

17.10.2023

Kit Components

| Product code | Description |
|---------------------|--|
| CY80AL-N1+SN | CA80AL Reagent Set for aluminum |

Components:

| | |
|-----------|---|
| 51517135B | CA80AL Reagent RN, Component 1 for aluminum |
| 51517136B | CA80AL Reagent RN, Component 2 for aluminum |
| 51517137B | CA80AL Reagent RB, Component 1 for aluminum |
| 51517138B | CA80AL Reagent RB, Component 2 for aluminum |
| 51517139B | CA80AL Reagent RK for aluminum |

SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: CA80AL Reagent RN, Component 1

Synonym: for aluminum

Article number: 51517135B

Recommended use of the chemical and restrictions on use No further relevant information available.

Application of the substance / the mixture Laboratory chemicals

Supplier's details

Manufacturer/Supplier:

Endress+Hauser
 Conducta GmbH+Co. KG
 Dieselstraße 24
 D-70839 Gerlingen

Further information obtainable from:

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

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

GHS label elements

GHS label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements

Harmful to aquatic life with long lasting effects.

Precautionary statements

Avoid release to the environment.

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

Other hazards

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

Results of PBT and vPvB assessment

PBT: Not applicable.

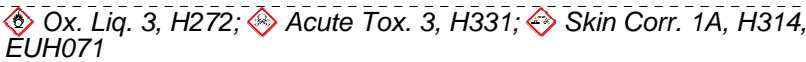
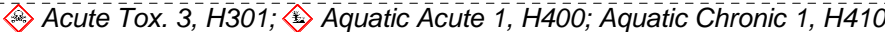
vPvB: Not applicable.

SECTION 3: Composition or information on ingredients

Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

| | | |
|--------------------------------------|---|--------|
| CAS: 7697-37-2 EINECS: 231-714-2 | nitric acid  ATE: LC50/4 h inhalative: 2.65 mg/l Specific concentration limits: Ox. Liq. 3; H272: C ≥ 65 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C < 20 % | 0.1-1% |
| CAS: 18851-33-7 EINECS: 223-325-1 | 1,10-phenanthroline chloride monohydrate  | 0.1-1% |

(Contd. on page 2)

Trade name: CA80AL Reagent RN, Component 1

(Contd. of page 1)

Additional information: *For the wording of the listed hazard phrases refer to section 16.***SECTION 4: First-aid measures****Description of necessary first-aid measures****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.***Most important symptoms or effects, acute and delayed** *No further relevant information available.***Indication of immediate medical attention and special treatment needed, if necessary***No further relevant information available.***SECTION 5: Fire-fighting measures****Suitable extinguishing media****Suitable extinguishing agents:***CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***Specific hazards arising from the chemical** *No further relevant information available.***Special protective actions for fire fighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***Environmental precautions:***Do not allow 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).**Dispose contaminated material as waste according to section 13.***Reference to other sections***See Section 7 for information on safe handling.**See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.***SECTION 7: Handling and storage****Precautions for safe handling** *No special precautions are necessary if used correctly.***Information about fire - and explosion protection:** *No special measures required.***Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 12**Specific end use(s)** *No further relevant information available.*

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Trade name: CA80AL Reagent RN, Component 1

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SECTION 8: Exposure controls or personal protection**Control parameters****Ingredients with limit values that require monitoring at the workplace:**

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

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

Exposure controls

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

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

General protective and hygienic measures: *Wash hands before breaks and at the end of work.*

Respiratory protection: *Not required.*

Hand protection

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

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

No chemical-protective gloves required.

Material of gloves

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

Penetration time of glove material

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

Eye or face protection *Goggles recommended during refilling*

Body protection: *Protective work clothing*

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

Physical state

Fluid

Colour:

Clear

Odour:

Odourless

Odour threshold:

Not determined.

Melting point/freezing point:

Undetermined.

نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان

>100 °C

Flammability

Not applicable.

Upper or lower flammability or explosive limits

Lower:

Not determined.

Upper:

Not determined.

Flash point:

Not applicable.

Decomposition temperature:

Not determined.

pH at 20 °C

1-3

Viscosity:

Viscosity

Not determined.

Viscosity

Dynamic:

Not determined.

Solubility

water:

Fully miscible.

Partition coefficient: n-octanol or water

Not determined.

Vapour pressure at 20 °C:

23 hPa

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— ZA —

Trade name: CA80AL Reagent RN, Component 1

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Vapour pressure:**Vapour density + Relative density****Density:***Not determined.***Relative density***Not determined.***Vapour density***Not determined.***Other information****Appearance:****Form:***Liquid***Important information on protection of health and environment, and on safety.****Ignition temperature:***Product is not selfigniting.***Explosive properties:***Product does not present an explosion hazard.**Not determined.***Solvent content:****Water:***87.0 %***Solids content:***0.0 %***Change in condition****Evaporation rate***Not determined.***Information with regard to physical hazard classes****Explosives***Void***Flammable gases***Void***Aerosols***Void***Oxidising gases***Void***Gases under pressure***Void***Flammable liquids***Void***Flammable solids***Void***Self-reactive substances and mixtures***Void***Pyrophoric liquids***Void***Pyrophoric solids***Void***Self-heating substances and mixtures***Void***Substances and mixtures, which emit flammable gases in contact with water***Void***Oxidising liquids***Void***Oxidising solids***Void***Organic peroxides***Void***Corrosive to metals***Void***Desensitised explosives***Void***SECTION 10: Stability and reactivity****Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.**** SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.*

(Contd. on page 5)

Trade name: CA80AL Reagent RN, Component 1

(Contd. of page 4)

LD/LC50 values relevant for classification:**CAS: 7697-37-2 nitric acid***Inhalative* | LC50/4 h | 2.65 mg/l (ATE)**Skin corrosion or irritation** *Based on available data, the classification criteria are not met.***Serious eye damage or irritation** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *Based on available data, the classification criteria are not met.***Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***Carcinogenicity** *Based on available data, the classification criteria are not met.***Reproductive toxicity** *Based on available data, the classification criteria are not met.***Specific target organ toxicity – single exposure***Based on available data, the classification criteria are not met.***Specific target organ toxicity – repeated exposure***Based on available data, the classification criteria are not met.***Aspiration hazards** *Based on available data, the classification criteria are not met.***Information on other hazards****endocrine disrupting potential***None of the ingredients is listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***Other adverse effects****Remark:** *Harmful to fish***Additional ecological information:****General notes:***Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water**Do not allow product to reach ground water, water course or sewage system.**Danger to drinking water if even small quantities leak into the ground.**Harmful to aquatic organisms**Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low**pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased,**so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.***SECTION 13: Disposal considerations****Waste treatment methods****Recommendation***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****UN number**

ADN, IMDG, IATA

Void

(Contd. on page 6)

— ZA —

Trade name: CA80AL Reagent RN, Component 1

(Contd. of page 5)

| | |
|---|-----------------|
| UN proper shipping name | |
| ADR, ADN, IMDG, IATA | Void |
| Transport hazard class(es) | |
| ADR, ADN, IMDG, IATA | |
| Class | Void |
| Packing group | |
| ADR, IMDG, IATA | Void |
| Environmental hazards: | Not applicable. |
| Special precautions for user | Not applicable. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| UN "Model Regulation": | Void |

SECTION 15: Regulatory information**Safety, health and environmental regulations specific for the product in question****GHS label elements**

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

Hazard pictograms Void

Signal word Void

Hazard statements

Harmful to aquatic life with long lasting effects.

Precautionary statements

Avoid release to the environment.

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

Directive 2012/18/EU

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

National regulations:

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

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

SECTION 16: Other information

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

Department issuing SDS: PCC-TWR

Contact: MSDS.pcc@endress.com

Abbreviations and acronyms:

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

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

ICAO: International Civil Aviation Organisation

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Ox. Liq. 3: Oxidizing liquids – Category 3

Acute Tox. 3: Acute toxicity – Category 3

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

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

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

* Data compared to the previous version altered.

SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: **CA80AL Reagent RN, Component 2**

Synonym: *for aluminum*

Article number: 51517136B

CAS Number:

50-81-7

EC number:

200-066-2

Recommended use of the chemical and restrictions on use *No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

Supplier's details

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: MSDS.PCC@endress.com

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

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

GHS label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Other hazards

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

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

SECTION 3: Composition or information on ingredients

Substances

CAS No. Description

CAS: 50-81-7 L (+) - ascorbic acid

Identification number(s)

EC number: 200-066-2

SECTION 4: First-aid measures

Description of necessary first-aid measures

General information: *No special measures required.*

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

After skin contact: *Generally the product does not irritate the skin.*

After eye contact: *Rinse opened eye for several minutes under running water.*

(Contd. on page 2)

Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 1)

After swallowing: *If symptoms persist consult doctor.*

Most important symptoms or effects, acute and delayed *No further relevant information available.*

Indication of immediate medical attention and special treatment needed, if necessary

No further relevant information available.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: *no further information*

Specific hazards arising from the chemical *No further relevant information available.*

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

Protective equipment: *No special measures required.*

SECTION 6: Accidental release measures

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

Environmental precautions: *Do not allow to enter sewers/ surface or ground water.*

Methods and material for containment and cleaning up: *Pick up mechanically.*

Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

Precautions for safe handling *No special measures required.*

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: *None.*

Storage class: 11

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

SECTION 8: Exposure controls or personal protection

Control parameters

Ingredients with limit values that require monitoring at the workplace: *Not required.*

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

Exposure controls

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

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

General protective and hygienic measures:

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

Respiratory protection: *Not required.*

Hand protection *No chemical-protective gloves required.*

Material of gloves

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

(Contd. on page 3)

Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 2)

Penetration time of glove material

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

Eye or face protection *Not required.*

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****General Information****Physical state***Solid***Colour:***Whitish***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***191 °C***نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان***Undetermined.***Flammability***Product is not flammable.***Upper or lower flammability or explosive limits****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***Decomposition temperature:***Not determined.***pH***Slightly acidic***Viscosity:****Viscosity***Not applicable.***Viscosity****Dynamic:***Not applicable.***Solubility****water at 20 °C:***333 g/l***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure:***Not applicable.***Vapour pressure:****Vapour density + Relative density****Density at 20 °C:***0.95 g/cm³***Relative density***Not determined.***Vapour density***Not applicable.***Other information****Appearance:****Form:***Crystalline powder***Important information on protection of health and environment, and on safety.****Ignition temperature:***Not determined.***Explosive properties:***Product does not present an explosion hazard.**Not determined.***Solids content:***100.0 %***Molecular weight***176.13 g/mol***Change in condition****Evaporation rate***Not applicable.***Information with regard to physical hazard classes****Explosives***Void***Flammable gases***Void***Aerosols***Void***Oxidising gases***Void***Gases under pressure***Void***Flammable liquids***Void*

(Contd. on page 4)

Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 3)

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

SECTION 10: Stability and reactivity**Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.***LD/LC50 values relevant for classification:****CAS: 50-81-7 L (+) - ascorbic acid**

Oral | LD50 | 11,900 mg/kg (rat)

Skin corrosion or irritation *Based on available data, the classification criteria are not met.***Serious eye damage or irritation** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *Based on available data, the classification criteria are not met.***Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***Carcinogenicity** *Based on available data, the classification criteria are not met.***Reproductive toxicity** *Based on available data, the classification criteria are not met.***Specific target organ toxicity – single exposure***Based on available data, the classification criteria are not met.***Specific target organ toxicity – repeated exposure***Based on available data, the classification criteria are not met.***Aspiration hazards** *Based on available data, the classification criteria are not met.***Information on other hazards****endocrine disrupting potential***Substance is not listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.*

(Contd. on page 5)

Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 4)

Endocrine disrupting properties*The product does not contain substances with endocrine disrupting properties.***Other adverse effects****Additional ecological information:****General notes:***Water hazard class 1 (German Regulation) (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.***SECTION 13: Disposal considerations****Waste treatment methods****Recommendation** *Smaller quantities can be disposed of with household waste.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****UN number****ADN, IMDG, IATA** *Void***UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***Packing group****ADR, IMDG, IATA** *Void***Environmental hazards:****Marine pollutant:** *No***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***National regulations:****Waterhazard class:** *Water hazard class 1 (Assessment by list): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***Department issuing SDS:** *PCC-TWR*

(Contd. on page 6)

Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 5)

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

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SECTION 1: Identification of the substance or mixture and of the supplier

Product identifier

Trade name: **CA80AL Reagent RB, Component 1**

Synonym: *for aluminum*

Article number: 51517137B

CAS Number:

7732-18-5

EC number:

231-791-2

Recommended use of the chemical and restrictions on use *No further relevant information available.*

Application of the substance / the mixture *Laboratory chemicals*

Supplier's details

Manufacturer/Supplier:

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: MSDS.PCC@endress.com

Emergency phone number +27 (0)861 555 777

SECTION 2: Hazard identification

Classification of the substance or mixture

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

GHS label elements

GHS label elements *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

Other hazards

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

Results of PBT and vPvB assessment

PBT: *Not applicable.*

vPvB: *Not applicable.*

SECTION 3: Composition or information on ingredients

Substances

CAS No. Description

CAS: 7732-18-5 water

Identification number(s)

EC number: 231-791-2

SECTION 4: First-aid measures

Description of necessary first-aid measures

General information: *No special measures required.*

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

After skin contact: *Generally the product does not irritate the skin.*

After eye contact: *Rinse opened eye for several minutes under running water.*

(Contd. on page 2)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 1)

After swallowing: *If symptoms persist consult doctor.***Most important symptoms or effects, acute and delayed** *No further relevant information available.***Indication of immediate medical attention and special treatment needed, if necessary***No further relevant information available.***SECTION 5: Fire-fighting measures****Suitable extinguishing media****Suitable extinguishing agents:***CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***Specific hazards arising from the chemical** *No further relevant information available.***Special protective actions for fire fighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***Environmental precautions:** *Dilute with plenty of water.***Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).***Reference to other sections***No dangerous substances are released.**See Section 7 for information on safe handling.**See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.***SECTION 7: Handling and storage****Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 12**Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls or personal protection****Control parameters****Ingredients with limit values that require monitoring at the workplace:** *Not required.***Additional information:** *The lists valid during the making were used as basis.***Exposure controls****Appropriate engineering controls** *No further data; see section 7.***Individual protection measures, such as personal protective equipment (PPE)****General protective and hygienic measures:***The usual precautionary measures are to be adhered to when handling chemicals.***Respiratory protection:** *Not required.***Hand protection** *No chemical-protective gloves required.*

(Contd. on page 3)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 2)

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 or face protection Not required.

Body protection: Protective work clothing

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

| | |
|---|---------------------|
| Physical state | Fluid |
| Colour: | Colourless |
| Odour: | Odourless |
| Odour threshold: | Not determined. |
| Melting point/freezing point: | 0 °C |
| نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان | 100 °C |
| Flammability | Not applicable. |
| Upper or lower flammability or explosive limits | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Flash point: | Not applicable. |
| Decomposition temperature: | Not determined. |
| pH | Not determined. |
| Viscosity: | |
| Viscosity | Not determined. |
| Viscosity | |
| Dynamic at 20 °C: | 0.952 mPas |
| Solubility | |
| water: | Fully miscible. |
| Partition coefficient: n-octanol or water | Not determined. |
| Vapour pressure at 20 °C: | 23 hPa |
| Vapour pressure: | |
| Vapour density + Relative density | |
| Density at 20 °C: | 1 g/cm ³ |
| Relative density | Not determined. |
| Vapour density | Not determined. |

Other information**Appearance:**

Form:

Fluid

Important information on protection of health and environment, and on safety.

Ignition temperature:

Not determined.

Explosive properties:

Product does not present an explosion hazard.
Not determined.

Water:

100.0 %

Solids content:

0.0 %

Molecular weight

18.02 g/mol

Change in condition

Evaporation rate

Not determined.

Information with regard to physical hazard classes

Explosives

Void

(Contd. on page 4)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 3)

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

SECTION 10: Stability and reactivity**Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.***Skin corrosion or irritation** *Based on available data, the classification criteria are not met.***Serious eye damage or irritation** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *Based on available data, the classification criteria are not met.***Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***Carcinogenicity** *Based on available data, the classification criteria are not met.***Reproductive toxicity** *Based on available data, the classification criteria are not met.***Specific target organ toxicity – single exposure***Based on available data, the classification criteria are not met.***Specific target organ toxicity – repeated exposure***Based on available data, the classification criteria are not met.***Aspiration hazards** *Based on available data, the classification criteria are not met.***Information on other hazards****endocrine disrupting potential***Substance is not listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.*

(Contd. on page 5)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 4)

vPvB: *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***Other adverse effects****Additional ecological information:****General notes:** *Not hazardous for water.***SECTION 13: Disposal considerations****Waste treatment methods****Recommendation** *Smaller quantities can be disposed of with household waste.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****UN number****ADN, IMDG, IATA** *Void***UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***Packing group****ADR, IMDG, IATA** *Void***Environmental hazards:****Marine pollutant:** *No***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of****MARPOL 73/78 and the IBC Code** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organisation*

(Contd. on page 6)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 5)

*ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)**ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**** Data compared to the previous version altered.**

ZA—

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** CA80AL Reagent RB, Component 2**Synonym:** for aluminum**Article number:** 51517138B**CAS Number:**

115-41-3

EC number:

204-088-3

Recommended use of the chemical and restrictions on use No further relevant information available.**Application of the substance / the mixture** Laboratory chemicals**Supplier's details****Manufacturer/Supplier:**

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: MSDS.PCC@endress.com

Emergency phone number +27 (0)861 555 777**SECTION 2: Hazard identification****Classification of the substance or mixture***The substance is not classified, according to the Globally Harmonised System (GHS).***GHS label elements****GHS label elements** Void**Hazard pictograms** Void**Signal word** Void**Hazard statements** Void**Other hazards***The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.***Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**SECTION 3: Composition or information on ingredients****Substances****CAS No. Description**

CAS: 115-41-3 pyrocatechol violet

Identification number(s)

EC number: 204-088-3

SECTION 4: First-aid measures**Description of necessary first-aid measures****General information:** No special measures required.**After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:** Generally the product does not irritate the skin.**After eye contact:** Rinse opened eye for several minutes under running water.

(Contd. on page 2)

Trade name: CA80AL Reagent RB, Component 2

(Contd. of page 1)

After swallowing: *If symptoms persist consult doctor.*

Most important symptoms or effects, acute and delayed *No further relevant information available.*

Indication of immediate medical attention and special treatment needed, if necessary

No further relevant information available.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: *no further information*

Specific hazards arising from the chemical *No further relevant information available.*

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

Protective equipment: *No special measures required.*

SECTION 6: Accidental release measures

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

Environmental precautions: *Do not allow to enter sewers/ surface or ground water.*

Methods and material for containment and cleaning up: *Pick up mechanically.*

Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

Precautions for safe handling *No special measures required.*

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: *None.*

Storage class: 11

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

SECTION 8: Exposure controls or personal protection

Control parameters

Ingredients with limit values that require monitoring at the workplace: *Not required.*

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

Exposure controls

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

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

General protective and hygienic measures:

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

Respiratory protection: *Not required.*

Hand protection *No chemical-protective gloves required.*

Material of gloves

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

(Contd. on page 3)

Trade name: CA80AL Reagent RB, Component 2

(Contd. of page 2)

Penetration time of glove material

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

Eye or face protection *Not required.*

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****General Information****Physical state***Solid***Colour:***Dark red***Odour:***Odourless***Odour threshold:***Not determined.***Melting point/freezing point:***Undetermined.***نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان***Undetermined.***Flammability***Product is not flammable.***Upper or lower flammability or explosive limits****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***Decomposition temperature:***Not determined.***pH***Not applicable.***Viscosity:****Viscosity***Not applicable.***Viscosity****Dynamic:***Not applicable.***Solubility****water:***Soluble.***Partition coefficient: n-octanol or water***Not determined.***Vapour pressure:***Not applicable.***Vapour pressure:****Vapour density + Relative density****Density:***Not determined.***Relative density***Not determined.***Vapour density***Not applicable.***Other information****Appearance:****Form:***Crystalline powder***Important information on protection of health and environment, and on safety.****Ignition temperature:***Not determined.***Explosive properties:***Product does not present an explosion hazard.**Not determined.***Molecular weight***386.38 g/mol***Change in condition****Evaporation rate***Not applicable.***Information with regard to physical hazard classes****Explosives***Void***Flammable gases***Void***Aerosols***Void***Oxidising gases***Void***Gases under pressure***Void***Flammable liquids***Void***Flammable solids***Void*

(Contd. on page 4)

Trade name: CA80AL Reagent RB, Component 2

(Contd. of page 3)

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

SECTION 10: Stability and reactivity**Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.***Skin corrosion or irritation** *Based on available data, the classification criteria are not met.***Serious eye damage or irritation** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *Based on available data, the classification criteria are not met.***Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***Carcinogenicity** *Based on available data, the classification criteria are not met.***Reproductive toxicity** *Based on available data, the classification criteria are not met.***Specific target organ toxicity – single exposure***Based on available data, the classification criteria are not met.***Specific target organ toxicity – repeated exposure***Based on available data, the classification criteria are not met.***Aspiration hazards** *Based on available data, the classification criteria are not met.***Information on other hazards****endocrine disrupting potential***Substance is not listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.*

(Contd. on page 5)

Trade name: CA80AL Reagent RB, Component 2

(Contd. of page 4)

Other adverse effects**Additional ecological information:****General notes:***Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water**Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.***SECTION 13: Disposal considerations****Waste treatment methods****Recommendation** *Smaller quantities can be disposed of with household waste.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****UN number****ADN, IMDG, IATA** *Void***UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***Packing group****ADR, IMDG, IATA** *Void***Environmental hazards:****Marine pollutant:** *No***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of****MARPOL 73/78 and the IBC Code** *Not applicable.***Transport/Additional information:***Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information***This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.***Department issuing SDS:** *PCC-TWR***Contact:** *MSDS.pcc@endress.com*

(Contd. on page 6)

Trade name: CA80AL Reagent RB, Component 2

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Abbreviations and acronyms:

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

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

ICAO: International Civil Aviation Organisation

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

ZA—

SECTION 1: Identification of the substance or mixture and of the supplier**Product identifier****Trade name:** CA80AL Reagent RK**Synonym:** for aluminum**Article number:** 51517139B**Recommended use of the chemical and restrictions on use** No further relevant information available.**Application of the substance / the mixture** Laboratory chemicals**Supplier's details****Manufacturer/Supplier:**

Endress+Hauser

Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

Further information obtainable from:

Phone: +49 (0)7156 209-10117

E-Mail: MSDS.PCC@endress.com

Emergency phone number +27 (0)861 555 777**SECTION 2: Hazard identification****Classification of the substance or mixture**

Skin Sens. 1 H317 May cause an allergic skin reaction.

GHS label elements**GHS label elements**

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

Hazard pictograms

GHS07

Signal word Warning**Hazard-determining components of labelling:**

Hexamethylenetetramine

Hazard statements

May cause an allergic skin reaction.

Precautionary statements

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wear protective gloves.

If skin irritation or rash occurs: Get medical advice/attention.

Specific treatment (see on this label).

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

Additional information:

Product contains: Reportable explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 9.

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.

Trade name: CA80AL Reagent RK

(Contd. of page 1)

vPvB: Not applicable.

SECTION 3: Composition or information on ingredients**Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.**Dangerous components:**

| | | | |
|------------------------------------|------------------------|--|--------|
| CAS: 100-97-0 EINECS: 202-905-8 | Hexamethylenetetramine | ⚠ Flam. Sol. 2, H228; ⚠ Skin Sens. 1, H317 | 20-40% |
|------------------------------------|------------------------|--|--------|

Additional information: For the wording of the listed hazard phrases refer to section 16.**SECTION 4: First-aid measures****Description of necessary first-aid measures****General information:** Immediately remove any clothing soiled by the product.**After inhalation:**

Supply fresh air and to be sure call for a 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.**After swallowing:** If symptoms persist consult doctor.**Most important symptoms or effects, acute and delayed** No further relevant information available.**Indication of immediate medical attention and special treatment needed, if necessary**

No further relevant information available.

SECTION 5: Fire-fighting measures**Suitable extinguishing media****Suitable extinguishing agents:**CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**For safety reasons unsuitable extinguishing agents:** no further information**Specific hazards arising from the chemical** No further relevant information available.**Special protective actions for fire fighters** No further relevant information available.**Protective equipment:** No special measures required.**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures** Wear protective clothing.**Environmental precautions:**

Dilute with plenty of water.

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

Methods and material for containment and cleaning up:

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

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

(Contd. on page 3)

Trade name: CA80AL Reagent RK

(Contd. of page 2)

SECTION 7: Handling and storage**Precautions for safe handling***Ensure good ventilation/exhaustion at the workplace.**Prevent formation of aerosols.***Information about fire - and explosion protection:** *No special measures required.***Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *None.***Storage class:** 12**Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls or personal protection****Control parameters****Ingredients with limit values that require monitoring at the workplace:***The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.***DNELs****CAS: 100-97-0 Hexamethylenetetramine**

| | | |
|------------|-------------------------|--|
| Oral | DNEL long term exposure | 0.8 mg/kg (consumer) (systemic effect) |
| Dermal | DNEL long term | 3.2 mg/kg (consumer) (systemic effect) |
| Inhalative | DNEL long-term | 5.6 mg/m ³ (worker) (systemic effect) |
| | | 1.2 mg/m ³ (consumer) (systemic effect) |

PNECs**CAS: 100-97-0 Hexamethylenetetramine**

| | |
|------|---------------------------------------|
| PNEC | 100 mg/L (Wastewater treatment plant) |
| | 3 mg/L (fresh water) |
| | 0.3 mg/L (sea water) |
| PNEC | 1.02 mg/kg (marine sediment) |
| | 10.2 mg/kg (freshwater sediment) |
| | 0.28 mg/kg (soil) |

Additional information: *The lists valid during the making were used as basis.***Exposure controls****Appropriate engineering controls** *No further data; see section 7.***Individual protection measures, such as personal protective equipment (PPE)****General protective and hygienic measures:***Immediately remove all soiled and contaminated clothing**Wash hands before breaks and at the end of work.***Respiratory protection:***In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.***Hand protection**

Protective gloves

To avoid skin problems reduce the wearing of gloves to the required minimum. Only use chemical-protective gloves with CE-labelling of category III.

(Contd. on page 4)

—ZA—

Trade name: CA80AL Reagent RK

(Contd. of page 3)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
No chemical-protective gloves required.

Material of gloves

Nitrile rubber, NBR

Natural rubber, NR

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

Penetration time of glove material

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

Eye or face protection Goggles recommended during refilling

Body protection: Protective work clothing

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

Fluid

Colour:

Clear

Odour:

Amine-like

Odour threshold:

Not determined.

Melting point/freezing point:

Undetermined.

نقطة الغليان أو نقطة الغليان الأولية ونطاق الغليان

>100 °C

Flammability

Not applicable.

Upper or lower flammability or explosive limits**Lower:**

Not determined.

Upper:

Not determined.

Flash point:

Not applicable.

Decomposition temperature:

Not determined.

pH at 20 °C

8.5-10.5

Viscosity:**Viscosity**

Not determined.

Viscosity**Dynamic:**

Not determined.

Solubility**water:**

Fully miscible.

Partition coefficient: n-octanol or water

Not determined.

Vapour pressure at 20 °C:

23 hPa

Vapour pressure:**Vapour density + Relative density****Density at 20 °C:**1.122 g/cm³**Relative density**

Not determined.

Vapour density

Not determined.

Other information**Appearance:****Form:**

Fluid

Important information on protection of health and environment, and on safety.

Ignition temperature:

Product is not selfigniting.

Explosive properties:

Product does not present an explosion hazard.
Not determined.

Solvent content:**Water:**

63.0 %

Solids content:

0.0 %

(Contd. on page 5)

Trade name: CA80AL Reagent RK

(Contd. of page 4)

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

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

SECTION 10: Stability and reactivity**Reactivity** *No further relevant information available.***Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***Possibility of hazardous reactions** *No dangerous reactions known.***Conditions to avoid** *No further relevant information available.***Incompatible materials:** *No further relevant information available.***Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** *Based on available data, the classification criteria are not met.***Respiratory and skin sensitization** *May cause an allergic skin reaction.***Information on other hazards****endocrine disrupting potential***None of the ingredients is listed.***SECTION 12: Ecological information****Toxicity****Aquatic toxicity:** *No further relevant information available.***Persistence and degradability** *No further relevant information available.***Bioaccumulative potential** *No further relevant information available.***Mobility in soil** *No further relevant information available.***Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.*

(Contd. on page 6)

Trade name: CA80AL Reagent RK

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Other adverse effects**Additional ecological information:****General notes:***Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water**Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.***SECTION 13: Disposal considerations****Waste treatment methods****Recommendation***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***Uncleaned packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.***SECTION 14: Transport information****UN number****ADN, IMDG, IATA** Void**UN proper shipping name****ADR, ADN, IMDG, IATA** Void**Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** Void**Packing group****ADR, IMDG, IATA** Void**Environmental hazards:** *Not applicable.***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of****MARPOL 73/78 and the IBC Code** *Not applicable.***UN "Model Regulation":** Void*** SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****GHS label elements***The product is classified and labelled according to the Globally Harmonised System (GHS).***Hazard pictograms**

GHS07

Signal word *Warning***Hazard-determining components of labelling:***Hexamethylenetetramine***Hazard statements***May cause an allergic skin reaction.***Precautionary statements***Avoid breathing dust/fume/gas/mist/vapours/spray.**Wear protective gloves.**If skin irritation or rash occurs: Get medical advice/attention.**Specific treatment (see on this label).**Dispose of contents/container in accordance with local/regional/national/international regulations.*

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Trade name: CA80AL Reagent RK

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Directive 2012/18/EU**Named dangerous substances - ANNEX I** *None of the ingredients is listed.***National regulations:****Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***SECTION 16: Other information**

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

Department issuing SDS: PCC-TWR**Contact:** *MSDS.pcc@endress.com***Abbreviations and acronyms:***RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organisation**ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)**ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**DNEL: Derived No-Effect Level (REACH)**PNEC: Predicted No-Effect Concentration (REACH)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Flam. Sol. 2: Flammable solids – Category 2**Skin Sens. 1: Skin sensitisation – Category 1**** Data compared to the previous version altered.**