

Product code	Description
<b>CY80AL-N1+SN</b>	<b>CA80AL Reagent Set for aluminum</b>

## 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****1.1 Product identifier****Trade name:** CA80AL Reagent RN, Component 1**Synonym:** for aluminum**Article number:** 51517135B**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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 209-117

Fax.: +49 (0)7156 209-222

E-Mail: MSDS.PCC@endress.com

**1.4 Emergency telephone number:** 0064 800 764 766**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



corrosion

Skin Corr. 1 H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

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

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

**2.2 Label elements****Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals.

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

**Safety phrases:**

29 Do not empty into drains.

**Special labelling of certain preparations:**

Safety data sheet available for professional user on request.

**2.3 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 RN, Component 1**

(Contd. of page 1)

vPvB: Not applicable.

**SECTION 3: Composition/Information on ingredients****3.2 Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.**Dangerous components:**

CAS: 18851-33-7	1,10-phenanthroline chloride monohydrate	≤1%
EINECS: 223-325-1	☠ Acute Tox. 3, H301; ☠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	

**Additional information:** For the wording of the listed hazard phrases refer to section 16.**SECTION 4: First aid measures****4.1 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.**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Fire fighting measures****5.1 Extinguishing media****Suitable extinguishing agents:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**For safety reasons unsuitable extinguishing agents:** no further information**5.2 Special hazards arising from the substance or mixture**

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

**5.3 Advice for firefighters** No further relevant information available.**Protective equipment:** Mount respiratory protective device.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

**6.2 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.

**6.3 Methods and material for containment and cleaning up:**

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

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

(Contd. on page 3)

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

(Contd. of page 2)

**6.4 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****7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

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

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

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

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

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

**Storage class:** 6.1 D

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

**SECTION 8: Exposure controls/personal protection****8.1 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.

**8.2 Exposure controls**

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

**Individual protection measures, such as 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.

**Hand protection**

Protective gloves

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

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

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

**Material of gloves**

Nitrile rubber, NBR

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.

(Contd. on page 4)

## Trade name: CA80AL Reagent RN, Component 1

(Contd. of page 3)

**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/face protection**

Tightly sealed goggles

**Body protection:** Protective work clothing

\* **SECTION 9: Physical and chemical properties****9.1 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.

**Boiling point or initial boiling point and boiling range**

&gt;100 °C

**Flammability**

Not applicable.

**Lower and upper explosion limit****Lower:**

Not determined.

**Upper:**

Not determined.

**Flash point:**

Not applicable.

**Auto-ignition temperature:**

Product is not selfigniting.

**Decomposition temperature:**

Not determined.

**pH at 20 °C**

1-3

**Viscosity:****Kinematic viscosity**

Not determined.

**Dynamic:**

Not determined.

**Solubility****water:**

Fully miscible.

**Partition coefficient n-octanol/water (log value)**

Not determined.

**Vapour pressure at 20 °C:**

23 hPa

**Density and/or relative density****Density:**

Not determined.

**Relative density**

Not determined.

**Vapour density**

Not determined.

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

Liquid

**Important information on protection of health and environment, and on safety.****Explosive properties:**

Product does not present an explosion hazard.  
Not determined.

**Solvent content:****Water:**

87.3 %

**Solids content:**

0.0 %

**Change in condition****Evaporation rate**

Not determined.

**Information with regard to physical hazard classes****Explosives**

Void

(Contd. on page 5)

## Trade name: CA80AL Reagent RN, Component 1

(Contd. of page 4)

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****10.1 Reactivity** *No further relevant information available.***10.2 Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Skin corrosion/irritation** *Causes severe skin burns and eye damage.***Serious eye damage/irritation** *Causes serious eye damage.***11.2 Information on other hazards****Endocrine disrupting properties***None of the ingredients is listed.***\* SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 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.**Must not reach sewage water or drainage ditch undiluted or unneutralised.*

(Contd. on page 6)

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

(Contd. of page 5)

*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****13.1 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****14.1 UN number or ID number****ADN, IMDG, IATA**

Void

**14.2 UN proper shipping name****ADR, ADN, IMDG, IATA**

Void

**14.3 Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class**

Void

**14.4 Packing group****ADR, IMDG, IATA**

Void

**14.5 Environmental hazards:**

Not applicable.

**14.6 Special precautions for user**

Not applicable.

**14.7 Maritime transport in bulk according to IMO****instruments**

Not applicable.

**UN "Model Regulation":**

Void

**\* SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****New Zealand Inventory of Chemicals***All ingredients are listed.***HSNO Approval numbers**

CAS: 18851-33-7 | 1,10-phenanthroline chloride monohydrate

HSR005441

**Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.***Seveso category H2 ACUTE TOXIC****Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t**National regulations:****Waterhazard class:** *Water hazard class 2 (Self-assessment): hazardous for water.***15.2 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.*

(Contd. on page 7)

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

(Contd. of page 6)

**16.3 Recommended restriction of use****Department issuing SDS:** PCC-TWRC**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 européen sur le transport 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**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 3: Acute toxicity - oral – Category 3**Skin Corr. 1: Skin corrosion/irritation – Category 1**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**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****1.1 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

**1.2 Relevant identified uses of the substance or mixture and uses advised against***No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***1.3 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 209-117**Fax.: +49 (0)7156 209-222**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 0064 800 764 766**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***The substance is not classified, according to the CLP regulation.***Classification according to Directive 67/548/EEC or Directive 1999/45/EC** *Not applicable.***Information concerning particular hazards for human and environment:** *Not applicable.***2.2 Label elements****Labelling according to EU guidelines:***Observe the general safety regulations when handling chemicals.**The substance is not subject to classification according to EU lists and other sources of literature known to us.***Special labelling of certain preparations:***Safety data sheet available for professional user on request.***2.3 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/Information on ingredients****3.1 Substances****CAS No. Description**

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

**Identification number(s)****EC number:** 200-066-2

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

(Contd. of page 1)

**SECTION 4: First aid measures****4.1 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.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.***4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***\* SECTION 5: Fire fighting measures****5.1 Extinguishing media****Suitable extinguishing agents:***CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:** *Pick up mechanically.***6.4 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****7.1 Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 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**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 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.*

(Contd. on page 3)

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

(Contd. of page 2)

**8.2 Exposure controls****Appropriate engineering controls** *No further data; see item 7.***Individual protection measures, such as personal protective equipment****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.***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/face protection** *Not required.***Body protection:** *Protective work clothing***SECTION 9: Physical and chemical properties****9.1 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***Boiling point or initial boiling point and boiling range***Undetermined.***Flammability***Product is not flammable.***Lower and upper explosion limit****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***Auto-ignition temperature:***Not determined.***Decomposition temperature:***Not determined.***pH***Slightly acidic***Viscosity:****Kinematic viscosity***Not applicable.***Dynamic:***Not applicable.***Solubility****water at 20 °C:***333 g/l***Partition coefficient n-octanol/water (log value)** *Not determined.***Vapour pressure:***Not applicable.***Density and/or relative density****Density at 20 °C:***0.95 g/cm<sup>3</sup>***Relative density***Not determined.***Vapour density***Not applicable.***9.2 Other information****Appearance:****Form:***Crystalline powder***Important information on protection of health and environment, and on safety.****Explosive properties:***Product does not present an explosion hazard.**Not determined.***Solids content:***100.0 %*

(Contd. on page 4)

## Trade name: CA80AL Reagent RN, Component 2

(Contd. of page 3)

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

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

**SECTION 10: Stability and reactivity****10.1 Reactivity** *No further relevant information available.***10.2 Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity****LD/LC50 values relevant for classification:****CAS: 50-81-7 L (+) - ascorbic acid**

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

**11.2 Information on other hazards****Endocrine disrupting properties***Substance is not listed.***SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.***12.5 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)

**12.6 Endocrine disrupting properties**

*The product does not contain substances with endocrine disrupting properties.*

**12.7 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**

**13.1 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**

**14.1 UN number or ID number**

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

**14.2 UN proper shipping name**

**ADR, ADN, IMDG, IATA** *Void*

**14.3 Transport hazard class(es)**

**ADR, ADN, IMDG, IATA**

**Class** *Void*

**14.4 Packing group**

**ADR, IMDG, IATA** *Void*

**14.5 Environmental hazards:**

**Marine pollutant:** *No*

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

**14.7 Maritime transport in bulk according to IMO instruments** *Not applicable.*

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

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

**SECTION 15: Regulatory information**

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

**New Zealand Inventory of Chemicals**

*Substance is listed.*

**HSNO Approval numbers**

*HSR003645*

**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.*

**15.2 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.*

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

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(Contd. of page 5)

**16.3 Recommended restriction of use****Department issuing SDS:** PCC-TWRC**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 européen sur le transport 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**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**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.**

**SECTION 1: Identification of the substance or mixture and of the supplier****1.1 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

**1.2 Relevant identified uses of the substance or mixture and uses advised against***No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***1.3 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 209-117**Fax.: +49 (0)7156 209-222**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 0064 800 764 766**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***The substance is not classified, according to the CLP regulation.***Classification according to Directive 67/548/EEC or Directive 1999/45/EC** *Not applicable.***Information concerning particular hazards for human and environment:** *Not applicable.***2.2 Label elements****Labelling according to EU guidelines:***Observe the general safety regulations when handling chemicals.**The substance is not subject to classification according to EU lists and other sources of literature known to us.***2.3 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/Information on ingredients****3.1 Substances****CAS No. Description**7732-18-5 *water***Identification number(s)****EC number:** 231-791-2

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

(Contd. of page 1)

**SECTION 4: First aid measures****4.1 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.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.***4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***\* SECTION 5: Fire fighting measures****5.1 Extinguishing media****Suitable extinguishing agents:***CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Dilute with plenty of water.***6.3 Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).***6.4 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****7.1 Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 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**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 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.*

(Contd. on page 3)



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

(Contd. of page 2)

**8.2 Exposure controls****Appropriate engineering controls** *No further data; see item 7.***Individual protection measures, such as personal protective equipment****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.***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/face protection** *Not required.***Body protection:** *Protective work clothing***SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

<b>Physical state</b>	<i>Fluid</i>
<b>Colour:</b>	<i>Colourless</i>
<b>Odour:</b>	<i>Odourless</i>
<b>Odour threshold:</b>	<i>Not determined.</i>
<b>Melting point/freezing point:</b>	<i>0 °C</i>
<b>Boiling point or initial boiling point and boiling range</b>	<i>100 °C</i>
<b>Flammability</b>	<i>Not applicable.</i>
<b>Lower and upper explosion limit</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
<b>Flash point:</b>	<i>Not applicable.</i>
<b>Auto-ignition temperature:</b>	<i>Not determined.</i>
<b>Decomposition temperature:</b>	<i>Not determined.</i>
<b>pH</b>	<i>Not determined.</i>
<b>Viscosity:</b>	
<b>Kinematic viscosity</b>	<i>Not determined.</i>
<b>Dynamic at 20 °C:</b>	<i>0.952 mPas</i>
<b>Solubility</b>	
<b>water:</b>	<i>Fully miscible.</i>
<b>Partition coefficient n-octanol/water (log value)</b>	<i>Not determined.</i>
<b>Vapour pressure at 20 °C:</b>	<i>23 hPa</i>
<b>Density and/or relative density</b>	
<b>Density at 20 °C:</b>	<i>1 g/cm<sup>3</sup></i>
<b>Relative density</b>	<i>Not determined.</i>
<b>Vapour density</b>	<i>Not determined.</i>

**9.2 Other information****Appearance:****Form:** *Fluid***Important information on protection of health and environment, and on safety.****Explosive properties:** *Product does not present an explosion hazard.  
Not determined.***Water:** *100.0 %*

(Contd. on page 4)

## Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 3)

<b>Solids content:</b>	0.0 %
<b>Change in condition</b>	
<b>Evaporation rate</b>	Not determined.
<b>Information with regard to physical hazard classes</b>	
<b>Explosives</b>	Void
<b>Flammable gases</b>	Void
<b>Aerosols</b>	Void
<b>Oxidising gases</b>	Void
<b>Gases under pressure</b>	Void
<b>Flammable liquids</b>	Void
<b>Flammable solids</b>	Void
<b>Self-reactive substances and mixtures</b>	Void
<b>Pyrophoric liquids</b>	Void
<b>Pyrophoric solids</b>	Void
<b>Self-heating substances and mixtures</b>	Void
<b>Substances and mixtures, which emit flammable gases in contact with water</b>	Void
<b>Oxidising liquids</b>	Void
<b>Oxidising solids</b>	Void
<b>Organic peroxides</b>	Void
<b>Corrosive to metals</b>	Void
<b>Desensitised explosives</b>	Void

**SECTION 10: Stability and reactivity**

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

**10.2 Chemical stability**

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

No decomposition if used according to specifications.

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

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

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

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

**SECTION 11: Toxicological information****11.2 Information on other hazards****Endocrine disrupting properties**

Substance is not listed.

**SECTION 12: Ecological information****12.1 Toxicity**

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

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

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

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

(Contd. on page 5)

Trade name: CA80AL Reagent RB, Component 1

(Contd. of page 4)

**12.7 Other adverse effects****Additional ecological information:****General notes:** *Not hazardous for water.***SECTION 13: Disposal considerations****13.1 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****14.1 UN number or ID number****ADN, IMDG, IATA** *Void***14.2 UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***14.3 Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***14.4 Packing group****ADR, IMDG, IATA** *Void***14.5 Environmental hazards:****Marine pollutant:** *No***14.6 Special precautions for user** *Not applicable.***14.7 Maritime transport in bulk according to IMO instruments** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****New Zealand Inventory of Chemicals***Substance is listed.***HSNO Approval numbers***Substance is not listed.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***15.2 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.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWRC***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**

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(Contd. of page 5)

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

*ADR: Accord européen sur le transport 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*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*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.**

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**SECTION 1: Identification of the substance or mixture and of the supplier****1.1 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

**1.2 Relevant identified uses of the substance or mixture and uses advised against***No further relevant information available.***Application of the substance / the mixture** *Laboratory chemicals***1.3 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 209-117**Fax.: +49 (0)7156 209-222**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 0064 800 764 766**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***The substance is not classified, according to the CLP regulation.***Classification according to Directive 67/548/EEC or Directive 1999/45/EC** *Not applicable.***Information concerning particular hazards for human and environment:** *Not applicable.***2.2 Label elements****Labelling according to EU guidelines:***Observe the general safety regulations when handling chemicals.**The substance is not subject to classification according to EU lists and other sources of literature known to us.***2.3 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/Information on ingredients****3.1 Substances****CAS No. Description**115-41-3 *pyrocatechol violet***Identification number(s)****EC number:** 204-088-3

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

(Contd. of page 1)

**SECTION 4: First aid measures****4.1 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.***4.2 Most important symptoms and effects, both acute and delayed***No further relevant information available.***4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***\* SECTION 5: Fire fighting measures****5.1 Extinguishing media****Suitable extinguishing agents:***CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***For safety reasons unsuitable extinguishing agents:** *no further information***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.***5.3 Advice for firefighters** *No further relevant information available.***Protective equipment:** *No special measures required.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.***6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:** *Pick up mechanically.***6.4 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****7.1 Precautions for safe handling** *No special measures required.***Information about fire - and explosion protection:** *No special measures required.***7.2 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**7.3 Specific end use(s)** *No further relevant information available.***SECTION 8: Exposure controls/personal protection****8.1 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.*

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

(Contd. of page 2)

**8.2 Exposure controls****Appropriate engineering controls** *No further data; see item 7.***Individual protection measures, such as personal protective equipment****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.***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/face protection** *Not required.***Body protection:** *Protective work clothing***SECTION 9: Physical and chemical properties****9.1 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.***Boiling point or initial boiling point and boiling range***Undetermined.***Flammability***Product is not flammable.***Lower and upper explosion limit****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***Auto-ignition temperature:***Not determined.***Decomposition temperature:***Not determined.***pH***Not applicable.***Viscosity:****Kinematic viscosity***Not applicable.***Dynamic:***Not applicable.***Solubility****water:***Soluble.***Partition coefficient n-octanol/water (log value)** *Not determined.***Vapour pressure:***Not applicable.***Density and/or relative density****Density:***Not determined.***Relative density***Not determined.***Vapour density***Not applicable.***9.2 Other information****Appearance:****Form:***Crystalline powder***Important information on protection of health and environment, and on safety.****Explosive properties:***Product does not present an explosion hazard.  
Not determined.*

(Contd. on page 4)

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

(Contd. of page 3)

**Change in condition**

**Evaporation rate**

*Not applicable.*

**Information with regard to physical hazard classes**

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

**SECTION 10: Stability and reactivity**

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

**10.2 Chemical stability**

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

*No decomposition if used according to specifications.*

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

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

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

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

**SECTION 11: Toxicological information**

**11.2 Information on other hazards**

**Endocrine disrupting properties**

*Substance is not listed.*

**SECTION 12: Ecological information**

**12.1 Toxicity**

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

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

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

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

**12.6 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)

**12.7 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****13.1 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****14.1 UN number or ID number****ADN, IMDG, IATA** *Void***14.2 UN proper shipping name****ADR, ADN, IMDG, IATA** *Void***14.3 Transport hazard class(es)****ADR, ADN, IMDG, IATA****Class** *Void***14.4 Packing group****ADR, IMDG, IATA** *Void***14.5 Environmental hazards:****Marine pollutant:** *No***14.6 Special precautions for user** *Not applicable.***14.7 Maritime transport in bulk according to IMO instruments** *Not applicable.***Transport/Additional information:** *Not dangerous according to the above specifications.***UN "Model Regulation":** *Void***SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****New Zealand Inventory of Chemicals***Substance is listed.***HSNO Approval numbers***Substance is not listed.***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.***15.2 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.***16.3 Recommended restriction of use****Department issuing SDS:** *PCC-TWRC*

(Contd. on page 6)

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

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(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 européen sur le transport 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**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**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.**

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**SECTION 1: Identification of the substance or mixture and of the supplier****1.1 Product identifier****Trade name:** CA80AL Reagent RK**Synonym:** for aluminum**Article number:** 51517139B**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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 209-117

Fax.: +49 (0)7156 209-222

E-Mail: MSDS.PCC@endress.com

**1.4 Emergency telephone number:** 0064 800 764 766**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



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

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Sensitising

R43: May cause sensitisation by skin contact.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

**2.2 Label elements****Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals.

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

**Code letter and hazard designation of product:**

Xi Irritant

**Hazard-determining components of labelling:**

Hexamethylenetetramine

**Risk phrases:**

43 May cause sensitisation by skin contact.

**Safety phrases:**

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

24 Avoid contact with skin.

**Trade name: CA80AL Reagent RK**

(Contd. of page 1)

29 Do not empty into drains.

37 Wear suitable gloves.

60 This material and its container must be disposed of as hazardous waste.

**2.3 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/Information on ingredients****3.2 Mixtures**

Description: Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

CAS: 100-97-0	Hexamethylenetetramine	 Xi R43;  F R11	20-40%
EINECS: 202-905-8		 Flam. Sol. 2, H228;  Skin Sens. 1, H317	

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

**SECTION 4: First aid measures****4.1 Description of 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.

**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**\* SECTION 5: Fire fighting measures****5.1 Extinguishing media****Suitable extinguishing agents:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**For safety reasons unsuitable extinguishing agents:** no further information**5.2 Special hazards arising from the substance or mixture** No further relevant information available.**5.3 Advice for firefighters** No further relevant information available.**Protective equipment:** No special measures required.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.**6.2 Environmental precautions:**

Dilute with plenty of water.

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

**6.3 Methods and material for containment and cleaning up:**

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

(Contd. on page 3)

**Trade name: CA80AL Reagent RK**

(Contd. of page 2)

Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

**6.4 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**

**7.1 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.

**7.2 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

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

**SECTION 8: Exposure controls/personal protection**

**8.1 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.

<b>DNELs</b>		
<b>CAS: 100-97-0 Hexamethylenetetramine</b>		
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 <sup>3</sup> (worker) (systemic effect)
		1.2 mg/m <sup>3</sup> (consumer) (systemic effect)
<b>PNECs</b>		
<b>CAS: 100-97-0 Hexamethylenetetramine</b>		
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.

**8.2 Exposure controls**

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

**Individual protection measures, such as personal protective equipment**

**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.

(Contd. on page 4)

**Trade name: CA80AL Reagent RK**

(Contd. of page 3)

**Hand protection***Protective gloves*

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

**Material of gloves***Nitrile rubber, NBR**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/face protection** *Goggles recommended during refilling*

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

## \* SECTION 9: Physical and chemical properties

**9.1 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.***Boiling point or initial boiling point and boiling range***>100 °C***Flammability***Not applicable.***Lower and upper explosion limit****Lower:***Not determined.***Upper:***Not determined.***Flash point:***Not applicable.***Auto-ignition temperature:***Product is not selfigniting.***Decomposition temperature:***Not determined.***pH at 20 °C***8.5-10.5***Viscosity:****Kinematic viscosity***Not determined.***Dynamic:***Not determined.***Solubility****water:***Fully miscible.***Partition coefficient n-octanol/water (log value)***Not determined.***Vapour pressure at 20 °C:***23 hPa***Density and/or relative density****Density at 20 °C:***1.122 g/cm<sup>3</sup>***Relative density***Not determined.***Vapour density***Not determined.***9.2 Other information****Appearance:****Form:***Fluid*

(Contd. on page 5)

Trade name: CA80AL Reagent RK

(Contd. of page 4)

**Important information on protection of health and environment, and on safety.****Explosive properties:***Product does not present an explosion hazard.  
Not determined.***Solvent content:****Water:**

63.0 %

**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****10.1 Reactivity** *No further relevant information available.***10.2 Chemical stability****Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *No dangerous decomposition products known.***SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Respiratory or skin sensitisation** *May cause an allergic skin reaction.***11.2 Information on other hazards****Endocrine disrupting properties***None of the ingredients is listed.***SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***12.2 Persistence and degradability** *No further relevant information available.***12.3 Bioaccumulative potential** *No further relevant information available.***12.4 Mobility in soil** *No further relevant information available.*

(Contd. on page 6)

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**Trade name: CA80AL Reagent RK**

(Contd. of page 5)

**12.5 Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

**12.6 Endocrine disrupting properties**

*The product does not contain substances with endocrine disrupting properties.*

**12.7 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**

**13.1 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**

**14.1 UN number or ID number**

**ADN, IMDG, IATA**

*Void*

**14.2 UN proper shipping name**

**ADR, ADN, IMDG, IATA**

*Void*

**14.3 Transport hazard class(es)**

**ADR, ADN, IMDG, IATA**

**Class**

*Void*

**14.4 Packing group**

**ADR, IMDG, IATA**

*Void*

**14.5 Environmental hazards:**

*Not applicable.*

**14.6 Special precautions for user**

*Not applicable.*

**14.7 Maritime transport in bulk according to IMO**

**instruments**

*Not applicable.*

**UN "Model Regulation":**

*Void*

**SECTION 15: Regulatory information**

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

**New Zealand Inventory of Chemicals**

*All ingredients are listed.*

**HSNO Approval numbers**

CAS: 100-97-0 | *Hexamethylenetetramine*

*HSR001277*

**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.*

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

(Contd. on page 7)



**Trade name: CA80AL Reagent RK**

(Contd. of page 6)

**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.*

**16.3 Recommended restriction of use****Department issuing SDS:** PCC-TWRC**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 européen sur le transport 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*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*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.**