

**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier:** MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2**Other means of identification:****UFI:** U970-Y0AG-Q00Y-VQR3**1.2 Relevant identified uses of the substance or mixture and uses advised against:**

Relevant uses: Used in Spectrophotometry. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3

**1.3 Details of the supplier of the safety data sheet:**

3S Analyzers Srl  
 Via Molino Nuovo 12  
 16036 Avegno - Ge - Italy  
 Phone: +390185799024  
 SDS@3s-analyzers.eu  
 www.3s-analyzers.eu

**1.4 Emergency telephone number:****SECTION 2: HAZARDS IDENTIFICATION \*\*****2.1 Classification of the substance or mixture:****CLP Regulation (EC) No 1272/2008:**

Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.

Acute Tox. 4: Acute toxicity, Category 4, H302+H312+H332

Eye Dam. 1: Serious eye damage, Category 1, H318

Flam. Liq. 3: Flammable liquids, Category 3, H226

Skin Corr. 1: Skin corrosion, Category 1, H314

STOT SE 1: Specific target organ toxicity — single exposure, Hazard Category 1, H370

STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335

**2.2 Label elements:****CLP Regulation (EC) No 1272/2008:****Danger****Hazard statements:**

Acute Tox. 4: H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled.

Flam. Liq. 3: H226 - Flammable liquid and vapour.

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

STOT SE 1: H370 - Causes damage to organs.

STOT SE 3: H335 - May cause respiratory irritation.

**Precautionary statements:**

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P370+P378: In case of fire: Use Foam extinguisher (AB), Dry Chemical Powder (ABC) Fire Extinguisher, Carbon dioxide extinguisher (BC) to extinguish.

P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

**Substances that contribute to the classification**

methanol; ammonia; Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-; Hydrochloric acid

**Acute Toxicity Estimate (ATE mix):**

\*\* Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

# Safety data sheet

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## MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

### SECTION 2: HAZARDS IDENTIFICATION \*\* (continued)

9 % (oral), 13,99 % (dermal), 13,99 % (inhalation) of the mixture consists of ingredient(s) of unknown toxicity

**UFI:** U970-Y0AG-Q00Y-VQR3

#### 2.3 Other hazards:

Product does not meet PBT/vPvB criteria

The product contains substances with endocrine-disrupting properties: Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-

\*\* Changes with regards to the previous version

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substance:





Non-applicable

#### 3.2 Mixture:

**Chemical description:** Mixture of substances

#### Components:

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

Identification	Chemical name/Classification		Concentration
CAS: 67-56-1 EC: 200-659-6 Index: 603-001-00-X REACH: 01-2119433307-44-XXXX	<b>methanol<sup>(1)</sup></b>	ATP CLP00	10 - <25 %
	Regulation 1272/2008	Acute Tox. 3: H301+H311+H331; Flam. Liq. 2: H225; STOT SE 1: H370 - Danger 	
CAS: 1336-21-6 EC: 215-647-6 Index: 007-001-01-2 REACH: 01-2119982985-14-XXXX	<b>ammonia<sup>(1)</sup></b>	ATP CLP00	2,5 - <10 %
	Regulation 1272/2008	Aquatic Acute 1: H400; Skin Corr. 1B: H314 - Danger 	
CAS: 9002-93-1 EC: 618-344-0 Index: Non-applicable REACH: Non-applicable	<b>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-<sup>(1)</sup></b>	Self-classified	2,5 - <10 %
	Regulation 1272/2008	Acute Tox. 4: H302; Eye Irrit. 2: H319; Skin Irrit. 2: H315 - Warning 	
CAS: Non-applicable EC: 231-595-7 Index: 017-002-01-X REACH: 01-2119484862-27-XXXX	<b>Hydrochloric acid<sup>(1)</sup></b>	ATP CLP00	2,5 - <10 %
	Regulation 1272/2008	Skin Corr. 1B: H314; STOT SE 3: H335 - Danger 	

<sup>(1)</sup> Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2020/878

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

#### Other information:

Identification	Specific concentration limit
methanol CAS: 67-56-1 EC: 200-659-6	% (w/w) >=10: STOT SE 1 - H370 3<= % (w/w) <10: STOT SE 2 - H371
ammonia CAS: 1336-21-6 EC: 215-647-6	% (w/w) >=5: STOT SE 3 - H335
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	% (w/w) >=25: Skin Corr. 1B - H314 10<= % (w/w) <25: Skin Irrit. 2 - H315 % (w/w) >=25: Eye Dam. 1 - H318 10<= % (w/w) <25: Eye Irrit. 2 - H319 % (w/w) >=10: STOT SE 3 - H335

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

Identification	Acute toxicity		Genus
methanol CAS: 67-56-1 EC: 200-659-6	LD50 oral	100 mg/kg	
	LD50 dermal	300 mg/kg	
	LC50 inhalation	Not relevant	

- CONTINUED ON NEXT PAGE -

## Safety data sheet

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### MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

#### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Identification	Acute toxicity		Genus
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- CAS: 9002-93-1 EC: 618-344-0	LD50 oral	500 mg/kg	Rat
	LD50 dermal	Not relevant	
	LC50 inhalation	Not relevant	

#### SECTION 4: FIRST AID MEASURES

##### 4.1 Description of first aid measures:

Request medical assistance immediately, showing the SDS of this product.

##### By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

##### By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

##### By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

##### By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Induce vomiting (ONLY IF PERSON IS CONSCIOUS!) and then ingest large quantities of liquid to dilute the toxin. Keep the person affected at rest.

##### 4.2 Most important symptoms and effects, both acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

##### 4.3 Indication of any immediate medical attention and special treatment needed:

Not relevant

#### SECTION 5: FIREFIGHTING MEASURES

##### 5.1 Extinguishing media:

##### Suitable extinguishing media:

Foam extinguisher (AB), Dry Chemical Powder (ABC) Fire Extinguisher, Carbon dioxide extinguisher (BC)

##### Unsuitable extinguishing media:

Water jet

##### 5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

##### 5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

##### Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

- CONTINUED ON NEXT PAGE -

**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)****6.1 Personal precautions, protective equipment and emergency procedures:****For non-emergency personnel:**

Isolate leaks provided that there is no additional risk for the people performing this task. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inert medium. Remove any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

**For emergency responders:**

Wear protective equipment. Keep unprotected persons away. See section 8.

**6.2 Environmental precautions:**

It is recommended to avoid environmental spillage of both the product and its container.

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

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

**6.4 Reference to other sections:**

See sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE****7.1 Precautions for safe handling:****A.- General precautions for safe use**

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

**B.- Technical recommendations for the prevention of fires and explosions**

Transfer in well ventilated areas, preferably through localized extraction. Fully control sources of ignition (mobile phones, sparks,...) and ventilate during cleaning operations. Avoid the existence of dangerous atmospheres inside containers, applying inertization systems where possible. Transfer at a slow speed to avoid the creation of electrostatic charges. Against the possibility of electrostatic charges: ensure a perfect equipotential connection, always use groundings, do not wear work clothes made of acrylic fibres, preferably wearing cotton clothing and conductive footwear. Comply with the essential security requirements for equipment and systems defined in Directive 2014/34/EC (ATEX 100) and with the minimum requirements for protecting the security and health of workers under the selection criteria of Directive 1999/92/EC (ATEX 137). Consult section 10 for conditions and materials that should be avoided.

**C.- Technical recommendations on general occupational hygiene**

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

**D.- Technical recommendations to prevent environmental risks**

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

**7.2 Conditions for safe storage, including any incompatibilities:****A.- Specific storage requirements**

Minimum Temp.: 5 °C

Maximum Temp.: 20 °C

**B.- General conditions for storage**

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters:**

- CONTINUED ON NEXT PAGE -

**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

Substances whose occupational exposure limits have to be monitored in the workplace (European OEL, not country-specific legislation):

Directive (EU) 2000/39, Directive 2004/37/EC, Directive (EU) 2006/15, Directive (EU) 2009/161, Directive (EU) 2017/164, Directive (EU) 2019/1831:

Identification	Occupational exposure limits		
methanol <sup>(1)</sup>	IOELV (8h)	200 ppm	260 mg/m <sup>3</sup>
CAS: 67-56-1 EC: 200-659-6	IOELV (STEL)		

<sup>(1)</sup> Skin

**DNEL (Workers):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
methanol CAS: 67-56-1 EC: 200-659-6	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	20 mg/kg	Not relevant	20 mg/kg	Not relevant
	Inhalation	130 mg/m <sup>3</sup>	130 mg/m <sup>3</sup>	130 mg/m <sup>3</sup>	130 mg/m <sup>3</sup>
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	15 mg/m <sup>3</sup>	Not relevant	8 mg/m <sup>3</sup>

**DNEL (General population):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
methanol CAS: 67-56-1 EC: 200-659-6	Oral	4 mg/kg	Not relevant	4 mg/kg	Not relevant
	Dermal	4 mg/kg	Not relevant	4 mg/kg	Not relevant
	Inhalation	26 mg/m <sup>3</sup>	26 mg/m <sup>3</sup>	26 mg/m <sup>3</sup>	26 mg/m <sup>3</sup>
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	15 mg/m <sup>3</sup>	Not relevant	8 mg/m <sup>3</sup>

**PNEC:**

Identification					
methanol CAS: 67-56-1 EC: 200-659-6	STP	100 mg/L	Fresh water	20,8 mg/L	
	Soil	100 mg/kg	Marine water	2,08 mg/L	
	Intermittent	1540 mg/L	Sediment (Fresh water)	77 mg/kg	
	Oral	Not relevant	Sediment (Marine water)	7,7 mg/kg	



**8.2 Exposure controls:**

A.- Individual protection measures, such as personal protective equipment

In accordance with the order of importance to control professional exposure (Directive 98/24/EC) it is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding the occupational exposure limits. In case of using personal protective equipment it should have CE marking in accordance with Directive 2016/425/EC. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours		EN 405:2002+A1:2010	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.



C.- Specific protection for the hands

## Safety data sheet

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### MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)





Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Butyl, Breakthrough time: > 480 min, Thickness: 0.5 mm)	 CAT III	EN ISO 21420:2020	Replace the gloves at any sign of deterioration.

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.



##### D.- Eye and face protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory face protection	Face shield	 CAT II	EN 166:2002 UNE-EN ISO 18526-1 al 4:2020 UNE-EN ISO 18526-1 al 4:2020 EN ISO 4007:2018	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

##### E.- Body protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks, with antistatic and fireproof properties	 CAT III	EN 1149-1,2,3 EN 13034:2005+A1:2009 EN ISO 13982-1:2005/A1:2011 EN ISO 6529:2013 EN ISO 6530:2005 EN ISO 13688:2013 EN 464:1995	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk, with antistatic and heat resistant properties	 CAT III	EN ISO 13287:2020 EN ISO 20345:2022 EN 13832-1:2019	Replace boots at any sign of deterioration.

##### F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

#### Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

#### Volatile organic compounds:

With regard to Directive 2010/75/EU, this product has the following characteristics:

V.O.C. (Supply):	19,96 % weight
V.O.C. density at 20 °C:	Not relevant
Average carbon number:	1
Average molecular weight:	32 g/mol

#### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

##### 9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

##### Appearance:

Physical state at 20 °C:	Liquid
Appearance:	Crystalline
Colour:	 Amaranth

\*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -



**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**

Odour:	Ammoniacal
Odour threshold:	Not relevant *
<b>Volatility:</b>	
Boiling point at atmospheric pressure:	89 °C
Vapour pressure at 20 °C:	3868 Pa
Vapour pressure at 50 °C:	18588,84 Pa (18,59 kPa)
Evaporation rate at 20 °C:	Not relevant *
<b>Product description:</b>	
Density at 20 °C:	Not relevant *
Relative density at 20 °C:	Not relevant *
Dynamic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 40 °C:	Not relevant *
Concentration:	Not relevant *
pH:	<1
Vapour density at 20 °C:	Not relevant *
Partition coefficient n-octanol/water 20 °C:	Not relevant *
Solubility in water at 20 °C:	Not relevant *
Solubility properties:	Not relevant *
Decomposition temperature:	Not relevant *
Melting point/freezing point:	Not relevant *
<b>Flammability:</b>	
Flash Point:	33 °C
Flammability (solid, gas):	Not relevant *
Autoignition temperature:	464 °C
Lower flammability limit:	Not available
Upper flammability limit:	Not available
<b>Particle characteristics:</b>	
Median equivalent diameter:	Non-applicable

**9.2 Other information:****Information with regard to physical hazard classes:**

Explosive properties:	Not relevant *
Oxidising properties:	Not relevant *
Corrosive to metals:	Not relevant *
Heat of combustion:	Not relevant *
Aerosols-total percentage (by mass) of flammable components:	Not relevant *

**Other safety characteristics:**

Surface tension at 20 °C:	Not relevant *
Refraction index:	Not relevant *

\*Not relevant due to the nature of the product, not providing information property of its hazards.

**SECTION 10: STABILITY AND REACTIVITY****10.1 Reactivity:**

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

- CONTINUED ON NEXT PAGE -

**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 10: STABILITY AND REACTIVITY (continued)****10.2 Chemical stability:**

Chemically stable under the indicated conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Risk of combustion	Avoid direct impact	Not applicable

**10.5 Incompatible materials:**

Acids	Water	Oxidising materials	Combustible materials	Others
Not applicable	Not applicable	Avoid direct impact	Not applicable	Avoid alkalis or strong bases

**10.6 Hazardous decomposition products:**

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**

The experimental information related to the toxicological properties of the product itself is not available

**Dangerous health implications:**

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

**A- Ingestion (acute effect):**

- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

**B- Inhalation (acute effect):**

- Acute toxicity : Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract

**C- Contact with the skin and the eyes (acute effect):**

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.

**D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):**

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.  
IARC: Not relevant
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

**E- Sensitizing effects:**

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

**F- Specific target organ toxicity (STOT) - single exposure:**

Its ingestion, inhalation or absorption through the skin results in the risk of serious irreversible effects caused by a single exposure, excluding effects which are carcinogenic, mutagenic or toxic for reproduction.

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**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

**Other information:**

Not relevant

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
methanol CAS: 67-56-1 EC: 200-659-6	LD50 oral	100 mg/kg (ATEi)	
	LD50 dermal	300 mg/kg (ATEi)	
	LC50 inhalation	3 mg/L (4 h)	Rat
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- CAS: 9002-93-1 EC: 618-344-0	LD50 oral	500 mg/kg (ATEi)	Rat
	LD50 dermal		
	LC50 inhalation		

**Acute Toxicity Estimate (ATE mix):**

ATE mix		Ingredient(s) of unknown toxicity
Oral	477,14 mg/kg (Calculation method)	9 %
Dermal	1292,74 mg/kg (Calculation method)	13,99 %
Inhalation	12,93 mg/L (4 h) (Calculation method)	13,99 %

**11.2 Information on other hazards:****Endocrine disrupting properties**

Endocrine-disrupting properties: The product does not meet the criteria.

**Other information**

Not relevant

**SECTION 12: ECOLOGICAL INFORMATION**

The experimental information related to the eco-toxicological properties of the product itself is not available

Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.

**12.1 Toxicity:****Acute toxicity:**

Identification	Concentration		Species	Genus
methanol CAS: 67-56-1 EC: 200-659-6	LC50	15400 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	12000 mg/L (96 h)	Nitrocras spinipes	Crustacean
	EC50	530 mg/L (168 h)	Microcystis aeruginosa	Algae
ammonia CAS: 1336-21-6 EC: 215-647-6	LC50	0,89 mg/L (96 h)	Oncorhynchus mykiss	Fish
	EC50	101 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Not relevant		

**Chronic toxicity:**

Identification	Concentration		Species	Genus
methanol CAS: 67-56-1 EC: 200-659-6	NOEC	15800 mg/L	Oryzias latipes	Fish
	NOEC	122 mg/L	Daphnia magna	Crustacean

**12.2 Persistence and degradability:****Substance-specific information:**

- CONTINUED ON NEXT PAGE -

## Safety data sheet

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### MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

#### SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Degradability		Biodegradability	
methanol	BOD5	Not relevant	Concentration	100 mg/L
CAS: 67-56-1	COD	1,42 g O2/g	Period	14 days
EC: 200-659-6	BOD5/COD	Not relevant	% Biodegradable	92 %

#### 12.3 Bioaccumulative potential:

##### Substance-specific information:

Identification	Bioaccumulation potential	
methanol	BCF	3
CAS: 67-56-1	Pow Log	-0.77
EC: 200-659-6	Potential	Low
ammonia	BCF	
CAS: 1336-21-6	Pow Log	-0.64
EC: 215-647-6	Potential	

#### 12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
methanol	Koc	Not relevant	Henry	Not relevant
CAS: 67-56-1	Conclusion	Not relevant	Dry soil	Not relevant
EC: 200-659-6	Surface tension	2,355E-2 N/m (25 °C)	Moist soil	Not relevant

#### 12.5 Results of PBT and vPvB assessment:

Product does not meet PBT/vPvB criteria

#### 12.6 Endocrine disrupting properties:

Contains Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-. A substance shall be considered as having endocrine-disrupting properties that may cause adverse effects on non-target organisms if: (a) it shows an adverse effect in non-target organisms, which is a change in the morphology, physiology, growth, development, reproduction or life span of an organism, system or (sub)population that results in an impairment of functional capacity, an impairment of the capacity to compensate for additional stress or an increase in susceptibility to other influences (b) it has an endocrine mode of action, i.e. it alters the function(s) of the endocrine system (c) the adverse effect is a consequence of the endocrine mode of action.

#### 12.7 Other adverse effects:

Not described

#### SECTION 13: DISPOSAL CONSIDERATIONS

##### 13.1 Waste treatment methods:

Code	Description	Waste class (Regulation (EU) No 1357/2014)
16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals	Hazardous

##### Type of waste (Regulation (EU) No 1357/2014):

HP8 Corrosive, HP3 Flammable, HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity, HP6 Acute Toxicity

##### Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue. Waste should not be disposed of to drains. See paragraph 6.2.

##### Regulations related to waste management:

In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

#### SECTION 14: TRANSPORT INFORMATION

##### Transport of dangerous goods by land:

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**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 14: TRANSPORT INFORMATION (continued)**

With regard to ADR 2023 and RID 2023:



- 14.1 UN number or ID number:** UN2920  
**14.2 UN proper shipping name:** CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ammonia; methanol)  
**14.3 Transport hazard class(es):** 8  
**Labels:** 8, 3  
**14.4 Packing group:** II  
**14.5 Environmental hazards:** No  
**14.6 Special precautions for user**  
Special regulations: 274  
Tunnel restriction code: D/E  
Physico-Chemical properties: see section 9  
Limited quantities: 1 L  
**14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**Transport of dangerous goods by sea:**

With regard to IMDG 41-22:



- 14.1 UN number or ID number:** UN2920  
**14.2 UN proper shipping name:** CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ammonia; methanol)  
**14.3 Transport hazard class(es):** 8  
**Labels:** 8, 3  
**14.4 Packing group:** II  
**14.5 Marine pollutant:** No  
**14.6 Special precautions for user**  
Special regulations: 274  
EmS Codes: F-E, S-C  
Physico-Chemical properties: see section 9  
Limited quantities: 1 L  
Segregation group: SGG1  
**14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**Transport of dangerous goods by air:**

With regard to IATA/ICAO 2024:



- 14.1 UN number or ID number:** UN2920  
**14.2 UN proper shipping name:** CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ammonia; methanol)  
**14.3 Transport hazard class(es):** 8  
**Labels:** 8, 3  
**14.4 Packing group:** II  
**14.5 Environmental hazards:** No  
**14.6 Special precautions for user**  
Physico-Chemical properties: see section 9  
**14.7 Maritime transport in bulk according to IMO instruments:** Not relevant

**SECTION 15: REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**

- Article 95, REGULATION (EU) No 528/2012: *Hydrochloric acid (Non-applicable) - PT: (2)*
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): *Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- (9002-93-1)*
- Regulation (EU) No 2024/590, about substances that deplete the ozone layer: Not relevant
- REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Not relevant
- Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Not relevant

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**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 15: REGULATORY INFORMATION (continued)****Seveso III:**

Section	Description	Lower-tier requirements	Upper-tier requirements
H3	STOT SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	50	200
P5c	FLAMMABLE LIQUIDS	5000	50000

**Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc ....):**

Shall not be used in:

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects.

**Specific provisions in terms of protecting people or the environment:**

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

**Other legislation:**

The product could be affected by sectorial legislation

**15.2 Chemical safety assessment:**

The supplier has not carried out evaluation of chemical safety.

**SECTION 16: OTHER INFORMATION \*\*****Legislation related to safety data sheets:**

The SDS shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

**Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:**

CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16):

- Hazard statements

**Texts of the legislative phrases mentioned in section 2:**

H314: Causes severe skin burns and eye damage.  
H318: Causes serious eye damage.  
H335: May cause respiratory irritation.  
H370: Causes damage to organs.  
H302+H312+H332: Harmful if swallowed, in contact with skin or if inhaled.  
H226: Flammable liquid and vapour.

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**CLP Regulation (EC) No 1272/2008:**

Acute Tox. 3: H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.  
Acute Tox. 4: H302 - Harmful if swallowed.  
Aquatic Acute 1: H400 - Very toxic to aquatic life.  
Eye Irrit. 2: H319 - Causes serious eye irritation.  
Flam. Liq. 2: H225 - Highly flammable liquid and vapour.  
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.  
Skin Irrit. 2: H315 - Causes skin irritation.  
STOT SE 1: H370 - Causes damage to organs.  
STOT SE 3: H335 - May cause respiratory irritation.

**Classification procedure:**

Skin Corr. 1: Calculation method  
Eye Dam. 1: Calculation method  
STOT SE 3: Calculation method  
STOT SE 1: Calculation method  
Acute Tox. 4: Calculation method  
Flam. Liq. 3: Calculation method (2.6.4.3)

**Advice related to training:**

*\*\* Changes with regards to the previous version*

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**MN-PAN-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2****SECTION 16: OTHER INFORMATION \*\* (continued)**

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

<http://echa.europa.eu>

<http://eur-lex.europa.eu>

**Abbreviations and acronyms:**

ADR: European agreement concerning the international carriage of dangerous goods by road

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

LC50: Lethal Concentration 50

EC50: Effective concentration 50

LogPOW: Octanolwater partition coefficient

Koc: Partition coefficient of organic carbon

UFI: unique formula identifier

IARC: International Agency for Research on Cancer

*\*\* Changes with regards to the previous version*

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -