

03/19/2022

Kit Components

| Product code | Description |
|--------------|-------------|
|--------------|-------------|

| | |
|----------------------|--|
| CAY546-VxxAAE | CA7xCL Reagent Set for total chlorine |
|----------------------|--|

Components:

| | |
|----------|--------------------------------|
| 71255128 | Reagent CL1 for total chlorine |
|----------|--------------------------------|

| | |
|----------|--------------------------|
| 71252292 | Reagent CL2 for chlorine |
|----------|--------------------------|

1 Identification

Product identifier

Trade name: **Reagent CL1**

Synonym: *for total chlorine*

Article number: 71255128

Application of the substance / the mixture *Laboratory chemicals*

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Endress+Hauser Conducta Inc.
4123 E. La Palma Ave., Suite 200
Anaheim
CA 92807-1813
USA

Information department:

Phone: +49 (0)7156 209-10117
E-Mail: MSDS.PCC@endress.com

Emergency telephone number: 001 18000 222 1222

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements

GHS label elements *Void*

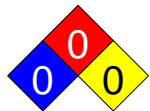
Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Classification system:

NFPA ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: *aqueous solution*

Dangerous components:

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

5-10%

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

(Contd. on page 2)

— USA —

Trade name: Reagent CL1

(Contd. of page 1)

4 First-aid measures

Description of 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.*

Information for doctor:

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* 5 Fire-fighting measures

Extinguishing media

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

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

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

Advice for firefighters *No further relevant information available.*

Protective equipment: *No special measures required.*

6 Accidental release measures

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

Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground 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.

Protective Action Criteria for Chemicals

| | | |
|----------------|------------------|-----------------------|
| PAC-1: | | |
| CAS: 7681-11-0 | potassium iodide | 1.3 mg/m ³ |
| PAC-2: | | |
| CAS: 7681-11-0 | potassium iodide | 15 mg/m ³ |
| PAC-3: | | |
| CAS: 7681-11-0 | potassium iodide | 87 mg/m ³ |

7 Handling and storage

Precautions for safe handling *No special measures required.*

Information about protection against explosions and fires: *No special measures required.*

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 CL1

(Contd. of page 2)

Storage class: 12

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

*** 8 Exposure controls/personal protection**

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

Control parameters**Components with limit values that require monitoring at the workplace:****CAS: 7681-11-0 potassium iodide**TLV Long-term value: 0.01 ppm
A4; Skin; *inhalation

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls**Personal protective equipment:****General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.**Protection of hands:** 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.

Eye protection: Not required.**Body protection:** Protective work clothing**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Characteristic |
| Odor threshold: | Not determined. |
| pH-value: | Not determined. |

Change in condition

| | |
|-------------------------------------|-----------------|
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 100 °C (212 °F) |

Flash point: Not applicable.**Flammability (solid, gaseous):** Not applicable.**Auto igniting:** Product is not selfigniting.**Danger of explosion:** Product does not present an explosion hazard.
Not determined.**Explosion limits:****Lower:** Not determined.

(Contd. on page 4)

Trade name: Reagent CL1

(Contd. of page 3)

| | |
|---|---|
| Upper: | <i>Not determined.</i> |
| Vapor pressure at 20 °C (68 °F): | <i>23 hPa (17.3 mm Hg)</i> |
| Density: | <i>Not determined.</i> |
| Relative density | <i>Not determined.</i> |
| Vapor density | <i>Not determined.</i> |
| Evaporation rate | <i>Not determined.</i> |
| Solubility in / Miscibility with | |
| Water: | <i>Fully miscible.</i> |
| Partition coefficient (n-octanol/water): | <i>Not determined.</i> |
| Viscosity: | |
| Dynamic: | <i>Not determined.</i> |
| Kinematic: | <i>Not determined.</i> |
| Solvent content: | |
| Water: | <i>85.4 %</i> |
| Solids content: | <i>0.0 %</i> |
| Other information | <i>No further relevant information available.</i> |

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.*

11 Toxicological information**Information on toxicological effects****Acute toxicity:****Primary irritant effect:**

on the skin: *No irritant effect.*

on the eye: *No irritating effect.*

Sensitization: *No sensitizing effects known.*

Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

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

12 Ecological information**Toxicity**

Aquatic toxicity: *No further relevant information available.*

Persistence and degradability *No further relevant information available.*

Behavior in environmental systems:

Bioaccumulative potential *No further relevant information available.*

Mobility in soil *No further relevant information available.*

Additional ecological information:**General notes:**

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

(Contd. on page 5)

Trade name: Reagent CL1

(Contd. of page 4)

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

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

Other adverse effects *No further relevant information available.*

13 Disposal considerations

Waste treatment methods

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

Uncleaned packagings:

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

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

***14 Transport information**

UN-Number

DOT, ADN, IMDG, IATA *Void*

UN proper shipping name

DOT, ADN, IMDG, IATA *Void*

Transport hazard class(es)

DOT, ADN, IMDG, IATA

Class *Void*

Packing group

DOT, IMDG, IATA *Void*

Environmental hazards:

Marine pollutant: *No*

Special precautions for user *Not applicable.*

Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code *Not applicable.*

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

UN "Model Regulation": *Void*

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

| | | |
|----------------|------------------------------------|--------|
| CAS: 7732-18-5 | water | ACTIVE |
| CAS: 7681-11-0 | potassium iodide | ACTIVE |
| CAS: 7778-77-0 | potassium dihydrogenorthophosphate | ACTIVE |
| CAS: 7558-79-4 | disodium hydrogenorthophosphate | ACTIVE |

Hazardous Air Pollutants

None of the ingredients is listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

(Contd. on page 6)

Trade name: Reagent CL1

(Contd. of page 5)

Chemicals known to cause reproductive toxicity for females:*None of the ingredients is listed.***Chemicals known to cause reproductive toxicity for males:***None of the ingredients is listed.***Chemicals known to cause developmental toxicity:***None of the ingredients is listed.***Carcinogenicity categories****EPA (Environmental Protection Agency)***None of the ingredients is listed.***TLV (Threshold Limit Value)***None of the ingredients is listed.***MAK (German Maximum Workplace Concentration)***None of the ingredients is listed.***NIOSH-Ca (National Institute for Occupational Safety and Health)***None of the ingredients is listed.***GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***National regulations:****Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***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***Date of preparation / last revision** *03/19/2022 / 5***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**DOT: US Department of Transportation**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)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**** Data compared to the previous version altered.**

1 Identification

Product identifier

Trade name: **Reagent CL2**

Synonym: *for chlorine*

Article number: 71252292

Application of the substance / the mixture *Laboratory chemicals*

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Endress+Hauser Conducta Inc.
4123 E. La Palma Ave., Suite 200
Anaheim
CA 92807-1813
USA

Information department:

Phone: +49 (0)7156 209-10117
E-Mail: MSDS.PCC@endress.com

Emergency telephone number: 001 18000 222 1222

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements

GHS label elements *Void*

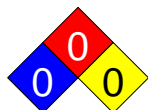
Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Classification system:

NFPA ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: *aqueous solution*

Dangerous components: *Void*

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

(Contd. on page 2)

— USA —

Trade name: Reagent CL2

(Contd. of page 1)

4 First-aid measures

Description of 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.*

Information for doctor:

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* 5 Fire-fighting measures

Extinguishing media

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

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

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

Advice for firefighters *No further relevant information available.*

Protective equipment: *No special measures required.*

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.

7 Handling and storage

Precautions for safe handling *No special measures required.*

Information about protection against explosions and fires: *No special measures required.*

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.*

8 Exposure controls/personal protection

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

Control parameters

Components with limit values that require monitoring at the workplace:

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

(Contd. on page 3)

Trade name: Reagent CL2

(Contd. of page 2)

Additional information: *The lists that were valid during the creation were used as basis.***Exposure controls****Personal protective equipment:****General protective and hygienic measures:***The usual precautionary measures for handling chemicals should be followed.***Breathing equipment:** *Not required.***Protection of hands:** *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.***Eye protection:** *Not required.***Body protection:** *Protective work clothing***9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

| | |
|------------------------|------------------------|
| Form: | <i>Liquid</i> |
| Color: | <i>Colorless</i> |
| Odor: | <i>Odorless</i> |
| Odor threshold: | <i>Not determined.</i> |
| pH-value: | <i>Not determined.</i> |

Change in condition

| | |
|-------------------------------------|------------------------|
| Melting point/Melting range: | <i>0 °C (32 °F)</i> |
| Boiling point/Boiling range: | <i>100 °C (212 °F)</i> |

Flash point: *Not applicable.***Flammability (solid, gaseous):** *Not applicable.***Auto igniting:** *Product is not selfigniting.***Danger of explosion:** *Product does not present an explosion hazard.
Not determined.***Explosion limits:**

| | |
|---------------|------------------------|
| Lower: | <i>Not determined.</i> |
| Upper: | <i>Not determined.</i> |

Vapor pressure at 20 °C (68 °F): *23 hPa (17.3 mm Hg)***Density at 20 °C (68 °F):** *1.01 g/cm³ (8.428 lbs/gal)***Relative density** *Not determined.***Vapor density** *Not determined.***Evaporation rate** *Not determined.***Solubility in / Miscibility with****Water:** *Fully miscible.***Partition coefficient (n-octanol/water):** *Not determined.*

(Contd. on page 4)

Trade name: Reagent CL2

(Contd. of page 3)

Viscosity:**Dynamic:** *Not determined.***Kinematic:** *Not determined.***Solvent content:****Water:** 99.6 %**Solids content:** 0.0 %**Other information***No further relevant information available.*

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.*

11 Toxicological information

Information on toxicological effects**Acute toxicity:****Primary irritant effect:****on the skin:** *No irritant effect.***on the eye:** *No irritating effect.***Sensitization:** *No sensitizing effects known.***Additional toxicological information:***The product is not subject to classification according to internally approved calculation methods for preparations:**When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.*

12 Ecological information

Toxicity**Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Behavior in environmental systems:****Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Additional ecological information:****General notes:** *Not hazardous for water.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Other adverse effects** *No further relevant information available.*

13 Disposal considerations

Waste treatment methods**Recommendation:** *Smaller quantities can be disposed of with household waste.***Uncleaned packagings:****Recommendation:** *Disposal must be made according to official regulations.*

(Contd. on page 5)

Trade name: Reagent CL2

(Contd. of page 4)

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

***14 Transport information**

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

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.

Sara

| | |
|--|------------------------------|
| Section 355 (extremely hazardous substances): | |
| CAS: 7664-93-9 | <i>sulphuric acid</i> |
| Section 313 (Specific toxic chemical listings): | |
| CAS: 7664-93-9 | <i>sulphuric acid</i> |
| TSCA (Toxic Substances Control Act): | |
| CAS: 7732-18-5 | <i>water</i> ACTIVE |
| CAS: 7664-93-9 | <i>sulphuric acid</i> ACTIVE |
| Hazardous Air Pollutants | |
| <i>None of the ingredients is listed.</i> | |
| Proposition 65 | |
| Chemicals known to cause cancer: | |
| <i>None of the ingredients is listed.</i> | |
| Chemicals known to cause reproductive toxicity for females: | |
| <i>None of the ingredients is listed.</i> | |
| Chemicals known to cause reproductive toxicity for males: | |
| <i>None of the ingredients is listed.</i> | |
| Chemicals known to cause developmental toxicity: | |
| <i>None of the ingredients is listed.</i> | |
| Carcinogenicity categories | |
| EPA (Environmental Protection Agency) | |
| <i>None of the ingredients is listed.</i> | |
| TLV (Threshold Limit Value) | |
| CAS: 7664-93-9 | <i>sulphuric acid</i> A2 |

(Contd. on page 6)

Trade name: Reagent CL2

(Contd. of page 5)

| | |
|---|---|
| MAK (German Maximum Workplace Concentration) | |
| CAS: 7664-93-9 sulphuric acid | 4 |

| |
|---|
| NIOSH-Ca (National Institute for Occupational Safety and Health) |
| <i>None of the ingredients is listed.</i> |

GHS label elements *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***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***Date of preparation / last revision** *03/19/2022 / 4***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

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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