

**Kit Components**

Product code	Description
<b>CAY850-VxxAAH</b>	<b>CA7xCU Reagent Set for copper</b>

## Components:

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

## 1 Identification

### Product identifier

Trade name: **Reagent CU1**

Synonym: *for copper*

Article number: 51508334

Application of the substance / the mixture *Laboratory chemicals*

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

#### Manufacturer/Supplier:

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

#### Information department:

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

Emergency telephone number: 001 18000 222 1222

## 2 Hazard(s) identification

### Classification of the substance or mixture



GHS05 Corrosion

*Skin Corrosion 1B H314 Causes severe skin burns and eye damage.*

*Eye Damage 1 H318 Causes serious eye damage.*

### Label elements

#### GHS label elements

*The product is classified and labeled according to the Globally Harmonized System (GHS).*

#### Hazard pictograms



GHS05

Signal word *Danger*

#### Hazard-determining components of labeling:

*ammonia*

#### Hazard statements

*Causes severe skin burns and eye damage.*

#### Precautionary statements

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.*

#### Classification system:

#### NFPA ratings (scale 0 - 4)



Health = 3

Fire = 0

Reactivity = 0

## Trade name: Reagent CU1

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## HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

## 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.

## 3 Composition/information on ingredients

## Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

## Dangerous components:

CAS: 3012-65-5	diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate ! Eye Irritation 2A, H319	20-40%
CAS: 1336-21-6	ammonia ! Skin Corrosion 1B, H314	2-6%

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

## 4 First-aid measures

## Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

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

## After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

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

After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.

## Information for doctor:

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

No further relevant information available.

## Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5 Fire-fighting measures

## Extinguishing media

## Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: no further information

## Special hazards arising from the substance or mixture

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

Advice for firefighters No further relevant information available.

Protective equipment: Mount respiratory protective device.

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**\* 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:**

*Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
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).  
Use neutralizing agent.  
Dispose contaminated material as waste according to section 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.*

**Protective Action Criteria for Chemicals**

<b>PAC-1:</b>		
CAS: 1336-21-6	ammonia	61 ppm
<b>PAC-2:</b>		
CAS: 1336-21-6	ammonia	160 ppm
<b>PAC-3:</b>		
CAS: 1336-21-6	ammonia	1100 ppm

**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 protection against explosions and fires:**

*Keep respiratory protective device available.*

**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 receptacle tightly sealed.*

**Storage class:** *8 B*

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

**8 Exposure controls/personal protection**

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

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

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

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

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**Trade name: Reagent CU1**

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

Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

**Protection of hands:**

Protective gloves

To avoid skin problems reduce the wearing of gloves to the required minimum.  
 Only use chemical-protective gloves with CE-labeling of category III.  
 The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

**Material of gloves**

Nitrile rubber, NBR  
 Natural rubber, NR

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

**Penetration time of glove material**

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

**Eye protection:**

Tightly sealed goggles

**Body protection:** Protective work clothing

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Ammonia-like
<b>Odor threshold:</b>	Not determined.
<b>pH-value:</b>	Alkaline
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	>100 °C (>212 °F)
<b>Flash point:</b>	Not applicable.
<b>Flammability:</b>	Not applicable.

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<b>Decomposition temperature:</b>	<i>Not determined.</i>
<b>Ignition temperature:</b>	<i>Product is not selfigniting.</i>
<b>Danger of explosion:</b>	<i>Product does not present an explosion hazard. Not determined.</i>
<b>Explosion limits:</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
<b>Vapor pressure at 20 °C (68 °F):</b>	<i>23 hPa (17.3 mm Hg)</i>
<b>Density at 20 °C (68 °F):</b>	<i>0.871 g/cm<sup>3</sup> (7.268 lbs/gal)</i>
<b>Relative density</b>	<i>Not determined.</i>
<b>Vapor density</b>	<i>Not determined.</i>
<b>Evaporation rate</b>	<i>Not determined.</i>
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	<i>Fully miscible.</i>
<b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
<b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
<b>Solvent content:</b>	
<b>Water:</b>	<i>59.0 %</i>
<b>Solids content:</b>	<i>0.0 %</i>
<b>Other information</b>	<i>No further relevant information available.</i>

## 10 Stability and reactivity

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

**Chemical stability**

**Thermal decomposition / conditions to be avoided:**  
*No decomposition if used according to specifications.*

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

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

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

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

## 11 Toxicological information

### Information on toxicological effects

**Acute toxicity:****Primary irritant effect:**

**on the skin:** *Caustic effect on skin and mucous membranes.*

**on the eye:**

*Strong caustic effect.*

*Strong irritant with the danger of severe eye injury.*

**Sensitization:** *No sensitizing effects known.*

**Additional toxicological information:**

*The product shows the following dangers according to internally approved calculation methods for preparations:*

*Corrosive*

*Irritant*

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**Trade name: Reagent CU1**

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*Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.*

**12 Ecological information****Toxicity**

**Aquatic toxicity:** *No further relevant information available.*

**Persistence and degradability** *No further relevant information available.*

**Behavior in environmental systems:**

**Bioaccumulative potential** *No further relevant information available.*

**Mobility in soil** *No further relevant information available.*

**Additional ecological information:****General notes:**

*Water hazard class 2 (Self-assessment): hazardous for water*

*Do not allow product to reach ground water, water course or sewage system.*

*Must not reach bodies of water or drainage ditch undiluted or unneutralized.*

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

**Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

**Other adverse effects** *No further relevant information available.*

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

*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*

**Uncleaned packagings:**

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

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

**14 Transport information****UN-Number**

**DOT, ADN, IMDG, IATA** *Void*

**UN proper shipping name**

**DOT, ADN, IMDG, IATA** *Void*

**Transport hazard class(es)**

**DOT, ADN, IMDG, IATA** *Void*

**Class** *Void*

**Packing group**

**DOT, IMDG, IATA** *Void*

**Environmental hazards:** *Not applicable.*

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

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** *Not applicable.*

**Transport/Additional information:****DOT**

**Hazardous substance:** *32 lbs, 14,53 kg*

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

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Trade name: Reagent CU1

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## 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture  
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### Section 355 (extremely hazardous substances):

None of the ingredient is listed.

### Section 313 (Specific toxic chemical listings):

CAS: 1336-21-6 | ammonia

### TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

### Hazardous Air Pollutants

None of the ingredients is listed.

### Proposition 65

#### Chemicals known to cause cancer:

None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

#### Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

### Carcinogenicity categories

#### EPA (Environmental Protection Agency)

None of the ingredients is listed.

#### TLV (Threshold Limit Value)

None of the ingredients is listed.

#### MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

#### NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

### GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

### Hazard pictograms



GHS05

Signal word *Danger*

### Hazard-determining components of labeling:

ammonia

### Hazard statements

Causes severe skin burns and eye damage.

### Precautionary statements

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

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**Trade name: Reagent CU1**

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

**National regulations:**

**Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

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

**Department issuing SDS:** PCC - TWR

**Contact:** MSDS.pcc@endress.com

**Date of preparation / last revision** 09/20/2024 / 4

**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*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Skin Corrosion 1B: Skin corrosion/irritation – Category 1B*

*Eye Damage 1: Serious eye damage/eye irritation – Category 1*

*Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A*

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

## 1 Identification

**Product identifier****Trade name:** Reagent CU2, Component 1**Synonym:** *for copper***Article number:** 51512533**Application of the substance / the mixture** *Laboratory chemicals***Details of the supplier of the safety data sheet****Manufacturer/Supplier:***Endress+Hauser Conducta Inc.  
4123 E. La Palma Ave., Suite 200  
Anaheim  
CA 92807-1813  
USA***Information department:***Phone: +49 (0)7156 209-10117  
E-Mail: MSDS.PCC@endress.com***Emergency telephone number:** 001 18000 222 1222

## 2 Hazard(s) identification

**Classification of the substance or mixture**GHS02 *Flame**Flammable Liquids 2 H225 Highly flammable liquid and vapor.*GHS08 *Health hazard**Carcinogenicity 1A H350 May cause cancer.***Label elements****GHS label elements***The product is classified and labeled according to the Globally Harmonized System (GHS).***Hazard pictograms**

GHS02 GHS08

**Signal word** *Danger***Hazard-determining components of labeling:***ethanol***Hazard statements***Highly flammable liquid and vapor.**May cause cancer.***Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

(Contd. on page 2)

— USA —

## Trade name: Reagent CU2, Component 1

(Contd. of page 1)

## Classification system:

## NFPA ratings (scale 0 - 4)



## HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = *0
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

## 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.

## 3 Composition/information on ingredients

## Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

## Dangerous components:

CAS: 64-17-5	ethanol	Flammable Liquids 2, H225;  Carcinogenicity 1A, H350	30-50%
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Additional information: For the wording of the listed hazard phrases refer to section 16.

## 4 First-aid measures

## Description of 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.

## Information for doctor:

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

No further relevant information available.

## Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5 Fire-fighting measures

## Extinguishing media

## Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: no further information

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

Advice for firefighters No further relevant information available.

Protective equipment: No special measures required.

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— USA —

Trade name: Reagent CU2, Component 1

(Contd. of page 2)

## 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 section 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.

### Protective Action Criteria for Chemicals

<b>PAC-1:</b>		
CAS: 64-17-5	ethanol	1,800 ppm
<b>PAC-2:</b>		
CAS: 64-17-5	ethanol	3300* ppm
<b>PAC-3:</b>		
CAS: 64-17-5	ethanol	15000* ppm

## 7 Handling and storage

### Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

### Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

### 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 receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

**Storage class:** 3

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

## 8 Exposure controls/personal protection

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

### Control parameters

#### Components with limit values that require monitoring at the workplace:

**CAS: 64-17-5 ethanol**

PEL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

REL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

TLV Short-term value: 1000 ppm

A3

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— USA —

**Trade name: Reagent CU2, Component 1**

(Contd. of page 3)

**Additional information:** *The lists that were valid during the creation were used as basis.***Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.*

**Breathing equipment:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*

**Protection of hands:***Protective gloves*

*To avoid skin problems reduce the wearing of gloves to the required minimum.  
Only use chemical-protective gloves with CE-labeling 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**Natural rubber, NR**Chloroprene rubber, CR*

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

**Penetration time of glove material**

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

**Eye protection:***Tightly sealed goggles***Body protection:** *Protective work clothing***\* 9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

<b>Form:</b>	<i>Fluid</i>
<b>Color:</b>	<i>According to product specification</i>
<b>Odor:</b>	<i>Odorless</i>
<b>Odor threshold:</b>	<i>Not determined.</i>
<b>pH-value:</b>	<i>Not determined.</i>

**Change in condition**

<b>Melting point/Melting range:</b>	<i>Undetermined.</i>
<b>Boiling point/Boiling range:</b>	<i>78 °C (172.4 °F)</i>

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## Trade name: Reagent CU2, Component 1

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Flash point:	< 23 °C (< 73.4 °F)
Flammability:	Highly flammable.
Auto igniting:	425 °C (797 °F)
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	3.5 Vol %
Upper:	15 Vol %
Vapor pressure at 20 °C (68 °F):	59 hPa (44.3 mm Hg)
Density at 20 °C (68 °F):	0.883 g/cm <sup>3</sup> (7.369 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Solvent content:	
Organic solvents:	50.0 %
Water:	50.0 %
Solids content:	0.0 %
Other information	No further relevant information available.

## 10 Stability and reactivity

**Reactivity** No further relevant information available.

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

No decomposition if used according to specifications.

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

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

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

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

## 11 Toxicological information

**Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:****CAS: 64-17-5 ethanol**

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

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** No irritating effect.

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**Trade name: Reagent CU2, Component 1**

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**Sensitization:** *No sensitizing effects known.*

**Additional toxicological information:**

*The product shows the following dangers according to internally approved calculation methods for preparations:*

**Carcinogenic categories**

<b>IARC (International Agency for Research on Cancer)</b>	
CAS: 64-17-5   ethanol	1

## 12 Ecological information

**Toxicity**

**Aquatic toxicity:** *No further relevant information available.*

**Persistence and degradability** *No further relevant information available.*

**Behavior in environmental systems:**

**Bioaccumulative potential** *No further relevant information available.*

**Mobility in soil** *No further relevant information available.*

**Additional ecological information:**

**General notes:**

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

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

**Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

**Other adverse effects** *No further relevant information available.*

## 13 Disposal considerations

**Waste treatment methods**

**Recommendation:**

*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*

**Uncleaned packagings:**

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

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

## 14 Transport information

**UN-Number**

**DOT, IMDG, IATA**

UN1170

**UN proper shipping name**

**DOT**

Ethanol solutions

**IMDG**

ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

**IATA**

Ethanol solution

**Transport hazard class(es)**

**DOT**



**Class**

3 Flammable liquids

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Trade name: Reagent CU2, Component 1

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Label 3

IMDG, IATA



Class 3 Flammable liquids  
 Label 3  
 Packing group II  
 DOT, 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 MARPOL73/78 and the IBC Code Not applicable.  
 Transport/Additional information:  
 DOT  
 Quantity limitations On passenger aircraft/rail: 5 L  
 On cargo aircraft only: 60 L

IMDG

Limited quantities (LQ) 1L  
 Excepted quantities (EQ) Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml  
 UN "Model Regulation": UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II

15 Regulatory information

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

<b>Section 355 (extremely hazardous substances):</b>
<i>None of the ingredient is listed.</i>
<b>Section 313 (Specific toxic chemical listings):</b>
<i>None of the ingredients is listed.</i>
<b>TSCA (Toxic Substances Control Act):</b>
<i>All components have the value ACTIVE.</i>
<b>Hazardous Air Pollutants</b>
<i>None of the ingredients is listed.</i>
<b>Proposition 65</b>
<b>Chemicals known to cause cancer:</b>
<i>None of the ingredients is listed.</i>
<b>Chemicals known to cause reproductive toxicity for females:</b>
<i>None of the ingredients is listed.</i>
<b>Chemicals known to cause reproductive toxicity for males:</b>
<i>None of the ingredients is listed.</i>
<b>Chemicals known to cause developmental toxicity:</b>
CAS: 64-17-5   ethanol

(Contd. on page 8)



## Trade name: Reagent CU2, Component 1

(Contd. of page 7)

**Carcinogenity categories****EPA (Environmental Protection Agency)**

None of the ingredients is listed.

**TLV (Threshold Limit Value)**

CAS: 64-17-5 ethanol

A3

**MAK (German Maximum Workplace Concentration)**

CAS: 64-17-5 ethanol

5

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**

GHS02 GHS08

**Signal word** *Danger***Hazard-determining components of labeling:***ethanol***Hazard statements***Highly flammable liquid and vapor.**May cause cancer.***Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.***National regulations:****Additional classification according to Decree on Hazardous Materials:***Carcinogenic hazardous material group III (dangerous).***Information about limitation of use:***Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.***Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***16 Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***Department issuing SDS:** *PCC - TWR***Contact:** *MSDS.pcc@endress.com***Date of preparation / last revision** *09/20/2024 / 4***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**DOT: US Department of Transportation*

(Contd. on page 9)

— USA —

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**Trade name: Reagent CU2, Component 1**

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(Contd. of page 8)

*IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Flammable Liquids 2: Flammable liquids – Category 2**Carcinogenicity 1A: Carcinogenicity – Category 1A***\* Data compared to the previous version altered.**

— USA —

## 1 Identification

### Product identifier

Trade name: **Reagent CU2, Component 2**

Synonym: *for copper*

Article number: 51512534

CAS Number:

370-81-0

EC number:

206-729-2

Application of the substance / the mixture *Laboratory chemicals*

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

#### Manufacturer/Supplier:

Endress+Hauser Conducta Inc.

4123 E. La Palma Ave., Suite 200

Anaheim

CA 92807-1813

USA

#### Information department:

Phone: +49 (0)7156 209-10117

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

Emergency telephone number: 001 18000 222 1222

## 2 Hazard(s) identification

### Classification of the substance or mixture

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

### Label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Classification system:

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

### 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.*

## \* 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS No. Description

CAS: 370-81-0 *N,N-oxalylbis(cyclohexanone hydrazone)*

(Contd. on page 2)

USA

Trade name: Reagent CU2, Component 2

(Contd. of page 1)

Identification number(s)

EC number: 206-729-2

## 4 First-aid measures

### Description of first aid measures

**General information:** *No special measures required.***After inhalation:** *Supply fresh air; consult doctor in case of complaints.***After skin contact:** *Generally the product does not irritate the skin.***After eye contact:** *Rinse opened eye for several minutes under running water.***After swallowing:** *If symptoms persist consult doctor.*

### Information for doctor:

**Most important symptoms and effects, both acute and delayed***No further relevant information available.***Indication of any immediate medical attention and special treatment needed***No further relevant information available.*

## 5 Fire-fighting measures

### Extinguishing media

**Suitable extinguishing agents:***CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***Special hazards arising from the substance or mixture** *No further relevant information available.***Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.*

## 6 Accidental release measures

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

### Protective Action Criteria for Chemicals

**PAC-1:***Substance is not listed.***PAC-2:***Substance is not listed.***PAC-3:***Substance is not listed.*

## 7 Handling and storage

**Precautions for safe handling** *No special measures required.***Information about protection against explosions and fires:** *No special measures required.***Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.*

(Contd. on page 3)

**Trade name: Reagent CU2, Component 2**

(Contd. of page 2)

**Further information about storage conditions:** *None.***Storage class:** 13**Specific end use(s)** *No further relevant information available.***8 Exposure controls/personal protection****Additional information about design of technical systems:** *No further data; see section 7.***Control parameters****Components with limit values that require monitoring at the workplace:** *Not required.***Additional information:** *The lists that were valid during the creation were used as basis.***Exposure controls****Personal protective equipment:****General protective and hygienic measures:***The usual precautionary measures for handling chemicals should be followed.***Breathing equipment:** *Not required.***Protection of hands:** *No chemical-protective gloves required.***Material of gloves***The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.***Penetration time of glove material***The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.***Eye protection:** *Not required.***Body protection:** *Protective work clothing***9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:****Form:** *Crystalline powder***Color:** *Not determined.***Odor:** *Odorless***Odor threshold:** *Not determined.***pH-value:** *Not applicable.***Change in condition****Melting point/Melting range:** *208-214 °C (406.4-417.2 °F)***Boiling point/Boiling range:** *Undetermined.***Flash point:** *Not applicable.***Flammability:** *Product is not flammable.***Decomposition temperature:** *Not determined.***Ignition temperature:** *Not determined.***Danger of explosion:** *Product does not present an explosion hazard.  
Not determined.***Explosion limits:****Lower:** *Not determined.***Upper:** *Not determined.***Vapor pressure:** *Not applicable.*

(Contd. on page 4)

**Trade name: Reagent CU2, Component 2**

(Contd. of page 3)

<b>Density at 20 °C (68 °F):</b>	<i>0.28 g/cm<sup>3</sup> (2.337 lbs/gal)</i>
<b>Relative density</b>	<i>Not determined.</i>
<b>Vapor density</b>	<i>Not applicable.</i>
<b>Evaporation rate</b>	<i>Not applicable.</i>
<b>Solubility in / Miscibility with Water:</b>	<i>Insoluble.</i>
<b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
<b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not applicable.</i>
<b>Kinematic:</b>	<i>Not applicable.</i>
<b>Solids content:</b>	<i>100.0 %</i>
<b>Other information</b>	<i>No further relevant information available.</i>

**10 Stability and reactivity**

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

**Chemical stability**

**Thermal decomposition / conditions to be avoided:**  
*No decomposition if used according to specifications.*

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

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

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

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

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

**on the skin:** *No irritant effect.*

**on the eye:** *No irritating effect.*

**Sensitization:** *No sensitizing effects known.*

**Additional toxicological information:**

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

*The substance is not subject to classification.*

**12 Ecological information****Toxicity**

**Aquatic toxicity:** *No further relevant information available.*

**Persistence and degradability** *No further relevant information available.*

**Behavior in environmental systems:**

**Bioaccumulative potential** *No further relevant information available.*

**Mobility in soil** *No further relevant information available.*

**Additional ecological information:****General notes:**

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

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

**Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

(Contd. on page 5)

**Trade name: Reagent CU2, Component 2**

(Contd. of page 4)

**Other adverse effects** *No further relevant information available.*

### 13 Disposal considerations

**Waste treatment methods**

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

**Uncleaned packagings:**

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

### 14 Transport information

**UN-Number**

DOT, ADN, IMDG, IATA *Void*

**UN proper shipping name**

DOT, ADN, IMDG, IATA *Void*

**Transport hazard class(es)**

DOT, ADN, IMDG, IATA

**Class** *Void*

**Packing group**

DOT, IMDG, IATA *Void*

**Environmental hazards:**

**Marine pollutant:** *No*

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

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** *Not applicable.*

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

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

### 15 Regulatory information

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

**Section 355 (extremely hazardous substances):**

*Substance is not listed.*

**Section 313 (Specific toxic chemical listings):**

*Substance is not listed.*

**TSCA (Toxic Substances Control Act):**

ACTIVE

**Hazardous Air Pollutants**

*Substance is not listed.*

**Proposition 65**

**Chemicals known to cause cancer:**

*Substance is not listed.*

**Chemicals known to cause reproductive toxicity for females:**

*Substance is not listed.*

**Chemicals known to cause reproductive toxicity for males:**

*Substance is not listed.*

**Chemicals known to cause developmental toxicity:**

*Substance is not listed.*

(Contd. on page 6)

**Trade name: Reagent CU2, Component 2**

(Contd. of page 5)

**Carcinogenicity categories****EPA (Environmental Protection Agency)***Substance is not listed.***TLV (Threshold Limit Value)***Substance is not listed.***MAK (German Maximum Workplace Concentration)***Substance is not listed.***NIOSH-Ca (National Institute for Occupational Safety and Health)***Substance is not listed.***GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***National regulations:****Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***16 Other information**

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

**Department issuing SDS:** *PCC - TWR***Contact:** *MSDS.pcc@endress.com***Date of preparation / last revision** *09/20/2024 / 5***Abbreviations and acronyms:***ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit***\* Data compared to the previous version altered.**