Kit Components

Product code	Description
CAY441-VxxAAE	**CA71COD-B Reagent Set**

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 GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

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

Emergency telephone number: *+1 604 682 5050*

2 Hazard identification

Classification of the substance or mixture

GHS05 Corrosion

Skin Corrosion - Category 1A *H314 Causes severe skin burns and eye damage.*
Serious Eye Damage - Category 1 *H318 Causes serious eye damage.*

Label elements
GHS label elements
The product is classified and labelled according to the Globally Harmonised System (GHS).
Hazard pictograms

GHS05

Signal word *Danger*

Hazard-determining components of labelling:
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 [or shower].
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

* 3 Composition/Information on ingredients

Chemical characterisation: Mixtures
Description: *Mixture of substances listed below with nonhazardous additions.*

(Contd. on page 2)

(Contd. of page 1)

Dangerous components:			
CAS: 7664-93-9	*sulphuric acid*	*Skin Corrosion - Category 1A, H314*	*60-80% **

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 plenty of water and provide fresh air. Call for a doctor immediately.*

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:
CO2, 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:
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 neutralising 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.

7 Handling and storage

Precautions for safe handling
Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.

(Contd. on page 3)

(Contd. of page 2)

Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Information about fire - and explosion protection: *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 container 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 facilities: *No further data; see section 7.*

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
CAS: 7664-93-9 sulphuric acid	
EL	*TWA: 0.2 mg/m³* *thoracic, ACGIH A2; IARC 1*
EV	*TWA: 0.2 mg/m³*

DNELs		
CAS: 7664-93-9 sulphuric acid		
Inhalative	*DNEL short-term*	*0.1 mg/m³ (worker) (local effects)*
	DNEL long-term	*0.05 mg/m³ (worker) (local effects)*

PNECs	
CAS: 7664-93-9 sulphuric acid	
PNEC	*8.8 mg/L (Wastewater treatment plant)*
	0.25 mg/L (sea water)
PNEC	*2.5 µg/L (fresh water)*
PNEC	*2 µg/kg (marine sediment)*
	2 µg/kg (freshwater sediment)

Additional information: *The lists valid during the making 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.
Avoid contact with the eyes and skin.

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

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-labelling of category III.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 4)

(Contd. of page 3)

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 trough 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:	
Form:	*Fluid*
Colour:	*Colourless*
Odour:	*Odourless*
Odour threshold:	*Not determined.*
pH-value at 20 °C:	*<1*
Change in condition	
Melting point/freezing point:	*Undetermined.*
Initial boiling point and boiling range:	*Undetermined.*
Flash point:	*Not applicable.*
Flammability	*Not applicable.*
Decomposition temperature:	*Not determined.*
Ignition temperature:	*Product is not selfigniting.*
Explosive properties:	*Product does not present an explosion hazard.* *Not determined.*
Explosion limits:	
Lower:	*Not determined.*
Upper:	*Not determined.*
Vapour pressure at 20 °C:	*23 hPa*
Density at 20 °C:	*1.521 g/cm³*
Relative density	*Not determined.*
Vapour 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.*

(Contd. on page 5)

(Contd. of page 4)

Kinematic: *Not determined.*
Solvent content:
Water: *25.0 %*
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
Primary irritant effect:
Skin corrosion/irritation *Strong caustic effect on skin and mucous membranes.*
Serious eye damage/irritation
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
Respiratory or skin sensitisation *No sensitising effects known.*
Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
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.*
Behaviour 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 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
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.*

(Contd. on page 6)

(Contd. of page 5)

Other adverse effects *No further relevant information available.*

13 Disposal considerations

Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

* 14 Transport information

UN-Number
IMDG, IATA *UN1830*
UN proper shipping name
ADR *UN1830 SULPHURIC ACID*
IMDG *SULPHURIC ACID*
IATA *Sulphuric acid*
Transport hazard class(es)

ADR

Class *8 (C1) Corrosive substances.*
Label *8*

IMDG, IATA

Class *8 Corrosive substances.*
Label *8*
Packing group
ADR, 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 *(SGG1a) Strong acids*
Stowage Category *C*
Stowage Code *SW15 For metal drums, stowage category B.*
Segregation Code *SG36 Stow "separated from" SGG18-alkalis.*
SG49 Stow "separated from" SGG6-cyanides
Transport in bulk according to Annex II of Marpol and the IBC Code *Not applicable.*

Transport/Additional information:

ADR
Limited quantities (LQ) *1L*
Transport category *2*
Tunnel restriction code *E*

(Contd. on page 7)

(Contd. of page 6)

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

GHS05

Signal word *Danger*

Hazard-determining components of labelling:
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 [or shower].
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

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

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 the latest revision of the safety data sheet *09/20/2024 / 7*
Abbreviations and acronyms:
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)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
*** 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 GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

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

Emergency telephone number: *+1 604 682 5050*

2 Hazard identification

Classification of the substance or mixture

GHS06 Skull and crossbones

Acute Toxicity (Inhalation) - Category 3	*H331 Toxic if inhaled.*

GHS08 Health hazard

Respiratory Sensitizer - Category 1	*H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
Germ Cell Mutagenicity - Category 1B	*H340 May cause genetic defects.*
Carcinogenicity - Category 1B	*H350 May cause cancer.*
Reproductive Toxicity - Category 1B	*H360 May damage fertility or the unborn child.*
Specific Target Organ Toxicity - Repeated Exposure - Category 1	*H372 Causes damage to the respiratory system through prolonged or repeated exposure.*

GHS05 Corrosion

Skin Corrosion - Category 1A	*H314 Causes severe skin burns and eye damage.*
Serious Eye Damage - Category 1	*H318 Causes serious eye damage.*

GHS07

Skin Sensitizer - Category 1	*H317 May cause an allergic skin reaction.*

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

(Contd. on page 2)

(Contd. of page 1)

Hazard pictograms

GHS05 GHS06 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
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 [or shower].
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

* 3 Composition/Information on ingredients

Chemical characterisation: Mixtures
Description: *Mixture of substances listed below with nonhazardous additions.*

Dangerous components:		
CAS: 7664-93-9	*sulphuric acid* *Skin Corrosion - Category 1A, H314*	*10-20% **
CAS: 7778-50-9	*Potassium dichromate* *Oxidizing Solids – Category 2, H272; Acute Toxicity (Oral) - Category 3, H301; Acute Toxicity (Inhalation) - Category 2, H330; Respiratory Sensitizer - Category 1, H334; Germ Cell Mutagenicity - Category 1B, H340; Carcinogenicity - Category 1A, H350; Reproductive Toxicity - Category 1B, H360; Specific Target Organ Toxicity - Repeated Exposure - Category 1, H372; Skin Corrosion - Category 1B, H314; Acute Toxicity (Dermal) – Category 4, H312; Skin Sensitizer - Category 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 equipment only after contaminated clothing have been completely removed.

(Contd. on page 3)

(Contd. of page 2)

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 plenty of water and provide fresh air. Call for a doctor immediately.*

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:
CO2, 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.
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 neutralising 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.

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

(Contd. on page 4)

(Contd. of page 3)

Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *Keep container tightly sealed.*
Storage class: *6.1 B*
Specific end use(s) *No further relevant information available.*

8 Exposure controls/ Personal protection

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

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
CAS: 7664-93-9 sulphuric acid	
EL	*TWA: 0.2 mg/m³* *thoracic, ACGIH A2; IARC 1*
EV	*TWA: 0.2 mg/m³*
CAS: 7778-50-9 Potassium dichromate	
EL	*TWA: 0.025 mg/m³* *Ceiling: 0.1 mg/m³* *as Cr; ACGIH A1, IARC 1; Skin; S(D), S(R)*

DNELs		
CAS: 7664-93-9 sulphuric acid		
Inhalative	*DNEL short-term*	*0.1 mg/m³ (worker) (local effects)*
	DNEL long-term	*0.05 mg/m³ (worker) (local effects)*

PNECs	
CAS: 7664-93-9 sulphuric acid	
PNEC	*8.8 mg/L (Wastewater treatment plant)*
	0.25 mg/L (sea water)
PNEC	*2.5 µg/L (fresh water)*
PNEC	*2 µg/kg (marine sediment)*
	2 µg/kg (freshwater sediment)
CAS: 7778-50-9 Potassium dichromate	
PNEC	*0.21 mg/L (Wastewater treatment plant)*
	0 mg/L (fresh water)
PNEC	*0.15 mg/kg (marine sediment)*
	0.15 mg/kg (freshwater sediment)
	0.035 mg/kg (soil)

Additional information: *The lists valid during the making 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.

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

(Contd. on page 5)

(Contd. of page 4)

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-labelling of category III.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves
Nitrile rubber, NBR
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 trough 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:
Form: *Fluid*
Colour: *Light orange colour*
Odour: *Odourless*
Odour threshold: *Not determined.*

pH-value: *Not determined.*

Change in condition
Melting point/freezing point: *Undetermined.*
Initial boiling point and boiling range: *100 °C*

Flash point: *Not applicable.*

Flammability *Not applicable.*

Decomposition temperature: *Not determined.*

Ignition temperature: *Product is not selfigniting.*

Explosive properties: *Product does not present an explosion hazard.*
Not determined.

Explosion limits:
Lower: *Not determined.*
Upper: *Not determined.*

Vapour pressure at 20 °C: *23 hPa*

Density at 20 °C: *1.117 g/cm³*

(Contd. on page 6)

(Contd. of page 5)

Relative density	*Not determined.*
Vapour 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.*

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 relevant for classification:		
CAS: 7778-50-9 Potassium dichromate		
Oral	*LD50*	*190 mg/kg (mouse)*

Primary irritant effect:
Skin corrosion/irritation *Strong caustic effect on skin and mucous membranes.*
Serious eye damage/irritation
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
Respiratory or skin sensitisation
Sensitisation possible through inhalation.
Sensitisation possible through skin contact.
Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
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.
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Germ Cell Mutagenicity - Category 1B, Carcinogenicity - Category 1B, Reproductive Toxicity - Category 1B

(Contd. on page 7)

(Contd. of page 6)

12 Ecological information

Toxicity
Aquatic toxicity: *No further relevant information available.*
Persistence and degradability *No further relevant information available.*
Behaviour 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 (German Regulation) (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 sewage water or drainage ditch undiluted or unneutralised.
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.*

13 Disposal considerations

Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

14 Transport information

UN-Number
IMDG, IATA *UN2922*
UN proper shipping name
ADR *UN2922 CORROSIVE LIQUID, TOXIC, N.O.S. (SULPHURIC 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)

ADR

Class *8 (CT1) Corrosive substances.*
Label *8+6.1*

IMDG

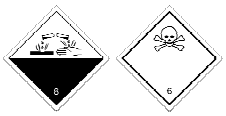
Class *8 Corrosive substances.*

(Contd. on page 8)

(Contd. of page 7)

Label *8/6.1*

IATA



Class	*8 Corrosive substances.*
Label	*8 (6.1)*
Packing group	
ADR, 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 Marpol and the IBC Code	*Not applicable.*

Transport/Additional information:

ADR

Limited quantities (LQ)	*1L*
Transport category	*2*
Tunnel restriction code	*E*

IMDG

Limited quantities (LQ)	*1L*
Excepted quantities (EQ)	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
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
GHS label elements
The product is classified and labelled according to the Globally Harmonised System (GHS).
Hazard pictograms

GHS05 GHS06 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
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.

(Contd. on page 9)

(Contd. of page 8)

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 [or shower].
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
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, Annex II:
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.

Waterhazard 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 the latest revision of the safety data sheet *09/20/2024 / 14*
Abbreviations and acronyms:
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)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
*** 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 GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

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

Emergency telephone number: *+1 604 682 5050*

2 Hazard identification

Classification of the substance or mixture
The substance is not classified, according to the Globally Harmonised System (GHS).

Label elements
GHS label elements *Void*
Hazard pictograms *Void*
Signal word *Void*
Hazard statements *Void*
Other hazards
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

3 Composition/Information on ingredients

Chemical characterisation: Substances
CAS No. Description
CAS: 57-50-1 sucrose
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.

(Contd. on page 2)

(Contd. of page 1)

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
For safety reasons unsuitable extinguishing agents: *no further information*
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.

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 fire - and explosion protection: *No special measures required.*

Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*
Storage class: *11*
Specific end use(s) *No further relevant information available.*

8 Exposure controls/ Personal protection

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

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
CAS: 57-50-1 sucrose	
EL	*TWA: 10* 3** mg/m³ *total dust;**respirable fraction*
EV	*TWA: 10 mg/m³ total dust*

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

Exposure controls
Personal protective equipment:

General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: *Not required.*

(Contd. on page 3)

(Contd. of page 2)

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 trough 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*
Colour:	*Colourless*
Odour:	*Odourless*
Odour threshold:	*Not determined.*
pH-value:	*Not applicable.*
Change in condition	
Melting point/freezing point:	*Undetermined.*
Initial boiling point and boiling range:	*Undetermined.*
Flash point:	*Not applicable.*
Flammability	*Product is not flammable.*
Decomposition temperature:	*Not determined.*
Ignition temperature:	*Not determined.*
Explosive properties:	*Product does not present an explosion hazard.* *Not determined.*
Explosion limits:	
Lower:	*Not determined.*
Upper:	*Not determined.*
Vapour pressure:	*Not applicable.*
Density at 20 °C:	*0.94 g/cm³*
Relative density	*Not determined.*
Vapour density	*Not applicable.*
Evaporation rate	*Not applicable.*
Solubility in / Miscibility with water:	*Soluble.*
Partition coefficient: n-octanol/water:	*Not determined.*
Viscosity:	
Dynamic:	*Not applicable.*
Kinematic:	*Not applicable.*
Other information	*No further relevant information available.*

10 Stability and reactivity

Reactivity *No further relevant information available.*

(Contd. on page 4)

(Contd. of page 3)

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 relevant for classification:		
CAS: 57-50-1 sucrose		
Oral	*LD50*	*29,700 mg/kg (rat)*

Primary irritant effect:
Skin corrosion/irritation *No irritant effect.*
Serious eye damage/irritation *No irritating effect.*
Respiratory or skin sensitisation *No sensitising effects known.*
Additional toxicological information:
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
The substance is not subject to classification according to the latest version of the EU lists.

* 12 Ecological information

Toxicity
Aquatic toxicity: *No further relevant information available.*
Persistence and degradability *No further relevant information available.*
Behaviour 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 (German Regulation) (Assessment by list): 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 *Smaller quantities can be disposed of with household waste.*

Uncleaned packaging:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

14 Transport information

UN-Number
ADN, IMDG, IATA *Void*
UN proper shipping name
ADR, ADN, IMDG, IATA *Void*

(Contd. on page 5)

(Contd. of page 4)

Transport hazard class(es)

ADR, ADN, IMDG, IATA
Class *Void*
Packing group
ADR, IMDG, IATA *Void*
Environmental hazards:
Marine pollutant: *No*
Special precautions for user *Not applicable.*
Transport in bulk according to Annex II of Marpol 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
GHS label elements *Void*
Hazard pictograms *Void*
Signal word *Void*
Hazard statements *Void*

National regulations:

Waterhazard class: *Water hazard class 1 (Assessment by list): 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 the latest revision of the safety data sheet *09/20/2024 / 5*
Abbreviations and acronyms:
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LC50: Lethal concentration, 50 percent
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