

03/19/2022

**Kit Components**

Product code	Description
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<b>CAY441-VxxAAE</b>	<b>CA71COD-B Reagent Set</b>
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Components:

71251118	Reagent COD1 (A+B)
71251187	Reagent COD2 (B)
71251190A	Reagent COD3 (A+B)

## 1 Identification

### Product identifier

Trade name: **Reagent COD1 (A+B)**

Article number: 71251118

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 1A 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:

*sulphuric acid*

#### 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

(Contd. on page 2)

## Trade name: Reagent COD1 (A+B)

(Contd. of page 1)

## 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: 7664-93-9	sulphuric acid	 Skin Corrosion 1A, H314	60-80%
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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: 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.

## 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.

(Contd. on page 3)

**Trade name: Reagent COD1 (A+B)**

(Contd. of page 2)

**Environmental precautions:***Dilute with plenty of water.**Do not allow to enter sewers/ surface or ground water.***Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).**Use neutralizing 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.***Protective Action Criteria for Chemicals**

<b>PAC-1:</b>		
CAS: 7664-93-9	sulphuric acid	0.20 mg/m <sup>3</sup>
<b>PAC-2:</b>		
CAS: 7664-93-9	sulphuric acid	8.7 mg/m <sup>3</sup>
<b>PAC-3:</b>		
CAS: 7664-93-9	sulphuric acid	160 mg/m <sup>3</sup>

**7 Handling and storage****Precautions for safe handling***Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.**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 item 7.***Control parameters**

<b>Components with limit values that require monitoring at the workplace:</b>	
<b>CAS: 7664-93-9 sulphuric acid</b>	
PEL	Long-term value: 1 mg/m <sup>3</sup>
REL	Long-term value: 1 mg/m <sup>3</sup>
TLV	Long-term value: 0.2* mg/m <sup>3</sup>
	*as thoracic fraction, A2

**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.**Avoid contact with the eyes.*

(Contd. on page 4)

**Trade name: Reagent COD1 (A+B)**

(Contd. of page 3)

*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*

*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>Colorless</i>
<b>Odor:</b>	<i>Odorless</i>
<b>Odor threshold:</b>	<i>Not determined.</i>
<b>pH-value at 20 °C (68 °F):</b>	<i>&lt;1</i>

**Change in condition**

<b>Melting point/Melting range:</b>	<i>Undetermined.</i>
<b>Boiling point/Boiling range:</b>	<i>Undetermined.</i>

**Flash point:** *Not applicable.*

**Flammability (solid, gaseous):** *Not applicable.*

**Decomposition temperature:** *Not determined.*

**Auto igniting:** *Product is not selfigniting.*

**Danger of explosion:** *Product does not present an explosion hazard.  
Not determined.*

**Explosion limits:**

**Lower:** *Not determined.*

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**Trade name: Reagent COD1 (A+B)**

(Contd. of page 4)

<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>1.521 g/cm<sup>3</sup> (12.693 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>25.0 %</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:** *Strong 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*

*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.*

(Contd. on page 6)

**Trade name: Reagent COD1 (A+B)**

(Contd. of page 5)

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

UN1830

**UN proper shipping name****DOT**

Sulfuric acid

**IMDG**

SULPHURIC ACID

**IATA**

Sulphuric acid

**Transport hazard class(es)****DOT****Class**

8 Corrosive substances

**Label**

8

**IMDG, IATA****Class**

8 Corrosive substances

**Label**

8

**Packing group****DOT, IMDG, IATA**

II

**Environmental hazards:***Not applicable.***Special precautions for user***Warning: Corrosive substances***Hazard identification number (Kemler code):** 80**EMS Number:**

F-A,S-B

**Segregation groups**

Strong acids

**Stowage Category**

C

**Stowage Code**

SW15 For metal drums, stowage category B.

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**Trade name: Reagent COD1 (A+B)**

(Contd. of page 6)

**Segregation Code** SG36 Stow "separated from" SGG18-alkalis.  
SG49 Stow "separated from" SGG6-cyanides

**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: 1 L  
On cargo aircraft only: 30 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 1830 SULPHURIC ACID, 8, II

**\*15 Regulatory information**

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

<b>Section 355 (extremely hazardous substances):</b>
CAS: 7664-93-9   sulphuric acid

<b>Section 313 (Specific toxic chemical listings):</b>
CAS: 7664-93-9   sulphuric acid

<b>TSCA (Toxic Substances Control Act):</b>
All components have the value ACTIVE.

<b>Hazardous Air Pollutants</b>
None of the ingredients is listed.

<b>Proposition 65</b>
<b>Chemicals known to cause cancer:</b>
None of the ingredients is listed.

<b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.

<b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.

<b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients is listed.

**Carcinogenicity categories**

<b>EPA (Environmental Protection Agency)</b>
None of the ingredients is listed.

<b>TLV (Threshold Limit Value)</b>	
CAS: 7664-93-9   sulphuric acid	A2

<b>MAK (German Maximum Workplace Concentration)</b>	
CAS: 7664-93-9   sulphuric acid	4

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

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

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## Trade name: Reagent COD1 (A+B)

(Contd. of page 7)

## Hazard pictograms



GHS05

Signal word *Danger*

## Hazard-determining components of labeling:

*sulphuric acid*

## 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.*

## National regulations:

**Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***16 Other information**

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

**Department issuing SDS:** *PCC - TWR***Contact:** *MSDS.pcc@endress.com***Date of preparation / last revision** *03/19/2022 / 6***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 1A: Skin corrosion/irritation – Category 1A**Eye Damage 1: Serious eye damage/eye irritation – Category 1***\* Data compared to the previous version altered.**

**1 Identification**

**Product identifier**

Trade name: **Reagent COD2 (B)**

Article number: 71251187

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**



GHS06 Skull and crossbones

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Sensitization - Respiratory 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ Cell Mutagenicity 1B

H340 May cause genetic defects.

Carcinogenicity 1B

H350 May cause cancer.

Toxic to Reproduction 1B

H360 May damage fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure 1 H372 Causes damage to the respiratory system through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corrosion 1A

H314 Causes severe skin burns and eye damage.

Eye Damage 1

H318 Causes serious eye damage.



GHS07

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

**Label elements**

**GHS label elements**

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

(Contd. on page 2)

## Trade name: Reagent COD2 (B)

(Contd. of page 1)

## Hazard pictograms



GHS05 GHS06 GHS08

Signal word *Danger*

## Hazard-determining components of labeling:

*sulphuric acid**Potassium dichromate*

## Hazard statements

*Toxic if inhaled.**Causes severe skin burns and eye damage.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**May cause genetic defects.**May cause cancer.**May damage fertility or the unborn child.**Causes damage to the respiratory system through prolonged or repeated exposure.*

## 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

## HMIS-ratings (scale 0 - 4)



Health = \*3

Fire = 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.*

(Contd. on page 3)

— USA —

## Trade name: Reagent COD2 (B)

(Contd. of page 2)

Dangerous components:		
CAS: 7664-93-9	sulphuric acid Skin Corrosion 1A, H314	10-20%
CAS: 7778-50-9	Potassium dichromate Oxidizing Solids 2, H272; Acute Toxicity - Oral 3, H301; Acute Toxicity - Inhalation 2, H330; Sensitization - Respiratory 1, H334; Germ Cell Mutagenicity 1B, H340; Carcinogenicity 1B, H350; Toxic to Reproduction 1B, H360; Specific Target Organ Toxicity - Repeated Exposure 1, H372; Skin Corrosion 1B, H314; Acute Toxicity - Dermal 4, H312; Sensitization - Skin 1, H317	1-2.5%

**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.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### After inhalation:

Supply fresh air or oxygen; call for doctor.

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.

## 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.

(Contd. on page 4)

## Trade name: Reagent COD2 (B)

(Contd. of page 3)

*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 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.***Protective Action Criteria for Chemicals**

PAC-1:		
CAS: 7664-93-9	sulphuric acid	0.20 mg/m <sup>3</sup>
CAS: 7778-50-9	Potassium dichromate	0.42 mg/m <sup>3</sup>
PAC-2:		
CAS: 7664-93-9	sulphuric acid	8.7 mg/m <sup>3</sup>
CAS: 7778-50-9	Potassium dichromate	7.4 mg/m <sup>3</sup>
PAC-3:		
CAS: 7664-93-9	sulphuric acid	160 mg/m <sup>3</sup>
CAS: 7778-50-9	Potassium dichromate	44 mg/m <sup>3</sup>

**7 Handling and storage****Precautions for safe handling***Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.**Ensure good ventilation/exhaustion at the workplace.**Open and handle receptacle with care.**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:** 6.1 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 item 7.***Control parameters**

Components with limit values that require monitoring at the workplace:	
<b>CAS: 7664-93-9 sulphuric acid</b>	
PEL	Long-term value: 1 mg/m <sup>3</sup>
REL	Long-term value: 1 mg/m <sup>3</sup>
TLV	Long-term value: 0.2* mg/m <sup>3</sup> *as thoracic fraction, A2
<b>CAS: 7778-50-9 Potassium dichromate</b>	
PEL	Long-term value: 0.005* mg/m <sup>3</sup> Ceiling limit value: 0.1** mg/m <sup>3</sup> *as Cr(VI) **as CrO <sub>3</sub> ; see 29 CFR 1910.1026

(Contd. on page 5)

**Trade name: Reagent COD2 (B)**

(Contd. of page 4)

REL	Long-term value: 0.0002 mg/m <sup>3</sup> as Cr; See Pocket Guide Apps. A and C
TLV	Short-term value: 0.0005 mg/m <sup>3</sup> Long-term value: 0.0002 mg/m <sup>3</sup> as Cr(VI); inhalable, Skin; BEI, DSEN, RSEN

**Ingredients with biological limit values:****CAS: 7778-50-9 Potassium dichromate**

BEI	25 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Total chromium (fume)
	10 µg/L Medium: urine Time: increase during shift Parameter: Total chromium (fume)

**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.  
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  
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

(Contd. on page 6)

— USA —

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**Trade name: Reagent COD2 (B)**

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(Contd. of page 5)

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

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## 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>Light orange color</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>100 °C (212 °F)</i>

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

<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>

**Vapor pressure at 20 °C (68 °F):** *23 hPa (17.3 mm Hg)***Density at 20 °C (68 °F):** *1.117 g/cm<sup>3</sup> (9.321 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:****Water:** *77.7 %***Solids content:** *0.0 %***Other information***No further relevant information available.*

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## 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.*

(Contd. on page 7)



Trade name: Reagent COD2 (B)

(Contd. of page 6)

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: 7778-50-9 Potassium dichromate

Oral LD50 190 mg/kg (Mouse)

#### Primary irritant effect:

**on the skin:** Strong caustic effect on skin and mucous membranes.**on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

#### Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

#### Additional toxicological information:

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

Toxic

Harmful

Corrosive

Irritant

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

The product can cause inheritable damage.

#### Carcinogenic categories

#### IARC (International Agency for Research on Cancer)

CAS: 7778-50-9 Potassium dichromate

1

#### NTP (National Toxicology Program)

CAS: 7778-50-9 Potassium dichromate

K

## 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 3 (Self-assessment): extremely hazardous for water

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

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

Danger to drinking water if even extremely 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.

(Contd. on page 8)



Trade name: Reagent COD2 (B)

(Contd. of page 7)

## 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

UN2922

### UN proper shipping name

DOT

*Corrosive liquids, toxic, n.o.s. (Sulfuric acid, Potassium dichromate)*

IMDG

*CORROSIVE LIQUID, TOXIC, N.O.S. (SULPHURIC ACID, Potassium dichromate)*

IATA

*Corrosive liquid, toxic, n.o.s. (containing SULPHURIC ACID, Potassium dichromate)*

### Transport hazard class(es)

DOT



Class

*8 Corrosive substances*

Label

*8, 6.1*

IMDG



Class

*8 Corrosive substances*

Label

*8/6.1*

IATA



Class

*8 Corrosive substances*

Label

*8 (6.1)*

Packing group

DOT, IMDG, IATA

*II*

Environmental hazards:

*Not applicable.*

Special precautions for user

*Warning: Corrosive substances*

Hazard identification number (Kemler code):

*86*

EMS Number:

*F-A,S-B*

Stowage Category

*B*

Stowage Code

*SW2 Clear of living quarters.*

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

*Not applicable.*

(Contd. on page 9)

— USA —

## Trade name: Reagent COD2 (B)

(Contd. of page 8)

## Transport/Additional information:

## DOT

## Quantity limitations

On passenger aircraft/rail: 1 L

On cargo aircraft only: 30 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 2922 CORROSIVE LIQUID, TOXIC, N.O.S.

(SULPHURIC ACID, POTASSIUM DICHROMATE), 8

(6.1), II

## \*15 Regulatory information

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

## Section 355 (extremely hazardous substances):

CAS: 7664-93-9 | sulphuric acid

## Section 313 (Specific toxic chemical listings):

CAS: 7664-93-9 | sulphuric acid

CAS: 7778-50-9 | Potassium dichromate

CAS: 10294-26-5 | silver sulfate

## TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

## Hazardous Air Pollutants

CAS: 7778-50-9 | Potassium dichromate

## Proposition 65

## Chemicals known to cause cancer:

CAS: 7778-50-9 | Potassium dichromate

## Chemicals known to cause reproductive toxicity for females:

CAS: 7778-50-9 | Potassium dichromate

## Chemicals known to cause reproductive toxicity for males:

CAS: 7778-50-9 | Potassium dichromate

## Chemicals known to cause developmental toxicity:

CAS: 7778-50-9 | Potassium dichromate

## Carcinogenicity categories

## EPA (Environmental Protection Agency)

CAS: 7778-50-9 | Potassium dichromate | A(inh), D(oral), K/L(inh), CBD(oral)

## TLV (Threshold Limit Value)

CAS: 7664-93-9 | sulphuric acid | A2

CAS: 7778-50-9 | Potassium dichromate | A1

## MAK (German Maximum Workplace Concentration)

CAS: 7664-93-9 | sulphuric acid | 4

CAS: 7778-50-9 | Potassium dichromate | 2

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

CAS: 7778-50-9 | Potassium dichromate

## GHS label elements

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

(Contd. on page 10)

**Trade name: Reagent COD2 (B)**

(Contd. of page 9)

**Hazard pictograms**

GHS05 GHS06 GHS08

**Signal word** *Danger***Hazard-determining components of labeling:***sulphuric acid**Potassium dichromate***Hazard statements***Toxic if inhaled.**Causes severe skin burns and eye damage.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**May cause genetic defects.**May cause cancer.**May damage fertility or the unborn child.**Causes damage to the respiratory system through prolonged or repeated exposure.***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.***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 3 (Self-assessment): extremely hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***16 Other information**

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

**Department issuing SDS:** *PCC - TWR***Contact:** *MSDS.pcc@endress.com***Date of preparation / last revision** *03/19/2022 / 13***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)*

(Contd. on page 11)

**Trade name: Reagent COD2 (B)**

(Contd. of page 10)

*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**BEI: Biological Exposure Limit**Oxidizing Solids 2: Oxidizing solids – Category 2**Acute Toxicity - Oral 3: Acute toxicity – Category 3**Acute Toxicity - Dermal 4: Acute toxicity – Category 4**Acute Toxicity - Inhalation 2: Acute toxicity – Category 2**Skin Corrosion 1A: Skin corrosion/irritation – Category 1A**Skin Corrosion 1B: Skin corrosion/irritation – Category 1B**Eye Damage 1: Serious eye damage/eye irritation – Category 1**Sensitization - Respiratory 1: Respiratory sensitisation – Category 1**Sensitization - Skin 1: Skin sensitisation – Category 1**Germ Cell Mutagenicity 1B: Germ cell mutagenicity – Category 1B**Carcinogenicity 1B: Carcinogenicity – Category 1B**Toxic to Reproduction 1B: Reproductive toxicity – Category 1B**Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1***\* Data compared to the previous version altered.**

## 1 Identification

### Product identifier

Trade name: **Reagent COD3 (A+B)**

Article number: 71251190A

### CAS Number:

57-50-1

### EC number:

200-334-9

Application of the substance / the mixture *Laboratory chemicals*

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

#### Manufacturer/Supplier:

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

#### Information department:

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

Emergency telephone number: 001 18000 222 1222

## 2 Hazard(s) identification

### Classification of the substance or mixture

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

### Label elements

GHS label elements *Void*

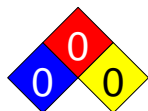
Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Classification system:

NFPA ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

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: 57-50-1 *sucrose*

(Contd. on page 2)

— USA —

Trade name: Reagent COD3 (A+B)

(Contd. of page 1)

Identification number(s)

EC number: 200-334-9

## 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:** *No special measures required.*

**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

<b>PAC-1:</b>
<i>Substance is not listed.</i>
<b>PAC-2:</b>
<i>Substance is not listed.</i>
<b>PAC-3:</b>
<i>Substance is not listed.</i>

## 7 Handling and storage

### Precautions for safe handling

*Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.*

*No special measures required.*

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

(Contd. on page 3)

Trade name: Reagent COD3 (A+B)

(Contd. of page 2)

**Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 11**Specific end use(s)** *No further relevant information available.***8 Exposure controls/personal protection****Additional information about design of technical systems:** *No further data; see item 7.***Control parameters****Components with limit values that require monitoring at the workplace:****CAS: 57-50-1 sucrose**

PEL	Long-term value: 15* 5** mg/m <sup>3</sup> *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> *total dust **respirable fraction
TLV	Long-term value: 10 mg/m <sup>3</sup> A4

**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:** *Colorless***Odor:** *Odorless***Odor threshold:** *Not determined.***pH-value:** *Not applicable.***Change in condition****Melting point/Melting range:** *Undetermined.***Boiling point/Boiling range:** *Undetermined.***Flash point:** *Not applicable.*

(Contd. on page 4)

## Trade name: Reagent COD3 (A+B)

(Contd. of page 3)

<b>Flammability (solid, gaseous):</b>	<i>Product is not flammable.</i>
<b>Decomposition temperature:</b>	<i>Not determined.</i>
<b>Auto igniting:</b>	<i>Not determined.</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:</b>	<i>Not applicable.</i>
<b>Density at 20 °C (68 °F):</b>	<i>0.94 g/cm<sup>3</sup> (7.844 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</b>	
<b>Water:</b>	<i>Soluble.</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>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:

<b>LD/LC50 values that are relevant for classification:</b>
<b>CAS: 57-50-1 sucrose</b>
Oral   LD50   29,700 mg/kg (rat)

#### 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.*

(Contd. on page 5)

— USA —



Trade name: Reagent COD3 (A+B)

(Contd. of page 4)

## 12 Ecological information

### Toxicity

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

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

### Behavior in environmental systems:

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

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

### Additional ecological information:

**General notes:** Not hazardous for water.

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13 Disposal considerations

### Waste treatment methods

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

### Uncleaned packagings:

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

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

## 14 Transport information

### UN-Number

DOT, ADN, IMDG, IATA Void

### UN proper shipping name

DOT, ADN, IMDG, IATA Void

### Transport hazard class(es)

DOT, ADN, IMDG, IATA

Class Void

### Packing group

DOT, IMDG, IATA Void

### Environmental hazards:

**Marine pollutant:** No

**Special precautions for user** Not applicable.

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

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

**UN "Model Regulation":** Void

## 15 Regulatory information

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

No further relevant information available.

### Sara

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

Substance is not listed.

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

Substance is not listed.

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

ACTIVE

(Contd. on page 6)

— USA —

**Trade name: Reagent COD3 (A+B)**

(Contd. of page 5)

**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.***Carcinogenicity categories****EPA (Environmental Protection Agency)***Substance is not listed.***TLV (Threshold Limit Value)**

A4

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

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

**Department issuing SDS:** *PCC - TWR***Contact:** *MSDS.pcc@endress.com***Date of preparation / last revision** *03/19/2022 / 4***Abbreviations and acronyms:**

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

*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)*

*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*

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