

MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

1.1 Product identifier: MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

Other means of identification:

Not relevant

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.

Carc. 1B: Carcinogenicity, Category 1B, H350

Muta. 2: Germ cell mutagenicity, Category 2, H341

Skin Sens. 1: Sensitisation, skin, Category 1, H317

2.2 Label elements:

CLP Regulation (EC) No 1272/2008:

Danger



Hazard statements:

Carc. 1B: H350 - May cause cancer.

Muta. 2: H341 - Suspected of causing genetic defects.

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

Precautionary statements:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P261: Avoid breathing vapours

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

P302+P352: IF ON SKIN: Wash with plenty of water.

P308+P313: IF exposed or concerned: Get medical advice/attention.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

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

Substances that contribute to the classification

Hydroxylammonium chloride; Formaldehyde

Additional Labelling:

Restricted to professional users

Acute Toxicity Estimate (ATE mix):

0 % (oral), 0 % (dermal), 2 % (inhalation) of the mixture consists of ingredient(s) of unknown toxicity

2.3 Other hazards:

Product does not meet PBT/vPvB criteria

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

- CONTINUED ON NEXT PAGE -

Safety data sheet

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MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

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: 5470-11-1 EC: 226-798-2 Index: 612-123-00-2 REACH: 01-2119980974-19-XXXX	Hydroxylammonium chloride⁽¹⁾ ATP ATP01 Regulation 1272/2008 Acute Tox. 4: H302+H312; Aquatic Acute 1: H400; Carc. 2: H351; Eye Irrit. 2: H319; Met. Corr. 1: H290; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373 - Warning	1 - <2,5 %
CAS: 50-00-0 EC: 200-001-8 Index: 605-001-00-5 REACH: 01-2119488953-20-XXXX	Formaldehyde⁽¹⁾ ATP ATP06 Regulation 1272/2008 Acute Tox. 3: H301+H311+H331; Carc. 1B: H350; Muta. 2: H341; Skin Corr. 1B: H314; Skin Sens. 1: H317 - Danger	1 - <2,5 %

⁽¹⁾ 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
Formaldehyde CAS: 50-00-0 EC: 200-001-8	% (w/w) >=25: Skin Corr. 1B - H314 5<= % (w/w) <25: Skin Irrit. 2 - H315 % (w/w) >=25: Eye Dam. 1 - H318 5<= % (w/w) <25: Eye Irrit. 2 - H319 % (w/w) >=0,2: Skin Sens. 1 - H317 % (w/w) >=5: 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
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	LD50 oral 408 mg/kg (ATEi) LD50 dermal 1100 mg/kg (ATEi) LC50 inhalation Not relevant	Mouse
Formaldehyde CAS: 50-00-0 EC: 200-001-8	LD50 oral 100 mg/kg (ATEi) LD50 dermal 300 mg/kg (ATEi) LC50 inhalation 3 mg/L (ATEi)	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation. However, in case of intoxication symptoms it is recommended to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

May cause an allergic skin reaction. In case of contact it is recommended to clean the affected area thoroughly with water and neutral soap. In case of changes on the skin (stinging, redness, rashes, blisters,...), seek medical advice with this Safety Data Sheet

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:

- CONTINUED ON NEXT PAGE -

MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2**SECTION 4: FIRST AID MEASURES (continued)**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

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:**

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

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**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. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

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

- CONTINUED ON NEXT PAGE -

Safety data sheet

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MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

SECTION 7: HANDLING AND STORAGE (continued)

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

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

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on 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.- Technical measures for storage

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:

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		
Formaldehyde ⁽¹⁾	IOELV (8h)	0,3 ppm	0,37 mg/m ³
CAS: 50-00-0 EC: 200-001-8	IOELV (STEL)	0,6 ppm	0,74 mg/m ³

⁽¹⁾ Sensitising potential

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	0,02 mg/m ³	Not relevant
Formaldehyde CAS: 50-00-0 EC: 200-001-8	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	240 mg/kg	Not relevant
	Inhalation	Not relevant	0,75 mg/m ³	9 mg/m ³	0,375 mg/m ³

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	Oral	Not relevant	Not relevant	0,001 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	0,004 mg/m ³	Not relevant
Formaldehyde CAS: 50-00-0 EC: 200-001-8	Oral	Not relevant	Not relevant	4,1 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	102 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	3,2 mg/m ³	0,1 mg/m ³

PNEC:

- CONTINUED ON NEXT PAGE -

Safety data sheet

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MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)



Identification				
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	STP	0,17 mg/L	Fresh water	0,00021 mg/L
	Soil	0,0001 mg/kg	Marine water	0,000021 mg/L
	Intermittent	0,0021 mg/L	Sediment (Fresh water)	Not relevant
	Oral	Not relevant	Sediment (Marine water)	Not relevant
Formaldehyde CAS: 50-00-0 EC: 200-001-8	STP	0,19 mg/L	Fresh water	0,44 mg/L
	Soil	0,2 mg/kg	Marine water	0,44 mg/L
	Intermittent	4,44 mg/L	Sediment (Fresh water)	2,3 mg/kg
	Oral	Not relevant	Sediment (Marine water)	2,3 mg/kg

8.2 Exposure controls:



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

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<CE marking>> in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more 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	 CAT III	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





Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Nitrile, Breakthrough time: > 480 min, Thickness: 0.11 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 EN 167:2002 EN 168:2002 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	 CAT III	EN 13034:2005+A1:2009 EN 168:2002 EN ISO 13982-1:2004/A1:2010 EN ISO 6529:2013 EN ISO 6530:2005 EN 464:1994	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	 CAT III	EN ISO 20345:2011 EN 13832-1:2019	Replace boots at any sign of deterioration.

F.- Additional emergency measures

- CONTINUED ON NEXT PAGE -

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

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):	1 % weight
V.O.C. density at 20 °C:	10,36 kg/m ³ (10,36 g/L)
Average carbon number:	1
Average molecular weight:	30 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:	Colorless
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not relevant *

Volatility:

Boiling point at atmospheric pressure:	101 °C
Vapour pressure at 20 °C:	5139 Pa
Vapour pressure at 50 °C:	19145,13 Pa (19,15 kPa)
Evaporation rate at 20 °C:	Not relevant *

Product description:

Density at 20 °C:	1035,9 kg/m ³
Relative density at 20 °C:	1,036
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:	Not relevant *
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 *

Flammability:

Flash Point:	Non Flammable (>60 °C)
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*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

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

Flammability (solid, gas):	Not relevant *
Autoignition temperature:	Not relevant *
Lower flammability limit:	Not relevant *
Upper flammability limit:	Not relevant *
Particle characteristics:	
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.

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	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	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 (CO₂), 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):

- CONTINUED ON NEXT PAGE -

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

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: 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.
- B- Inhalation (acute effect):
 - Acute toxicity : Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
 - Corrosivity/Irritability: 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.
- C- Contact with the skin and the eyes (acute effect):
 - Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for skin contact. For more information see section 3.
 - Contact with the eyes: 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.
- D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
 - Carcinogenicity: Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2.
 - IARC: Formaldehyde (1)
 - Mutagenicity: Exposure to this product can cause genetic modifications. For more specific information on the possible health effects see section 2.
 - 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: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.
- F- Specific target organ toxicity (STOT) - single 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.
- 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. However, it does 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
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	LD50 oral	408 mg/kg (ATEi)	Mouse
	LD50 dermal	1100 mg/kg (ATEi)	
	LC50 inhalation		
Formaldehyde CAS: 50-00-0 EC: 200-001-8	LD50 oral	100 mg/kg (ATEi)	
	LD50 dermal	300 mg/kg (ATEi)	
	LC50 inhalation	3 mg/L (ATEi)	

Acute Toxicity Estimate (ATE mix):

ATE mix		Ingredient(s) of unknown toxicity
Oral	6710,53 mg/kg (Calculation method)	0 %
Dermal	19411,76 mg/kg (Calculation method)	0 %
Inhalation	300 mg/L (4 h) (Calculation method)	2 %

11.2 Information on other hazards:

- CONTINUED ON NEXT PAGE -

Safety data sheet

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MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

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
Hydroxylammonium chloride CAS: 5470-11-1 EC: 226-798-2	LC50 >0.1 - 1 mg/L (96 h)		Fish
	EC50 >0.1 - 1 mg/L (48 h)		Crustacean
	EC50 >0.1 - 1 mg/L (72 h)		Algae
Formaldehyde CAS: 50-00-0 EC: 200-001-8	LC50 100 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50 42 mg/L (24 h)	Daphnia magna	Crustacean
	EC50 Not relevant		

Chronic toxicity:

Identification	Concentration	Species	Genus
Formaldehyde CAS: 50-00-0 EC: 200-001-8	NOEC Not relevant		
	NOEC 6,4 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability	Biodegradability
Formaldehyde CAS: 50-00-0 EC: 200-001-8	BOD5 Not relevant	Concentration 100 mg/L
	COD Not relevant	14 days
	BOD5/COD Not relevant	% Biodegradable 92 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential
Formaldehyde CAS: 50-00-0 EC: 200-001-8	BCF 3
	Pow Log 0.35
	Potential Low

12.4 Mobility in soil:

Identification	Absorption/desorption	Volatility
Formaldehyde CAS: 50-00-0 EC: 200-001-8	Koc Not relevant	Henry Not relevant
	Conclusion Not relevant	Dry soil Not relevant
	Surface tension 1,416E-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:

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

12.7 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

- CONTINUED ON NEXT PAGE -

MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2**SECTION 13: DISPOSAL CONSIDERATIONS (continued)****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):

HP7 Carcinogenic, HP11 Mutagenic

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:**

With regard to ADR 2023 and RID 2023:

- 14.1 UN number or ID number:** Not relevant
14.2 UN proper shipping name: Not relevant
14.3 Transport hazard class(es): Not relevant
Labels: Not relevant
14.4 Packing group: Not relevant
14.5 Environmental hazards: No
14.6 Special precautions for user
Special regulations: Not relevant
Tunnel restriction code: Not relevant
Physico-Chemical properties: see section 9
Limited quantities: Not relevant
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:** Not relevant
14.2 UN proper shipping name: Not relevant
14.3 Transport hazard class(es): Not relevant
Labels: Not relevant
14.4 Packing group: Not relevant
14.5 Marine pollutant: No
14.6 Special precautions for user
Special regulations: Not relevant
EmS Codes:
Physico-Chemical properties: see section 9
Limited quantities: Not relevant
Segregation group: Not relevant
14.7 Maritime transport in bulk according to IMO instruments: Not relevant

Transport of dangerous goods by air:

With regard to IATA/ICAO 2024:

- CONTINUED ON NEXT PAGE -

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

14.1 UN number or ID number:	Not relevant
14.2 UN proper shipping name:	Not relevant
14.3 Transport hazard class(es):	Not relevant
Labels:	Not relevant
14.4 Packing group:	Not relevant
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: *Formaldehyde (50-00-0) - PT: (2,3,22)*
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Not relevant
- Regulation (EC) No 1005/2009, 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

Seveso III:

Not relevant

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

Product classified hazardous under the CMR. Sale and distribution to the general public is prohibited. Due to its CMR category, it is essential to apply the specific measures for workplace hazard prevention covered in articles 4 and 5 of the 2004/37/EC Directive and later modifications.

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.:

Not relevant

Texts of the legislative phrases mentioned in section 2:

- H317: May cause an allergic skin reaction.
- H350: May cause cancer.
- H341: Suspected of causing genetic defects.

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

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MN-FX-CL-R2SZ - DETERMINATION OF MANGANESE REAGENT 2**SECTION 16: OTHER INFORMATION (continued)****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+H312 - Harmful if swallowed or in contact with skin.

Aquatic Acute 1: H400 - Very toxic to aquatic life.

Carc. 1B: H350 - May cause cancer.

Carc. 2: H351 - Suspected of causing cancer.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Met. Corr. 1: H290 - May be corrosive to metals.

Muta. 2: H341 - Suspected of causing genetic defects.

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

Skin Irrit. 2: H315 - Causes skin irritation.

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

STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure (Oral).

Classification procedure:

Skin Sens. 1: Calculation method

Carc. 1B: Calculation method

Muta. 2: Calculation method

Advice related to training:

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

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 -