional ecological information:****General notes:***Not hazardous for water.**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****Waste treatment methods****Recommendation** *Smaller quantities can be disposed of with household waste.***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****UN number****ADN, IMDG, IATA** *Void***UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***Packing group****ADR, IMDG, IATA** *Void***Environmental hazards:****Marine pollutant:** *No***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.***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.***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*

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Trade name: Reagent CL2, Component 1

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*IATA: International Air Transport Association**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**** Data compared to the previous version altered.**

—ZA—

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** Reagent CL2, Component 2**Synonym:** *for chlorine***Article number:** 51513041**CAS Number:**

6283-63-2

EC number:

228-500-6

Recommended use of the chemical and restrictions on use *No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***Supplier's details****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***Emergency phone number** +27 (0)861 555 777**SECTION 2: Hazard identification****Classification of the substance or mixture***Acute Tox. 4 H302 Harmful if swallowed.***GHS label elements****GHS label elements***The substance is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS07

Signal word *Warning***Hazard-determining components of labelling:***N,N-diethylbenzene-1,4-diammonium sulphate***Hazard statements***Harmful if swallowed.***Precautionary statements***Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**Rinse mouth.**Dispose of contents/container in accordance with local/regional/national/international regulations.***Other hazards****Results of PBT and vPvB assessment****PBT:** *Not applicable.*

Trade name: Reagent CL2, Component 2

(Contd. of page 1)

vPvB: Not applicable.

SECTION 3: Composition or information on ingredients**Substances****CAS No. Description**CAS: 6283-63-2 *N,N*-diethylbenzene-1,4-diammonium sulphate**Identification number(s)**

EC number: 228-500-6

SECTION 4: First-aid measures**Description of necessary first-aid measures****General information:**

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; 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.*

After swallowing: *Call for a doctor immediately.*

Most important symptoms or effects, acute and delayed *No further relevant information available.*

Indication of immediate medical attention and special treatment needed, if necessary

No further relevant information available.

SECTION 5: Fire-fighting measures**Suitable extinguishing media**

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

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

Specific hazards arising from the chemical *No further relevant information available.*

Special protective actions for fire fighters *No further relevant information available.*

Protective equipment: *No special measures required.*

SECTION 6: Accidental release measures

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

Environmental precautions: *Do not allow to enter sewers/ surface or ground water.*

Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to section 13.

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

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

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

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.*

(Contd. on page 3)

Trade name: Reagent CL2, Component 2

(Contd. of page 2)

Storage class: 11**Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls or personal protection****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.***Exposure controls****Appropriate engineering controls** *No further data; see section 7.***Individual protection measures, such as personal protective equipment (PPE)****General protective and hygienic measures:***Keep away from foodstuffs, beverages and feed.**Wash hands before breaks and at the end of work.***Respiratory protection:** *Not required.***Hand protection***To avoid skin problems reduce the wearing of gloves to the required minimum.**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.***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.***Body protection:** *Protective work clothing**** SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****General Information****Physical state***Solid***Colour:***White***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***184-187 °C***نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان***Undetermined.***Flammability***Product is not flammable.***Upper or lower flammability or explosive limits****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***pH***Not applicable.***Viscosity:****Viscosity***Not applicable.***Dynamic:***Not applicable.***Solubility****water at 20 °C:***1000 g/l***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure:***Not applicable.***Vapour density + Relative density****Density at 20 °C:***0.5 g/cm³***Relative density***Not determined.***Vapour density***Not applicable.*

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Trade name: Reagent CL2, Component 2

(Contd. of page 3)

Other information

Appearance:

Form:

Crystalline powder

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

Ignition temperature:

Not determined.

Explosive properties:

Product does not present an explosion hazard.

Not determined.

Solids content:

100.0 %

Molecular weight

262.33 g/mol

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

Reactivity *No further relevant information available.*

Chemical stability

Thermal decomposition / conditions to be avoided:

*No decomposition if used according to specifications.*Possibility of hazardous reactions *No dangerous reactions known.*Conditions to avoid *No further relevant information available.*Incompatible materials: *No further relevant information available.*Hazardous decomposition products: *No dangerous decomposition products known.*

SECTION 11: Toxicological information

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

Acute toxicity *Harmful if swallowed.*

Information on other hazards

endocrine disrupting potential

Substance is not listed.

SECTION 12: Ecological information

Toxicity

Aquatic toxicity: *No further relevant information available.*

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Trade name: Reagent CL2, Component 2

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Persistence and degradability *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***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****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****UN number****ADN, IMDG, IATA** *Void***UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***Packing group****ADR, IMDG, IATA** *Void***Environmental hazards:** *Not applicable.***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of****MARPOL 73/78 and the IBC Code** *Not applicable.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements***The substance is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS07

Signal word *Warning***Hazard-determining components of labelling:***N,N-diethylbenzene-1,4-diammonium sulphate*

(Contd. on page 6)

Trade name: Reagent CL2, Component 2

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Hazard statements*Harmful if swallowed.***Precautionary statements***Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**Rinse mouth.**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.***National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***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.

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