

Safety data sheet according to Regulation (EC) No. 1907/2006

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

1.1. Product identifier.

Code. **HI93748C-0**
 Product name. **Manganese LR Reagent C**

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

Intended use. **Determination of Manganese in Water Samples.**

1.3. Details of the supplier of the safety data sheet.

Name. **Hanna Instruments S.R.L.**
 Full address. **str. Hanna Nr 1**
 District and Country. **457260 loc. Nusfalau (Salaj)**
Romania
 Tel. **(+40) 260607700**
 Fax. **(+40) 260607700**

e-mail address of the competent person responsible for the Safety Data Sheet. **msds@hanna.ro**

1.4. Emergency telephone number.

For urgent inquiries refer to. **Emergency Number - International: +(1)-703-527-3887 - UK, London: +(44)-870-8200418 - CHEMTREC 24 hours/365 days**

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 3	H226	Flammable liquid and vapour.
Substance or mixture corrosive to metals, category 1	H290	May be corrosive to metals.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: **Danger**

Hazard statements:

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H412	Harmful to aquatic life with long lasting effects.

SECTION 2. Hazards identification. ... / >>

Precautionary statements:

P210	Keep away from heat.
P243	Take precautionary measures against static discharge.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
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 or doctor.
P370+P378	In case of fire: use powder to extinguish.
P391	Collect spillage.
P362	Take off contaminated clothing.
P403	Store in a well-ventilated place.

Contains: TRITON X-114
AMMONIUM HYDROXIDE

2.3. Other hazards.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients.

3.1. Substances.

Information not relevant.

3.2. Mixtures.

Contains:

Identification.	x = Conc. %.	Classification 1272/2008 (CLP).
ETHANOL		
CAS. 64-17-5	9 ≤ x < 30	Flam. Liq. 2 H225, Eye Irrit. 2 H319
EC. 200-578-6		
INDEX. 603-002-00-5		
Reg. no. 01-2119457610-43		
TRIETHANOLAMINE		
CAS. 102-71-6	9 ≤ x < 30	
EC. 203-049-8		
INDEX.		
Reg. no. 01-2119486482-31		
TRITON X-114		
CAS. 9036-19-5	9 ≤ x < 25	Acute Tox. 4 H302, Eye Dam. 1 H318, Aquatic Chronic 2 H411
EC.		
INDEX.		
AMMONIUM HYDROXIDE		
CAS. 1336-21-6	1 ≤ x < 3	Met. Corr. 1 H290, Skin Corr. 1B H314, STOT SE 3 H335, Aquatic Acute 1 H400 M=1, Note B
EC. 215-647-6		
INDEX. 007-001-01-2		
AMMONIUM CHLORIDE		
CAS. 12125-02-9	1 ≤ x < 5	Acute Tox. 4 H302, Eye Irrit. 2 H319
EC. 235-186-4		
INDEX. 017-014-00-8		
Reg. no. 01-2119487950-27		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures.

4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

SECTION 4. First aid measures. ... / >>

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

For symptoms and effects caused by the contained substances, see chap. 11.

AMMONIUM CHLORIDE

Irritant effects. The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

ETHANOL

Irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Irritation and corrosion, bronchitis, Cough, Shortness of breath, gastric pain, Unconsciousness, Bloody vomiting, Nausea, collapse, shock, Risk of blindness!.

TRIETHANOLAMINE

Cough, Pain, Dizziness, Unconsciousness, Diarrhoea, Nausea, Vomiting, collapse, Tiredness.

TRITON X-114

Irritant effects, Dermatitis, Vomiting, Risk of corneal clouding. Risk of serious damage to eyes. Drying-out effect resulting in rough and chapped skin.

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

Information not available.

SECTION 5. Firefighting measures.**5.1. Extinguishing media.****SUITABLE EXTINGUISHING EQUIPMENT**

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture.**HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

ETHANOL

Combustible. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air at ambient temperatures. Pay attention to flashback. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters.**GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures.**6.1. Personal precautions, protective equipment and emergency procedures.**

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

SECTION 6. Accidental release measures. ... / >>

6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up.

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage.

7.1. Precautions for safe handling.

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised.

7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition.

Storage class TRGS 510 (Germany): 3

7.3. Specific end use(s).

Information not available.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
HUN	Magyarország	50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról
NLD	Nederland	Databank of the social and Economic Council of Netherlands (SER) Values, AF 2011:18
ROU	România	Monitorul Oficial al României 44; 2012-01-19
EU	OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
	TLV-ACGIH	ACGIH 2016

SECTION 8. Exposure controls/personal protection. ... / >>

ETHANOL

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	960	500	1920	1000	
MAK	DEU	960	500	1920	1000	
VLA	ESP			1910	1000	
VLEP	FRA	1900	1000	9500	5000	
WEL	GBR	1920	1000			
AK	HUN	1900		7600		
OEL	NLD	260		1900		SKIN.
TLV	ROU	1900	1000	9500	5000	
TLV-ACGIH				1884	1000	

Predicted no-effect concentration - PNEC.

Normal value in fresh water	0,96	mg/l
Normal value in marine water	0,79	mg/l
Normal value for fresh water sediment	3,6	mg/kg/
Normal value for marine water sediment	2,9	mg/kg/
Normal value for water, intermittent release	2,75	mg/l
Normal value of STP microorganisms	580	mg/l
Normal value for the food chain (secondary poisoning)	720	mg/kg
Normal value for the terrestrial compartment	0,36	mg/kg/

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers.				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.			VND	87 mg/kg bw/d				
Inhalation.	VND	950 mg/m3	950 mg/m3	114 mg/m3	1900 mg/m3	VND	1900 mg/m3	950 mg/m3
Skin.			VND	206 mg/kg bw/d			VND	343 mg/kg bw/d

TRIETHANOLAMINE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	5		20		INHAL.
VLA	ESP	5				
OEL	NLD	5				
TLV-ACGIH		5				

Predicted no-effect concentration - PNEC.

Normal value in fresh water	0,32	mg/l
Normal value in marine water	0,032	mg/l
Normal value for fresh water sediment	1,7	mg/kg/
Normal value for marine water sediment	0,17	mg/kg/
Normal value for water, intermittent release	5,12	mg/l
Normal value of STP microorganisms	10	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers.				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.			VND	13 mg/kg bw/d				
Inhalation.			1,25 mg/m3	1,25 mg/m3			5 mg/m3	5 mg/m3
Skin.							VND	6,3 mg/kg bw/d

SECTION 8. Exposure controls/personal protection. ... / >>

AMMONIUM HYDROXIDE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m ³	ppm	mg/m ³	ppm
MAK	DEU	14	20		
OEL	EU	14	20		
TLV-ACGIH		17	25	24	35

AMMONIUM CHLORIDE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m ³	ppm	mg/m ³	ppm
VLA	ESP	10		20	
VLEP	FRA	10			
WEL	GBR	10		20	
MAC	NLD	10			
TLV-ACGIH		10		20	

Predicted no-effect concentration - PNEC.

Normal value in fresh water	0,25	mg/l
Normal value in marine water	0,025	mg/l
Normal value for fresh water sediment	0,9	mg/kg
Normal value for marine water sediment	0,09	mg/kg
Normal value for water, intermittent release	0,43	mg/l
Normal value of STP microorganisms	13,1	mg/l
Normal value for the terrestrial compartment	0,163	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers.				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.			VND	11,4 mg/kg bw/d				
Inhalation.			VND	9,4 mg/m ³			VND	33,5 mg/m ³
Skin.			VND	55,2 mg/kg bw/d			VND	128 mg/kg bw/d

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing

SECTION 8. Exposure controls/personal protection. ... / >>

apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS.

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	liquid
Colour	orange
Odour	pungent
Odour threshold.	Not available.
pH.	9,2
Melting point / freezing point.	Not available.
Initial boiling point.	Not available.
Boiling range.	Not available.
Flash point.	31 °C.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	Not available.
Vapour density	Not available.
Relative density.	0,900
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information.

Total solids (250°C / 482°F)	13,52 %		
VOC (Directive 2010/75/EC) :	20,72 %	- 186,45	g/litre.
VOC (volatile carbon) :	10,79 %	- 97,13	g/litre.

SECTION 10. Stability and reactivity.

10.1. Reactivity.

There are no particular risks of reaction with other substances in normal conditions of use.

ETHANOL

Vapours may form explosive mixture with air.

TRITON X-114

Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Corrodes aluminium, iron, zinc, copper and their alloys.

10.2. Chemical stability.

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions.

The vapours may also form explosive mixtures with the air.

ETHANOL

Risk of explosion on contact with: alkaline metals, alkaline oxides, calcium hypochlorite, sulphur monofluoride, acetic anhydride (with acids), concentrated hydrogen peroxide, perchlorates, perchloric acid, perchloronitrile, mercury nitrate, nitric acid, silver and nitric acid, silver nitrate, silver nitrate and ammonia, silver oxide and ammonia, strong oxidising agents, nitrogen dioxide. Can react dangerously with: bromoacetylene, chlorine acetylene, bromine trifluoride, chromium trioxide, chromyl chloride, oxiranes, fluorine, potassium

SECTION 10. Stability and reactivity. ... / >>

tert-butoxide, lithium hydride, phosphorus trioxide, black platinum, zirconium (IV) chloride, zirconium (IV) iodide. Forms an explosive mixture with the air.

TRIETHANOLAMINE

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Exothermic reaction with: anhydrides, halogenating agents, Nitriles, Oxidizing agents, acids. A risk of explosion and/or of toxic gas formation exists with the following substances: Acid chlorides.

TRITON X-114

Violent reactions possible with: Strong oxidizing agents, Strong acids.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Risk of explosion on contact with strong acids and iodine. Can react dangerously with strong bases.

AMMONIUM CHLORIDE

Violent reactions possible with: alkali hydroxides, acids Risk of ignition or formation of inflammable gases or vapours with: halogen-halogen compounds, alkalines, alkaline substances. Risk of explosion with: nitrates, chlorates, Heavy metal salts, nitrites, Hydrogen cyanide (hydrocyanic acid), Chlorine, silver salt, Strong oxidizing agents.

10.4. Conditions to avoid.

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHANOL

Avoid exposure to sources of heat and naked flames.

AMMONIUM CHLORIDE

Moisture and sources of heat.

10.5. Incompatible materials.

ETHANOL

Rubber, various plastics.

TRIETHANOLAMINE

Nonferrous metals, Light metals.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Silver, lead, zinc and their salts; hydrochloric acid, nitric acid, oleum, halogens, acrolein, nitromethane and acrylic acid.

AMMONIUM CHLORIDE

Water, bromine trifluoride and pentafluoride, iodine heptafluoride, potassium chlorate, alkalis, alkaline carbonates, acids, lead and silver salts.

10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Nitric oxides.

AMMONIUM CHLORIDE

Nitric oxide, ammonia and hydrochloric acid.

SECTION 11. Toxicological information.

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects.

AMMONIUM CHLORIDE

Acute oral toxicity, Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, absorption - Acute inhalation toxicity, Symptoms: Possible damages:, mucosal irritations - Eye irritation, Rabbit

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Result: Eye irritation, Causes serious eye irritation.

ETHANOL

Acute oral toxicity: Symptoms: Nausea, Vomiting - Acute inhalation toxicity: Symptoms: Possible damages:, mucosal irritations absorption - Eye irritation Rabbit Result: Eye irritation. Causes serious eye irritation - Germ cell mutagenicity Genotoxicity in vitro Ames test Salmonella typhimurium Result: negative - In vitro mammalian cell gene mutation test Mouse lymphoma test Result: negative.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32% - Skin irritation rabbit, Result: Severe irritations, (29% solution), Dermatitis Necrosis, Mixture causes burns - Eye irritation rabbit, Result: Severe irritations, (29% solution), Mixture causes serious eye damage. Risk of blindness!.

TRITON X-114

Acute oral toxicity, absorption, Symptoms: Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, Risk of aspiration upon vomiting, Pulmonary failure possible after aspiration of vomit - Acute inhalation toxicity, Symptoms: Possible damages, mucosal irritations - Skin irritation, Possible damages: slight irritation Drying-out effect resulting in rough and chapped skin. Dermatitis - Eye irritation, Causes serious eye damage.

ACUTE TOXICITY.

LC50 (Inhalation - vapours) of the mixture:	Not classified (no significant component).
LC50 (Inhalation - mists / powders) of the mixture:	Not classified (no significant component).
LD50 (Oral) of the mixture:	35800,006 mg/kg
LD50 (Dermal) of the mixture:	Not classified (no significant component).

AMMONIUM CHLORIDE

LD50 (Oral).	1410 mg/kg Rat
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ETHANOL

LD50 (Oral).	> 5000 mg/kg Rat
LC50 (Inhalation).	120 mg/l/4h Pimephales promelas

AMMONIUM HYDROXIDE

LD50 (Oral).	350 mg/kg Rat
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TRIETHANOLAMINE

LD50 (Oral).	4190 mg/kg Rat
LD50 (Dermal).	> 2000 mg/kg Rabbit

TRITON X-114

LD50 (Oral).	1900 mg/kg Rat
LD50 (Dermal).	> 3000 mg/kg

SKIN CORROSION / IRRITATION.

Causes skin irritation.

SERIOUS EYE DAMAGE / IRRITATION.

Causes serious eye damage.

RESPIRATORY OR SKIN SENSITISATION.

Does not meet the classification criteria for this hazard class.

GERM CELL MUTAGENICITY.

Does not meet the classification criteria for this hazard class.

CARCINOGENICITY.

Does not meet the classification criteria for this hazard class.

REPRODUCTIVE TOXICITY.

Does not meet the classification criteria for this hazard class.

STOT - SINGLE EXPOSURE.

Does not meet the classification criteria for this hazard class.

STOT - REPEATED EXPOSURE.

Does not meet the classification criteria for this hazard class.

ASPIRATION HAZARD.

Does not meet the classification criteria for this hazard class.

SECTION 12. Ecological information.

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity.

AMMONIUM CHLORIDE

LC50 - for Fish.	3,98 mg//96h Oncorhynchus mykiss
EC50 - for Crustacea.	> 100 mg//48h Daphnia magna
LC10 for Fish.	4,28 mg//28d Lepomis macrochirus
Chronic NOEC for Fish.	57 mg/l Oncorhynchus mykiss

ETHANOL

LC50 - for Fish.	14200 mg//96h Pimephales promelas
EC50 - for Crustacea.	14221 mg//48h Daphnia magna
Chronic NOEC for Crustacea.	9,6 mg/l Daphnia magna

AMMONIUM HYDROXIDE

LC50 - for Fish.	0,53 mg//96h Oncorhynchus mykiss
EC50 - for Crustacea.	20 mg//48h Daphnia magna

TRITON X-114

LC50 - for Fish.	4 mg//96h Pimephales promelas
EC50 - for Crustacea.	18 mg//48h Daphnia magna

12.2. Persistence and degradability.

AMMONIUM CHLORIDE

Solubility in water.	> 10000 mg/l
Biodegradability: Information not available.	

ETHANOL

Solubility in water.	1000 - 10000 mg/l
Rapidly biodegradable.	

AMMONIUM HYDROXIDE

Biodegradability: Information not available.

TRIETHANOLAMINE

Solubility in water.	> 1000000 mg/l
Rapidly biodegradable.	

12.3. Bioaccumulative potential.

AMMONIUM CHLORIDE

Partition coefficient: n-octanol/water.	-3,2 Log Kow
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ETHANOL

Partition coefficient: n-octanol/water.	-0,35
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AMMONIUM HYDROXIDE

Partition coefficient: n-octanol/water.	-1,38 Log Kow
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TRIETHANOLAMINE

Partition coefficient: n-octanol/water.	-1,75
BCF.	< 3,9

TRITON X-114

Partition coefficient: n-octanol/water.	2,7 Log Kow
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12.4. Mobility in soil.

SECTION 12. Ecological information. ... / >>

TRIETHANOLAMINE

Partition coefficient: soil/water.

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12.5. Results of PBT and vPvB assessment.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects.

ETHANOL

No interference with wastewater treatment plants are to be expected when used properly. Discharge into the environment must be avoided.

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32% - Biological effects: Harmful effect due to pH shift. Forms toxic mixtures in water, dilution measures notwithstanding. Further information on ecology Discharge into the environment must be avoided.

TRIETHANOLAMINE

Additional ecological information, Biological effects: Harmful effect due to pH shift. Hazard for drinking water supplies. Discharge into the environment must be avoided.

SECTION 13. Disposal considerations.

13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information.

14.1. UN number.

ADR / RID, IMDG, IATA: 2924

14.2. UN proper shipping name.

ADR / RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, AMMONIUM HYDROXIDE) MIXTURE

IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, AMMONIUM HYDROXIDE) MIXTURE

IATA: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, AMMONIUM HYDROXIDE) MIXTURE

14.3. Transport hazard class(es).

ADR / RID: Class: 3 Label: 3 (8)



IMDG: Class: 3 Label: 3 (8)



IATA: Class: 3 Label: 3 (8)



14.4. Packing group.

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards.

ADR / RID: NO

IMDG: NO

IATA: NO

SECTION 14. Transport information. ... / >>

14.6. Special precautions for user.

ADR / RID:	HIN - Kemler: 38	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
	Special Provision: -		
IMDG:	EMS: F-E, S-C	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 365
	Pass.:	Maximum quantity: 5 L	Packaging instructions: 354
	Special Instructions:	A3	

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code.

Information not relevant.

SECTION 15. Regulatory information.

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

Seveso Category - Directive 2012/18/EC: P5c

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Product.
Point. 3 - 40

Substances in Candidate List (Art. 59 REACH).

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

WGK 3: Severe hazard to waters

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information.

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
Aquatic Chronic 4	Hazardous to the aquatic environment, chronic toxicity, category 4
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.

SECTION 16. Other information. ... / >>

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
2. Regulation (EU) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website

Note for users:

SECTION 16. Other information. ... / >>

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.