

18.03.2022

Kit Components

Product code	Description
CAY843-VxxAAH	CA7xMN Reagent Set for manganese

Components:

51508295	Reagent MN1 for manganese
71256695	Reagent MN2, Component 1 for manganese
51509509	Reagent MN2, Component 2 for manganese
51508298	Reagent MN3 for manganese

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Reagent MN1

Synonym: *for manganese*

Article number: 51508295

UFI: 9U20-V0J6-900Q-NQ1A

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product category PC21 *Laboratory chemicals*

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 209-10117

E-Mail: MSDS.PCC@endress.com

1.4 Emergency telephone number: 00356 21 22 40 71

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05

Signal word *Danger*

Hazard-determining components of labelling:

acetic acid

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Trade name: Reagent MN1

(Contd. of page 1)

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: 64-19-7 EINECS: 200-580-7 Registration number: 01-2119475328-30	<i>acetic acid</i> ⚠ Flam. Liq. 3, H226; ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H312 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	20-40%
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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: Firefighting measures**5.1 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

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.

(Contd. on page 3)

Trade name: Reagent MN1

(Contd. of page 2)

*Wear protective equipment. Keep unprotected persons away.**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).**Use neutralising agent.**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:** *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:** 8 B**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:****CAS: 64-19-7 acetic acid**

IOELV (EU)	Short-term value: 50 mg/m ³ , 20 ppm Long-term value: 25 mg/m ³ , 10 ppm
WEL (Great Britain)	Short-term value: 50 mg/m ³ , 20 ppm Long-term value: 25 mg/m ³ , 10 ppm

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.*

(Contd. on page 4)

Trade name: Reagent MN1

(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*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	<i>Fluid</i>
Colour:	<i>Colourless</i>
Odour:	<i>Acrid</i>
Odour threshold:	<i>Not determined.</i>
Melting point/freezing point:	<i>Undetermined.</i>
Boiling point or initial boiling point and boiling range	<i>100 °C</i>
Flammability	<i>Not applicable.</i>
Lower and upper explosion limit	
Lower:	<i>4 Vol %</i>
Upper:	<i>17 Vol %</i>
Flash point:	<i>Not applicable.</i>
Ignition temperature:	<i>485 °C</i>
Decomposition temperature:	<i>Not determined.</i>
pH at 20 °C	<i>2.5-4</i>
Viscosity:	
Kinematic viscosity	<i>Not determined.</i>
Dynamic:	<i>Not determined.</i>
Solubility	
water:	<i>Fully miscible.</i>
Partition coefficient n-octanol/water (log value)	<i>Not determined.</i>
Vapour pressure at 20 °C:	<i>23 hPa</i>
Density and/or relative density	
Density at 20 °C:	<i>1.014 g/cm³</i>
Relative density	<i>Not determined.</i>
Vapour density	<i>Not determined.</i>

(Contd. on page 5)

Trade name: Reagent MN1

(Contd. of page 4)

9.2 Other information**Appearance:****Form:** Fluid**Important information on protection of health and environment, and on safety.****Auto-ignition temperature:**

Product is not selfigniting.

Explosive properties:Product does not present an explosion hazard.
Not determined.**Solvent content:****Organic solvents:** 40.0 %**Water:** 55.0 %**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****Acute toxicity** Based on available data, the classification criteria are not met.**LD/LC50 values relevant for classification:****CAS: 64-19-7 acetic acid**

Oral LD50 3,310 mg/kg (rat)

Dermal LD50 1,060 mg/kg (rbt)

Skin corrosion/irritation Causes severe skin burns and eye damage.**Serious eye damage/irritation** Causes serious eye damage.

(Contd. on page 6)

Trade name: Reagent MN1

(Contd. of page 5)

Respiratory or skin sensitisation 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.**STOT-single exposure** Based on available data, the classification criteria are not met.**STOT-repeated exposure** Based on available data, the classification criteria are not met.**Aspiration hazard** Based on available data, the classification criteria are not met.**11.2 Information on other hazards****Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:****CAS: 64-19-7 acetic acid**

EC50[48h] | 36.9 mg/l (Daphnia Magna)

EC50[72h] | >1,000 mg/l (Algae)

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

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

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

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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.

European waste catalogue

16 05 06* | laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

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**

ADR, IMDG, IATA

UN2790

14.2 UN proper shipping name

ADR

UN2790 ACETIC ACID SOLUTION

IMDG

ACETIC ACID SOLUTION

IATA

Acetic acid solution

(Contd. on page 7)

Trade name: Reagent MN1

(Contd. of page 6)

14.3 Transport hazard class(es)

ADR



Class 8 (C3) Corrosive substances.
Label 8

IMDG, IATA



Class 8 Corrosive substances.
Label 8

14.4 Packing group

ADR, IMDG, IATA III

14.5 Environmental hazards: Not applicable.

14.6 Special precautions for user Warning: Corrosive substances.

Hazard identification number (Kemler code): 80

EMS Number: F-A, S-B

Segregation groups Acids

Stowage Category A

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

Transport/Additional information:

ADR

Limited quantities (LQ) 5L
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

Transport category 3

Tunnel restriction code E

IMDG

Limited quantities (LQ) 5L
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

UN "Model Regulation": UN 2790 ACETIC ACID SOLUTION, 8, III

SECTION 15: Regulatory information

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

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05

Signal word *Danger*

Hazard-determining components of labelling:

acetic acid

(Contd. on page 8)

Trade name: Reagent MN1

(Contd. of page 7)

Hazard statements*H314 Causes severe skin burns and eye damage.***Precautionary statements***P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P310 Immediately call a POISON CENTER/doctor.**P321 Specific treatment (see on this label).**P405 Store locked up.**P501 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.***REGULATION (EC) No 1907/2006 ANNEX XVII** *Conditions of restriction: 3***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***None of the ingredients is listed.***REGULATION (EU) 2019/1148****Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***None of the ingredients is listed.***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***None of the ingredients is listed.***Regulation (EC) No 273/2004 on drug precursors***None of the ingredients is listed.***Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors***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.***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-TWR***Contact:** *MSDS.pcc@endress.com***Date of previous version:** *29.12.2020***Version number of previous version:** *9***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)**ICAO: International Civil Aviation Organisation**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**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)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic*

(Contd. on page 9)

Safety data sheet

Page 9/9

according to 1907/2006/EC, Article 31

Printing date 18.03.2022

Version 10 (replaces version 9)

Revision: 18.03.2022

Trade name: Reagent MN1

(Contd. of page 8)

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

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

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **Reagent MN2, Component 1**

Synonym: *for manganese*

Article number: 71256695

CAS Number:

7732-18-5

EC number:

231-791-2

Registration number

A registration number for this substance is not available because the substance or its use are exempt from registration, the annual tonnage does not require registration or the registration is planned for a later date.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product category *PC21 Laboratory chemicals*

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 209-10117

E-Mail: MSDS.PCC@endress.com

1.4 Emergency telephone number: 00356 21 22 40 71

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.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

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

CAS: 7732-18-5 water

Identification number(s)

EC number: 231-791-2

(Contd. on page 2)

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Trade name: Reagent MN2, 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: Firefighting measures

5.1 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*

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: Reagent MN2, 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**

Physical state	<i>Fluid</i>
Colour:	<i>Colourless</i>
Odour:	<i>Odourless</i>
Odour threshold:	<i>Not determined.</i>
Melting point/freezing point:	<i>0 °C</i>
Boiling point or initial boiling point and boiling range	<i>100 °C</i>
Flammability	<i>Not applicable.</i>
Lower and upper explosion limit	
Lower:	<i>Not determined.</i>
Upper:	<i>Not determined.</i>
Flash point:	<i>Not applicable.</i>
Decomposition temperature:	<i>Not determined.</i>
pH	<i>Neutral</i>
Viscosity:	
Kinematic viscosity	<i>Not determined.</i>
Dynamic at 20 °C:	<i>0.952 mPas</i>
Solubility	
water:	<i>Fully miscible.</i>
Partition coefficient n-octanol/water (log value)	<i>Not determined.</i>
Vapour pressure at 20 °C:	<i>23 hPa</i>
Density and/or relative density	
Density at 20 °C:	<i>1 g/cm³</i>
Relative density	<i>Not determined.</i>
Vapour density	<i>Not determined.</i>

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

(Contd. on page 4)

Trade name: Reagent MN2, Component 1

(Contd. of page 3)

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**

Acute toxicity *Based on available data, the classification criteria are not met.*

Skin corrosion/irritation *Based on available data, the classification criteria are not met.*

Serious eye damage/irritation *Based on available data, the classification criteria are not met.*

Respiratory or skin sensitisation *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.*

STOT-single exposure *Based on available data, the classification criteria are not met.*

STOT-repeated exposure *Based on available data, the classification criteria are not met.*

Aspiration hazard *Based on available data, the classification criteria are not met.*

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.*

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Trade name: Reagent MN2, Component 1

(Contd. of page 4)

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****Additional ecological information:****General notes:** *Not hazardous for water.***SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation***Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.**Smaller quantities can be disposed of with household waste.***European waste catalogue**16 05 09 | *discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08***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**ADR, 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****Labelling according to Regulation (EC) No 1272/2008** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.*

(Contd. on page 6)

Trade name: Reagent MN2, Component 1

(Contd. of page 5)

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II*Substance is not listed.***REGULATION (EU) 2019/1148****Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***Substance is not listed.***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***Substance is not listed.***Regulation (EC) No 273/2004 on drug precursors***Substance is not listed.***Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors***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-TWR***Contact:** *MSDS.pcc@endress.com***Date of previous version:** *29.12.2020***Version number of previous version:** *5***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**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.**

**SECTION 1: Identification of the substance/mixture and of the company/
undertaking****1.1 Product identifier****Trade name:** Reagent MN2, Component 2**Synonym:** *for manganese***Article number:** 51509509**CAS Number:**

7790-21-8

EC number:

232-196-0

Registration number

A registration number for this substance is not available because the substance or its use are exempt from registration, the annual tonnage does not require registration or the registration is planned for a later date.

UFI: H030-V0WY-W00Q-YD6F**1.2 Relevant identified uses of the substance or mixture and uses advised against****Product category** PC21 *Laboratory chemicals***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 209-10117**E-Mail: MSDS.PCC@endress.com***1.4 Emergency telephone number:** 00356 21 22 40 71**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**GHS03 *flame over circle**Ox. Sol. 2 H272 May intensify fire; oxidiser.*

GHS07

*Skin Irrit. 2 H315 Causes skin irritation.**Eye Irrit. 2 H319 Causes serious eye irritation.**STOT SE 3 H335 May cause respiratory irritation.***2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008***The substance is classified and labelled according to the CLP regulation.***Hazard pictograms**

GHS03 GHS07

Trade name: Reagent MN2, Component 2

(Contd. of page 1)

Signal word *Danger***Hazard-determining components of labelling:***Potassium periodate***Hazard statements***H272 May intensify fire; oxidiser.**H315 Causes skin irritation.**H319 Causes serious eye irritation.**H335 May cause respiratory irritation.***Precautionary statements***P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**P220 Keep away from clothing and other combustible materials.**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***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***CAS: 7790-21-8 Potassium periodate***Identification number(s)***EC number: 232-196-0***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. If symptoms persist, consult a doctor.***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: Firefighting measures****5.1 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***5.2 Special hazards arising from the substance or mixture** *No further relevant information available.*

(Contd. on page 3)

Trade name: Reagent MN2, Component 2

(Contd. of page 2)

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:

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

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

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: *Keep container tightly sealed.*

Storage class: 5.1 B

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.*

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 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.

(Contd. on page 4)

Trade name: Reagent MN2, Component 2

(Contd. of page 3)

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.

Nitrile rubber, NBR

Natural rubber, NR

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

Solid

Colour:

White

Odour:

Characteristic

Odour threshold:

Not determined.

Melting point/freezing point:

582 °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.

Decomposition temperature:

Not determined.

pH

4.5-5.5

Viscosity:

Kinematic viscosity

Not applicable.

Dynamic:

Not applicable.

Solubility

water at 25 °C:

5.1 g/l

Partition coefficient n-octanol/water (log value)

Not determined.

Vapour pressure:

Not applicable.

Density and/or relative density

Density at 20 °C:

3.618 g/cm³

Relative density

Not determined.

Bulk density:

1,650 kg/m³

Vapour density

Not applicable.

Particle characteristics

See item 3.

9.2 Other information

Appearance:

Form:

Crystalline powder

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

Auto-ignition temperature:

Not determined.

Explosive properties:

Product does not present an explosion hazard.

Not determined.

Solids content:

100.0 %

(Contd. on page 5)

Trade name: Reagent MN2, Component 2

(Contd. of page 4)

Change in condition**Evaporation rate***Not applicable.***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>May intensify fire; oxidiser.</i>
Organic peroxides	<i>Void</i>
Corrosive to metals	<i>Void</i>
Desensitised explosives	<i>Void</i>

SECTION 10: Stability and reactivity**10.1 Reactivity** *No further relevant information available.***10.2 Chemical stability***The material is under normal environmental conditions and under conditions of storage and handling stable at expected temperature and pressure conditions.***Thermal decomposition / conditions to be avoided:***No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions***Reacts with powdered metals.**Reacts with organic substances.**Reacts with reducing agents.***10.4 Conditions to avoid** *avoid extreme temperatures***10.5 Incompatible materials:***reducing agent**Organic Substances***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** *Based on available data, the classification criteria are not met.***Skin corrosion/irritation** *Causes skin irritation.***Serious eye damage/irritation** *Causes serious eye irritation.***Respiratory or skin sensitisation** *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.***STOT-single exposure** *May cause respiratory irritation.***STOT-repeated exposure** *Based on available data, the classification criteria are not met.***Aspiration hazard** *Based on available data, the classification criteria are not met.*

(Contd. on page 6)

Trade name: Reagent MN2, Component 2

(Contd. of page 5)

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.***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.***European waste catalogue**

16 05 06*	<i>laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals</i>
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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

ADR, IMDG, IATA

UN1479

14.2 UN proper shipping name

ADR

UN1479 OXIDIZING SOLID, N.O.S. (Potassium periodate)

IMDG

IATA

OXIDIZING SOLID, N.O.S. (Potassium periodate)
Oxidizing solid, n.o.s. (containing Potassium periodate)

14.3 Transport hazard class(es)

ADR



Class

5.1 (O2) Oxidising substances.

(Contd. on page 7)

M

Trade name: Reagent MN2, Component 2

(Contd. of page 6)

Label

5.1

IMDG, IATA



Class

5.1 Oxidising substances.

Label

5.1

14.4 Packing group

ADR, IMDG, IATA

II

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Warning: Oxidising substances.

Hazard identification number (Kemler code):

50

EMS Number:

F-A,S-Q

Stowage Category

B

Segregation Code

SG38 Stow "separated from" SGG2-ammonium compounds.
 SG49 Stow "separated from" SGG6-cyanides
 SG60 Stow "separated from" SGG16-peroxides
 SG61 Stow "separated from" SGG15-powdered metals

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ)

1 kg

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

Transport category

2

Tunnel restriction code

E

IMDG

Limited quantities (LQ)

1 kg

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

UN "Model Regulation":

UN 1479 OXIDIZING SOLID, N.O.S. (POTASSIUM PERIODATE), 5.1, II

SECTION 15: Regulatory information

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

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS03 GHS07

Signal word *Danger*

Hazard-determining components of labelling:

Potassium periodate

Hazard statements

H272 May intensify fire; oxidiser.

(Contd. on page 8)

M

Trade name: Reagent MN2, Component 2

(Contd. of page 7)

*H315 Causes skin irritation.**H319 Causes serious eye irritation.**H335 May cause respiratory irritation.***Precautionary statements***P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**P220 Keep away from clothing and other combustible materials.**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *Substance is not listed.***Seveso category P8** *OXIDISING LIQUIDS AND SOLIDS***Qualifying quantity (tonnes) for the application of lower-tier requirements** *50 t***Qualifying quantity (tonnes) for the application of upper-tier requirements** *200 t***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***Substance is not listed.***REGULATION (EU) 2019/1148****Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***Substance is not listed.***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***Substance is not listed.***Regulation (EC) No 273/2004 on drug precursors***Substance is not listed.***Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors***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-TWR***Contact:** *MSDS.pcc@endress.com***Date of previous version:** *29.12.2020***Version number of previous version:** *10***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)**ICAO: International Civil Aviation Organisation**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**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*

(Contd. on page 9)

Safety data sheet

Page 9/9

according to 1907/2006/EC, Article 31

Printing date 18.03.2022

Version 11 (replaces version 10)

Revision: 18.03.2022

Trade name: Reagent MN2, Component 2

(Contd. of page 8)

vPvB: very Persistent and very Bioaccumulative

Ox. Sol. 2: Oxidizing solids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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

M—

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **Reagent MN3**

Synonym: *for manganese*

Article number: 51508298

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product category *PC21 Laboratory chemicals*

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 209-10117

E-Mail: MSDS.PCC@endress.com

1.4 Emergency telephone number: 00356 21 22 40 71

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified, according to the CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 *Void*

Hazard pictograms *Void*

Signal word *Void*

Hazard statements *Void*

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: *aqueous solution*

Dangerous components: *Void*

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: *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.*

Trade name: Reagent MN3

(Contd. of page 1)

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: Firefighting measures****5.1 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***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:***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:***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: Reagent MN3

(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. 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 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	Fluid
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not determined.
Melting point/freezing point:	0 °C
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.
Decomposition temperature:	Not determined.
pH at 20 °C	<2
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 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information**Appearance:**

Form: Fluid

Important information on protection of health and environment, and on safety.**Auto-ignition temperature:**

Product is not selfigniting.

Explosive properties:

Product does not present an explosion hazard.
Not determined.

Solvent content:

Water: 99.7 %

Solids content: 0.0 %

Change in condition

Evaporation rate Not determined.

(Contd. on page 4)

Trade name: Reagent MN3

(Contd. of page 3)

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

Acute toxicity *Based on available data, the classification criteria are not met.*

Skin corrosion/irritation *Based on available data, the classification criteria are not met.*

Serious eye damage/irritation *Based on available data, the classification criteria are not met.*

Respiratory or skin sensitisation *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.*

STOT-single exposure *Based on available data, the classification criteria are not met.*

STOT-repeated exposure *Based on available data, the classification criteria are not met.*

Aspiration hazard *Based on available data, the classification criteria are not met.*

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 5)

Trade name: Reagent MN3

(Contd. of page 4)

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:***Not hazardous for water.**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** *Smaller quantities can be disposed of with household waste.***European waste catalogue**16 05 09 | *discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08***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****ADR, 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****Labelling according to Regulation (EC) No 1272/2008** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Directive 2012/18/EU****Named dangerous substances - ANNEX I** *None of the ingredients is listed.***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***None of the ingredients is listed.*

(Contd. on page 6)

Trade name: Reagent MN3

(Contd. of page 5)

REGULATION (EU) 2019/1148**Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***None of the ingredients is listed.***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***None of the ingredients is listed.***Regulation (EC) No 273/2004 on drug precursors**

CAS: 7647-01-0 | hydrochloric acid

3

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

CAS: 7647-01-0 | hydrochloric acid

3

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-TWR**Contact:** MSDS.pcc@endress.com**Date of previous version:** 29.12.2020**Version number of previous version:** 4**Abbreviations and acronyms:***RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**ICAO: International Civil Aviation Organisation**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**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**** Data compared to the previous version altered.**