

19.03.2022

Kit Components

Product code	Description
CAY850-VxxAAH	CA7xCU Reagent Set for copper

Components:

51508334	Reagent CU1 for copper
51512533	Reagent CU2, Component 1 for copper
51512534	Reagent CU2, Component 2 for copper

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** Reagent CU1**Synonym:** *for copper***Article number:** 51508334**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***corrosion**Skin Corr. 1B H314 Causes severe skin burns and eye damage.**Eye Dam. 1 H318 Causes serious eye damage.**STOT SE 3 H335 May cause respiratory irritation.***GHS label elements****GHS label elements***The product is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS05 GHS07

Signal word *Danger***Hazard-determining components of labelling:***ammonia***Hazard statements***Causes severe skin burns and eye damage.**May cause respiratory irritation.***Precautionary statements***IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Immediately call a POISON CENTER/doctor.**Specific treatment (see on this label).**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

(Contd. on page 2)

Trade name: Reagent CU1

(Contd. of page 1)

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**Mixtures**

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 3012-65-5 EINECS: 221-146-3	diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate Eye Irrit. 2, H319	20-40%
CAS: 1336-21-6 EINECS: 215-647-6	ammonia Skin Corr. 1B, H314; Aquatic Acute 1, H400 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	2-6%

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: Immediately remove any clothing soiled by the product.

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

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

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

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

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

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

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

Protective equipment: Mount respiratory protective device.

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

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

Environmental precautions:

Dilute with plenty of water.

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

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Trade name: Reagent CU1

(Contd. of page 2)

Methods and material for containment and cleaning up:

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

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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**

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about fire - and explosion protection: *Keep respiratory protective device available.*

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

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

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

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

Storage class: *8 B*

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 item 7.*

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

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Respiratory protection:

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

Hand protection

Protective gloves

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

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

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

Material of gloves

Nitrile rubber, NBR

(Contd. on page 4)

Trade name: Reagent CU1

(Contd. of page 3)

Natural rubber, NR

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

Penetration time of glove material

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

Eye or face protection*Tightly sealed goggles***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:***Ammonia-like***Odour threshold:***Not determined.***Melting point/freezing point:***Undetermined.***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.***Decomposition temperature:***Not determined.***pH***Alkaline***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:***0.871 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.****Auto-ignition temperature:***Product is not selfigniting.***Explosive properties:**

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

Solvent content:**Water:***59.0 %***Solids content:***0.0 %*

(Contd. on page 5)

Trade name: Reagent CU1

(Contd. of page 4)

Change in condition**Evaporation rate***Not determined.***Information with regard to physical hazard classes**

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

SECTION 10: Stability and reactivity**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****Skin corrosion or irritation** *Causes severe skin burns and eye damage.***Serious eye damage or irritation** *Causes serious eye damage.***Specific target organ toxicity – single exposure** *May cause respiratory irritation.***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.*

(Contd. on page 6)

Trade name: Reagent CU1

(Contd. of page 5)

Other adverse effects**Additional ecological information:****General notes:***Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water**Do not allow product to reach ground water, water course or sewage system.**Must not reach sewage water or drainage ditch undiluted or unneutralised.**Danger to drinking water if even small quantities leak into the ground.***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 product is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS05 GHS07

Signal word *Danger***Hazard-determining components of labelling:***ammonia***Hazard statements***Causes severe skin burns and eye damage.**May cause respiratory irritation.***Precautionary statements***IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Immediately call a POISON CENTER/doctor.*

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Trade name: Reagent CU1

(Contd. of page 6)

Specific treatment (see on this label).

Store locked up.

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

Directive 2012/18/EU

Named dangerous substances - ANNEX I *None of the ingredients is listed.*

National regulations:

Waterhazard class: *Water hazard class 2 (Self-assessment): 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:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

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

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

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

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** Reagent CU2, Component 1**Synonym:** *for copper***Article number:** 51512533**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***flame**Flam. Liq. 2 H225 Highly flammable liquid and vapour.***GHS label elements****GHS label elements***The product is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS02

Signal word *Danger***Hazard statements***Highly flammable liquid and vapour.***Precautionary statements***Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**Dispose of contents/container in accordance with local/regional/national/international regulations.***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****Mixtures****Description:** *Mixture of substances listed below with nonhazardous additions.*

(Contd. on page 2)

— ZA —

Trade name: Reagent CU2, Component 1

(Contd. of page 1)

Dangerous components:

CAS: 64-17-5 EINECS: 200-578-6	ethanol	 Flam. Liq. 2, H225	30-50%
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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: Immediately remove any clothing soiled by the product.

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

After skin contact: Immediately rinse with water.

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.

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 equipment. Keep unprotected persons away.

Wear protective clothing.

Environmental precautions:

Prevent seepage into sewage system, workpits and cellars.

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).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

(Contd. on page 3)

Trade name: Reagent CU2, Component 1

(Contd. of page 2)

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: *Store in a cool location.*

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

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Storage class: 3

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:

CAS: 64-17-5 ethanol

OEEL | *Short-term value: 2000 ppm*

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

Exposure controls

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

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

General protective and hygienic measures:

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Respiratory protection: *Not required.*

Hand protection



Protective gloves

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

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

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

No chemical-protective gloves required.

Material of gloves

Nitrile rubber, NBR

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

Penetration time of glove material

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

Eye or face protection



Tightly sealed goggles

Body protection: *Protective work clothing*

(Contd. on page 4)

Trade name: Reagent CU2, Component 1

(Contd. of page 3)

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****General Information****Physical state***Fluid***Colour:***According to product specification***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***Undetermined.***نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان***78 °C***Flammability***Not applicable.***Upper or lower flammability or explosive limits****Lower:***3.5 Vol %***Upper:***15 Vol %***Flash point:***< 23 °C***Ignition temperature:***425 °C***Decomposition temperature:***Not determined.***pH***Not determined.***Viscosity:****Viscosity***Not determined.***Dynamic:***Not determined.***Solubility****water:***Fully miscible.***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure at 20 °C:***59 hPa***Vapour density + Relative density****Density at 20 °C:***0.883 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.****Auto-ignition temperature:***Product is not selfigniting.***Explosive properties:***Product is not explosive. However, formation of explosive air/vapour mixtures are possible.***Solvent content:****Organic solvents:***50.0 %***Water:***50.0 %***Solids content:***0.0 %***Change in condition****Evaporation rate***Not determined.***Information with regard to physical hazard classes****Explosives***Void***Flammable gases***Void***Aerosols***Void***Oxidising gases***Void***Gases under pressure***Void***Flammable liquids***Highly flammable liquid and vapour.***Flammable solids***Void***Self-reactive substances and mixtures***Void***Pyrophoric liquids***Void***Pyrophoric solids***Void*

(Contd. on page 5)

Trade name: Reagent CU2, Component 1

(Contd. of page 4)

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

SECTION 10: Stability and reactivity

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

LD/LC50 values relevant for classification:

CAS: 64-17-5 ethanol

Oral	LD50	7,060 mg/kg (rat)
Inhalative	LC50/4 h	20,000 mg/l (rat)

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

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

(Contd. on page 6)

— ZA —

Trade name: Reagent CU2, Component 1

(Contd. of page 5)

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

UN1170

IMDG, IATA

UN proper shipping name

ADR

UN1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

IMDG

ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

IATA

Ethanol solution

Transport hazard class(es)

ADR



Class

3 (F1) Flammable liquids.

Label

3

IMDG, IATA



Class

3 Flammable liquids.

Label

3

Packing group

ADR, IMDG, IATA

II

Environmental hazards:

Not applicable.

Special precautions for user

Warning: Flammable liquids.

Hazard identification number (Kemler code):

33

EMS Number:

F-E,S-D

Stowage Category

A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ)

1L

Transport category

2

Tunnel restriction code

D/E

IMDG

Limited quantities (LQ)

1L

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

(Contd. on page 7)

Trade name: Reagent CU2, Component 1

UN "Model Regulation":

UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II

(Contd. of page 6)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

GHS label elements

The product is classified and labelled according to the Globally Harmonised System (GHS).

Hazard pictograms



GHS02

Signal word *Danger*

Hazard statements

Highly flammable liquid and vapour.

Precautionary statements

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**Dispose of contents/container in accordance with local/regional/national/international regulations.*

Directive 2012/18/EU

Named dangerous substances - ANNEX I *None of the ingredients is listed.*Seveso category P5c **FLAMMABLE LIQUIDS**Qualifying quantity (tonnes) for the application of lower-tier requirements **5,000 t**Qualifying quantity (tonnes) for the application of upper-tier requirements **50,000 t**

National regulations:

Additional classification according to Decree on Hazardous Materials, Annex II:

*Carcinogenic hazardous material group III (dangerous).*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:

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organisation**ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)**ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Fam. Liq. 2: Flammable liquids – Category 2**** Data compared to the previous version altered.**

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** Reagent CU2, Component 2**Synonym:** *for copper***Article number:** 51512534**CAS Number:**

370-81-0

EC number:

206-729-2

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: 370-81-0 N,N-oxalylbis(cyclohexanone hydrazone)***Identification number(s)****EC number:** 206-729-2**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 CU2, 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: 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: *Not required.*

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

Exposure controls

Appropriate engineering controls *No further data; see item 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.

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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.

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:***Not determined.***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***208-214 °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.***Decomposition temperature:***Not determined.***pH***Not applicable.***Viscosity:****Viscosity***Not applicable.***Dynamic:***Not applicable.***Solubility****water:***Insoluble.***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure:***Not applicable.***Vapour density + Relative density****Density at 20 °C:***0.28 g/cm³***Relative density***Not determined.***Vapour density***Not applicable.***Other information****Appearance:****Form:***Crystalline powder***Important information on protection of health and environment, and on safety.****Auto-ignition temperature:***Not determined.***Explosive properties:***Product does not present an explosion hazard.**Not determined.***Solids content:***100.0 %***Change in condition****Evaporation rate***Not applicable.***Information with regard to physical hazard classes****Explosives***Void***Flammable gases***Void***Aerosols***Void***Oxidising gases***Void***Gases under pressure***Void***Flammable liquids***Void***Flammable solids***Void***Self-reactive substances and mixtures***Void***Pyrophoric liquids***Void*

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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 other hazards****endocrine disrupting potential**

Substance is not 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

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.

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