

**Kit Components**

Product code	Description
<b>CAY546-VxxAAH</b>	<b>CA7xCL Reagent set for total chlorine</b>

## 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/mixture and of the company/undertaking

### 1.1 Product identifier

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

Synonym: *for chlorine*

Article number: 51513037

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

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

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

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

### 2.2 Label elements

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

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

### 2.3 Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

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

### 3.2 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

### 4.1 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.*

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

*No further relevant information available.*

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

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**4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:** *Pick up mechanically.***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 measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 13**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 section 7.***Individual protection measures, such as personal protective equipment****General protective and hygienic measures:***The usual precautionary measures are to be adhered to when handling chemicals.***Respiratory protection:** *Not required.***Hand protection** *No chemical-protective gloves required.***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.*

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**Penetration time of glove material**

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

**Eyeface protection** *Not required.*

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

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

<b>Physical state</b>	<i>Solid</i>
<b>Colour:</b>	<i>White</i>
<b>Odour:</b>	<i>Odourless</i>
<b>Odour threshold:</b>	<i>Not determined.</i>
<b>Melting point/freezing point:</b>	<i>Undetermined.</i>
<b>Boiling point or initial boiling point and boiling range</b>	<i>Undetermined.</i>
<b>Flammability</b>	<i>Not determined.</i>
<b>Lower and upper explosion limit</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
<b>Flash point:</b>	<i>Not applicable.</i>
<b>pH</b>	<i>Not applicable.</i>
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	<i>Not applicable.</i>
<b>Dynamic:</b>	<i>Not applicable.</i>
<b>Solubility</b>	
<b>water:</b>	<i>Soluble.</i>
<b>Partition coefficient n-octanol/water (log value)</b>	<i>Not determined.</i>
<b>Vapour pressure:</b>	<i>Not applicable.</i>
<b>Density and/or relative density</b>	
<b>Density:</b>	<i>Not determined.</i>
<b>Relative density</b>	<i>Not determined.</i>
<b>Vapour density</b>	<i>Not applicable.</i>

**9.2 Other information**

<b>Appearance:</b>	
<b>Form:</b>	<i>Powder</i>
<b>Important information on protection of health and environment, and on safety.</b>	
<b>Ignition temperature:</b>	<i>Product is not selfigniting.</i>
<b>Explosive properties:</b>	<i>Product does not present an explosion hazard. Not determined.</i>
<b>Solvent content:</b>	
<b>Solids content:</b>	<i>100.0 %</i>
<b>Change in condition</b>	
<b>Evaporation rate</b>	<i>Not applicable.</i>

**Information with regard to physical hazard classes**

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

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## Trade name: Reagent CL1, Component 1

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

**SECTION 10: Stability and reactivity**

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

**10.2 Chemical stability**

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

*No decomposition if used according to specifications.*

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

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

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

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

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

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

**Skin corrosion/irritation** *Based on available data, the classification criteria are not met.*

**Serious eye damage/irritation** *Based on available data, the classification criteria are not met.*

**Respiratory or skin sensitisation** *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.*

**STOT-single exposure** *Based on available data, the classification criteria are not met.*

**STOT-repeated exposure** *Based on available data, the classification criteria are not met.*

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

**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*

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

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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** *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****14.1 UN number or ID number**

ADN, IMDG, IATA *Void*

**14.2 UN proper shipping name**

ADR, ADN, IMDG, IATA *Void*

**14.3 Transport hazard class(es)**

ADR, ADN, IMDG, IATA

Class *Void*

**14.4 Packing group**

ADR, IMDG, IATA *Void*

**14.5 Environmental hazards:**

Marine pollutant: *No*

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

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

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

**UN "Model Regulation":** *Void*

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**Poisons Act****Regulated explosives precursors**

*None of the ingredients is listed.*

**Regulated poisons**

*None of the ingredients is listed.*

**Reportable explosives precursors**

*None of the ingredients is listed.*

**Reportable poisons**

*None of the ingredients is listed.*

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

**Hazard pictograms** *Void*

**Signal word** *Void*

**Hazard statements** *Void*

**Directive 2012/18/EU**

**Named dangerous substances - ANNEX I** *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.*

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

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**SECTION 16: Other information**

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

**16.3 Recommended restriction of use****Department issuing SDS:** PCC-TWR**Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:**

*ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*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.**

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

### 1.1 Product identifier

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

Synonym: *for chlorine*

Article number: 51513039

CAS Number:

7681-11-0

EC number:

231-659-4

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

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

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

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

### 2.2 Label elements

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

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

### 2.3 Other hazards

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

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

CAS No. Description

CAS: 7681-11-0 *potassium iodide*

Identification number(s)

EC number: 231-659-4

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information: *No special measures required.*



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

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**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.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.***4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents:***CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:** *Pick up mechanically.***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 measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 11**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:** *Not required.***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 <sup>3</sup> (worker) (systemic effect)

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## Trade name: Reagent CL1, Component 2

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		0.035 mg/m <sup>3</sup> (consumer) (systemic effect)
<b>PNECs</b>		
<b>CAS: 7681-11-0 potassium iodide</b>		
PNEC	0.007 mg/L (fresh water)	
PNEC	0.007 mg/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 section 7.

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

**General protective and hygienic measures:**

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

**Respiratory protection:** Not required.

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

**Material of gloves**

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

**Penetration time of glove material**

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

**Eyeface protection** Not required.

**Body protection:** Protective work clothing

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

<b>Physical state</b>	Solid
<b>Colour:</b>	White
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.
<b>Melting point/freezing point:</b>	681 °C
<b>Boiling point or initial boiling point and boiling range</b>	1,330 °C
<b>Flammability</b>	Product is not flammable.
<b>Lower and upper explosion limit</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>Flash point:</b>	Not applicable.
<b>Decomposition temperature:</b>	Not determined.
<b>pH</b>	Not applicable.
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	Not applicable.
<b>Dynamic:</b>	Not applicable.
<b>Solubility</b>	
<b>water at 20 °C:</b>	1.4 g/l
<b>Partition coefficient n-octanol/water (log value)</b>	Not determined.
<b>Vapour pressure:</b>	Not applicable.
<b>Density and/or relative density</b>	
<b>Density at 20 °C:</b>	3.13 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not applicable.

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## Trade name: Reagent CL1, Component 2

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**9.2 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 %

**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****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** Based on available data, the classification criteria are not met.**Skin corrosion/irritation** Based on available data, the classification criteria are not met.**Serious eye damage/irritation** Based on available data, the classification criteria are not met.**Respiratory or skin sensitisation** 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.**STOT-single exposure** Based on available data, the classification criteria are not met.**STOT-repeated exposure** Based on available data, the classification criteria are not met.**Aspiration hazard** Based on available data, the classification criteria are not met.

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## Trade name: Reagent CL1, Component 2

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## 11.2 Information on other hazards

## Endocrine disrupting properties

*Substance is not listed.*

## \* SECTION 12: Ecological information

## 12.1 Toxicity

**Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Additional ecological information:****General notes:***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

## 13.1 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

## 14.1 UN number or ID number

ADN, IMDG, IATA

Void

## 14.2 UN proper shipping name

ADR, ADN, IMDG, IATA

Void

## 14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class

Void

## 14.4 Packing group

ADR, IMDG, IATA

Void

## 14.5 Environmental hazards:

**Marine pollutant:**

No

## 14.6 Special precautions for user

*Not applicable.*

## 14.7 Maritime transport in bulk according to IMO instruments

*Not applicable.***Transport/Additional information:***Not dangerous according to the above specifications.***UN "Model Regulation":**

Void

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Trade name: Reagent CL1, Component 2

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
Poisons Act****Regulated explosives precursors***Substance is not listed.***Regulated poisons***Substance is not listed.***Reportable explosives precursors***Substance is not listed.***Reportable poisons***Substance is not listed.***Labelling according to Regulation (EC) No 1272/2008** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***National regulations:****Waterhazard class:** *Water hazard class 3 (Assessment by list): extremely hazardous for water.***15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**DNEL: Derived No-Effect Level (UK REACH)**PNEC: Predicted No-Effect Concentration (UK 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/mixture and of the company/undertaking

### 1.1 Product identifier

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

Synonym: *for chlorine*

Article number: 51513040

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

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

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

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

### 2.2 Label elements

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

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

### 2.3 Other hazards

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

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

### 3.2 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

### 4.1 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.*

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

*No further relevant information available.*

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

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**4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Dilute with plenty of water.***6.3 Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).***6.4 Reference to other sections***See Section 7 for information on safe handling.**See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.***SECTION 7: Handling and storage****7.1 Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 12**7.3 Specific end use(s)** *No further relevant information available.***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 section 7.***Individual protection measures, such as personal protective equipment****General protective and hygienic measures:***The usual precautionary measures are to be adhered to when handling chemicals.***Respiratory protection:** *Not required.***Hand protection** *No chemical-protective gloves required.***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.*

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## 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.

**Eyeface protection** Not required.

**Body protection:** Protective work clothing

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

<b>Physical state</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.
<b>Melting point/freezing point:</b>	0 °C
<b>Boiling point or initial boiling point and boiling range</b>	100 °C
<b>Flammability</b>	Not applicable.
<b>Lower and upper explosion limit</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>Flash point:</b>	Not applicable.
<b>pH at 20 °C</b>	<2
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	Not determined.
<b>Dynamic:</b>	Not determined.
<b>Solubility</b>	
<b>water:</b>	Fully miscible.
<b>Partition coefficient n-octanol/water (log value)</b>	Not determined.
<b>Vapour pressure at 20 °C:</b>	23 hPa
<b>Density and/or relative density</b>	
<b>Density at 20 °C:</b>	1 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.

**9.2 Other information**

<b>Appearance:</b>	
<b>Form:</b>	Fluid
<b>Important information on protection of health and environment, and on safety.</b>	
<b>Ignition temperature:</b>	Product is not selfigniting.
<b>Explosive properties:</b>	Product does not present an explosion hazard. Not determined.
<b>Solvent content:</b>	
<b>Water:</b>	99.8 %
<b>Solids content:</b>	0.0 %
<b>Change in condition</b>	
<b>Evaporation rate</b>	Not determined.

**Information with regard to physical hazard classes**

<b>Explosives</b>	Void
<b>Flammable gases</b>	Void
<b>Aerosols</b>	Void
<b>Oxidising gases</b>	Void
<b>Gases under pressure</b>	Void
<b>Flammable liquids</b>	Void
<b>Flammable solids</b>	Void

(Contd. on page 4)



## Trade name: Reagent CL2, Component 1

(Contd. of page 3)

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

**SECTION 10: Stability and reactivity**

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

**10.2 Chemical stability**

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

*No decomposition if used according to specifications.*

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

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

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

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

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

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

**Skin corrosion/irritation** *Based on available data, the classification criteria are not met.*

**Serious eye damage/irritation** *Based on available data, the classification criteria are not met.*

**Respiratory or skin sensitisation** *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.*

**STOT-single exposure** *Based on available data, the classification criteria are not met.*

**STOT-repeated exposure** *Based on available data, the classification criteria are not met.*

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

**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.*

(Contd. on page 5)

## Trade name: Reagent CL2, Component 1

(Contd. of page 4)

**12.7 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****13.1 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****14.1 UN number or ID number****ADN, IMDG, IATA**

Void

**14.2 UN proper shipping name****ADR, ADN, IMDG, IATA**

Void

**14.3 Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class**

Void

**14.4 Packing group****ADR, IMDG, IATA**

Void

**14.5 Environmental hazards:****Marine pollutant:**

No

**14.6 Special precautions for user***Not applicable.***14.7 Maritime transport in bulk according to IMO instruments***Not applicable.***Transport/Additional information:***Not dangerous according to the above specifications.***UN "Model Regulation":**

Void

**\* SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**Poisons Act****Regulated explosives precursors**

CAS: 7664-93-9 | sulphuric acid

15%

**Regulated poisons***None of the ingredients is listed.***Reportable explosives precursors***None of the ingredients is listed.***Reportable poisons***None of the ingredients is listed.***Labelling according to Regulation (EC) No 1272/2008** Void**Hazard pictograms** Void**Signal word** Void**Hazard statements** Void**Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.*

(Contd. on page 6)

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

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**15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information**

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

**16.3 Recommended restriction of use****Department issuing SDS:** PCC-TWR**Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:**

*ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*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.**

— GB —

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

### 1.1 Product identifier

Trade name: **Reagent CL2, Component 2**

Synonym: *for chlorine*

Article number: 51513041

CAS Number:

6283-63-2

EC number:

228-500-6

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

*No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

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

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

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

1.4 Emergency telephone number: 0044 717 635 91 91

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



*Acute Tox. 4 H302 Harmful if swallowed.*

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

Hazard pictograms



GHS07

Signal word *Warning*

Hazard-determining components of labelling:

*N,N-diethylbenzene-1,4-diammonium sulphate*

Hazard statements

*H302 Harmful if swallowed.*

Precautionary statements

P264 *Wash thoroughly after handling.*

P270 *Do not eat, drink or smoke when using this product.*

P301+P312 *IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*

P330 *Rinse mouth.*

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

**Trade name: Reagent CL2, Component 2**

(Contd. of page 1)

**2.3 Other hazards****Results of PBT and vPvB assessment**PBT: *Not applicable.*vPvB: *Not applicable.***SECTION 3: Composition/information on ingredients****3.1 Substances****CAS No. Description**CAS: 6283-63-2 *N,N*-diethylbenzene-1,4-diammonium sulphate**Identification number(s)**

EC number: 228-500-6

**SECTION 4: First aid measures****4.1 Description of 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.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.***4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:***Dispose contaminated material as waste according to section 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.*

(Contd. on page 3)

**Trade name: Reagent CL2, Component 2**

(Contd. of page 2)

**7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 11**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:** *Not required.***Additional information:** *The lists valid during the making were used as basis.***8.2 Exposure controls****Appropriate engineering controls** *No further data; see section 7.***Individual protection measures, such as personal protective equipment****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****9.1 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***Boiling point or initial boiling point and boiling range***Undetermined.***Flammability***Product is not flammable.***Lower and upper explosion limit****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***pH***Not applicable.***Viscosity:****Kinematic viscosity***Not applicable.***Dynamic:***Not applicable.***Solubility****water at 20 °C:***1000 g/l*

(Contd. on page 4)

## Trade name: Reagent CL2, Component 2

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Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not applicable.
Density and/or relative density	
Density at 20 °C:	0.5 g/cm <sup>3</sup>
Relative density	Not determined.
Vapour density	Not applicable.
<b>9.2 Other information</b>	
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**

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

**10.2 Chemical stability**

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

No decomposition if used according to specifications.

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

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

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

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

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

**Acute toxicity** Harmful if swallowed.

(Contd. on page 5)

## Trade name: Reagent CL2, Component 2

(Contd. of page 4)

## 11.2 Information on other hazards

## Endocrine disrupting properties

*Substance is not listed.*

## SECTION 12: Ecological information

## 12.1 Toxicity

**Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Additional ecological information:****General notes:***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.*

## 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  
Poisons Act

## Regulated explosives precursors

*Substance is not listed.*

(Contd. on page 6)



**Trade name: Reagent CL2, Component 2**

(Contd. of page 5)

**Regulated poisons***Substance is not listed.***Reportable explosives precursors***Substance is not listed.***Reportable poisons***Substance is not listed.***Labelling according to Regulation (EC) No 1272/2008***The substance is classified and labelled according to the GB CLP regulation.***Hazard pictograms**

GHS07

**Signal word** *Warning***Hazard-determining components of labelling:***N,N-diethylbenzene-1,4-diammonium sulphate***Hazard statements***H302 Harmful if swallowed.***Precautionary statements***P264 Wash thoroughly after handling.**P270 Do not eat, drink or smoke when using this product.**P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**P330 Rinse mouth.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***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.***16.3 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 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.**