

SAFETY DATA SHEET (SDS)

Ammonia test kit

Issue date: 01-10-2020

Section 1: Product Identifier and Chemical Identity

Product Identifier		
Product Name:	Ammonia test kit	
Product Codes:	ENV2.10	
Other means of identification:		
External product name and code/s:	HI3824	
Manufacturer:		
Hanna Instruments SRL	Str. Hanna Nr 1, 457260 loc. Nusfalau Romania Email: msds@hanna.ro	
Suppliers name, address and phone number		
Suppliers Name:	Southern Biological	
Suppliers ABN:	94 630 703 810	
Suppliers Address:	1/44 Rushdale Street Knoxfield Victoria 3180 Australia	
Suppliers Phone No.:	1300 138 561	
Suppliers Fax No.:	+613 9753 3896	
Emergency Phone number (BH)	1300 138 561	
Document list:		
Product name	Document type	Number of pages
Nessler reagent	SDS	12
Ammonia R1 fresh water	SDS	9

Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

1.1. Product identifier

Code **NESSLER REAG**
 Product name **Nessler Reagent**

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

Intended use **Determination of Ammonia 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 7035273887 - UK, London: +44 8708200418 - 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 (EU) Regulation 2015/830.

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:

Substance or mixture corrosive to metals, category 1	H290	May be corrosive to metals.
Acute toxicity, category 1	H300	Fatal if swallowed.
Acute toxicity, category 1	H310	Fatal in contact with skin.
Acute toxicity, category 2	H330	Fatal if inhaled.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic 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:



SECTION 2. Hazards identification ... / >>

Signal words: Danger

Hazard statements:

H290 May be corrosive to metals.
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing / eye protection / face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor.
P260 Do not breathe dust, fume, gas, mist, vapours, spray.

Contains: POTASSIUM TETRAIODOMERCURATE (II)
SODIUM HYDROXIDE

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
POTASSIUM TETRAIODOMERCURATE (II)		
CAS	7783-33-7 9 ≤ x < 25	Acute Tox. 1 H300, Acute Tox. 1 H310, Acute Tox. 2 H330, STOT RE 2 H373, Aquatic Acute 1 H400 M=100, Aquatic Chronic 1 H410 M=1, Classification note according to Annex VI to the CLP Regulation: 1 A
EC	231-990-4	
INDEX		
SODIUM HYDROXIDE		
CAS	1310-73-2 9 ≤ x < 30	Met. Corr. 1 H290, Skin Corr. 1A H314, Eye Dam. 1 H318
EC	215-185-5	
INDEX	011-002-00-6	
Reg. no.	01-2119457892-27	

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.
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.

POTASSIUM TETRAIODOMERCURATE (II)
Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions.

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

Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhoea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

SODIUM HYDROXIDE

Irritation and corrosion, Cough, Shortness of breath, collapse, death. Risk of blindness!.

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

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

POTASSIUM TETRAIODOMERCURATE (II)

Not combustible. Avoid shock and friction. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: mercury vapours, iodine, hydrogen iodide.

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.

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. 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.

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.

Storage class TRGS 510 (Germany): 6.1A

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

AUS	Österreich	Gesamte Rechtsvorschrift für Grenzwerteverordnung 2018, Fassung vom 17.10.2018
BEL	Belgique	AR du 11/3/2002. La liste est mise à jour pour 2017
BGR	България	МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г (4 Септември 2018г)
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail en Suisse: valeurs VME/VLE. Version Juin 2019 (SUVA)
CZE	Česká Republika	Nařízení vlády č. 246/2018 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
DNK	Danmark	Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019
ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
FIN	Suomi	HTP-VÄRDEN 2018. Koncentrationer som befunnits skadliga. SOCIAL- OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 10/2018
GRC	Ελλάδα	ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 152 - 21 Αυγούστου 2018
HUN	Magyarország	A pénzügyminiszter 7/2018. (VIII. 29.) PM rendelete a munkahelyek kémiai biztonságáról szóló 25/2000. (IX. 30.) EüM–SZCSM együt., Ttes rendelet módosításáról.
HRV	Hrvatska	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/18)
IRL	Éire	2018 Code of Practice for the Chemical Agents Regulations Safety Authority
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
ROU	România	HOTĂRÂRE nr. 584 din 2 august 2018 pentru modificarea Hotărârii Guvernului nr. 1.218/2006 privind stabilirea cerințelor minime de securitate și sănătate în muncă pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezența agenților chimici
SWE	Sverige	Hygieniska gränsvärden, AFS 2018:1
SVK	Slovensko	Nariadenie vlády č. 33/2018 Z. z. Nariadenie vlády Slovenskej republiky, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci v znení neskorších predpisov
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
EU	OEL EU	Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

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

POTASSIUM TETRAIODOMERCURATE (II)

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
MAK	AUS	0,02		0,08		Hg compound
VLEP	BEL	0,02				Hg compound
MAK	CHE	0,02		0,16		INHAL
AGW	DEU	0,02		0,16		INHAL
TLV	DNK	0,025		0,05		Hg compound
VLA	ESP	0,02				Hg compound
VLEP	FRA	0,02				Hg compound
AK	HUN	0,08		0,32		Hg compound
OELV	IRL	0,02				Hg compound
NDS/NDSch	POL	0,02				Hg compound
TLV	ROU	0,02				Hg compound
NGV/KGV	SWE	0,03				Hg compound
WEL	GBR	0,025				Hg compound
OEL	EU	0,02				Hg compound

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
Inhalation	local	systemic	local	systemic	local	systemic	local	systemic
							0,02	VND
							mg/m ³ 8h	

SODIUM HYDROXIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
MAK	AUS	2		4		INHAL
VLEP	BEL	2				
TLV	BGR	2				
MAK	CHE	2				INHAL
TLV	CZE	1		2		
TLV	DNK	2		2		
VLA	ESP			2		
VLEP	FRA	2				
HTP	FIN			2 (C)		
TLV	GRC	2		2		
AK	HUN	2		2		
GVI/KGVI	HRV			2		
OELV	IRL			2 (C)		
NDS/NDSch	POL	0,5		1		
TLV	ROU	1		3		
NGV/KGV	SWE	1				
NPEL	SVK	2				
WEL	GBR			2		
TLV-ACGIH				2 (C)		

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
Inhalation	local	systemic	local	systemic	local	systemic	local	systemic
			VND	1			VND	1
				mg/m ³				mg/m ³

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.

POTASSIUM TETRAIODOMERCURATE (II)

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norm: ISO 17733 - Biological Values, ACGIH: 20 µg mercury/g creatinine in urine, GBR: 20 µmol mercury/mol creatinine in urine (Random), DEU: 25 µg Quecksilber/g Kreatinin Urin (keine Beschränkung), ESP: 30 µg Mercurio inorgánico total/g creatinina en orina (Antes de la jornada laboral), ROU: 35 µg mercur/g creatină in urină (începutul schimbului următor).

SODIUM HYDROXIDE

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norm OSHA ID-121.

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

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.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

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 III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

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

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

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 B 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 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

Properties	Value	Information
Appearance	liquid	
Colour	straw yellow	
Odour	odourless	
Odour threshold	Not available	
pH	13,5	
Melting point / freezing point	Not available	
Initial boiling point	Not available	
Boiling range	Not available	
Flash point	Not applicable	
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	17,5 mmHg	
Vapour density	Not available	
Relative density	1,3	
Solubility	partially 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 applicable	
Oxidising properties	not applicable	

SECTION 9. Physical and chemical properties ... / >>

9.2. Other information

Total solids (250°C / 482°F) 25,83 %

SECTION 10. Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

POTASSIUM TETRAIODOMERCURATE (II)

Sensitivity to light.

SODIUM HYDROXIDE

Hygroscopic.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

POTASSIUM TETRAIODOMERCURATE (II)

Risk of explosion with: Alkali metals. Risk of ignition or formation of inflammable gases or vapours with: halogen-halogen compounds.

SODIUM HYDROXIDE

Risk of explosion/exothermic reaction with: Acetone, Nitriles, phosphides, halogens, halogen-halogen compounds, chlorinated solvents, Ethylene oxide, Hydrazine hydrate, hydroxylamine, anhydrides, Peroxides, Acrolein, Acid chlorides, Acids, sulphuric acid, silver salt, hydrogen peroxide, organic nitro compounds, Water, Metals, Light metals. Possible formation of: Hydrogen. Violent reactions possible with: ammonium compounds, organic combustible substances, phenols. Generates dangerous gases or fumes in contact with: persulfates, Sodium borohydride, Oxides of phosphorus.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

POTASSIUM TETRAIODOMERCURATE (II)

Strong heating.

SODIUM HYDROXIDE

Exposure to the air, moisture and sources of heat.

10.5. Incompatible materials

SODIUM HYDROXIDE

Strong acids, ammonia, zinc, lead, aluminium, water and flammable liquids.

10.6. Hazardous decomposition products

Information not available

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

POTASSIUM TETRAIODOMERCURATE (II)

Acute inhalation toxicity absorption, Acute toxicity estimate: 0,051 mg/l; dust/mist, Expert judgement - Acute dermal toxicity, LD50 rat: 75 mg/kg, absorption - Sensitisation, Sensitisation possible in predisposed persons - Specific target organ toxicity - repeated exposure, Target Organs: Kidney, May cause damage to organs through prolonged or repeated exposure.

SECTION 11. Toxicological information ... / >>

SODIUM HYDROXIDE

Acute oral toxicity, Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach - Acute inhalation toxicity, Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages:., damage of respiratory tract - Skin irritation, Rabbit, Result: Causes severe burns - Eye irritation, Rabbit, Result: Irreversible effects on the eye, Causes serious eye damage. Risk of blindness! - Sensitisation, Patch test: human, Result: Does not cause skin sensitisation - Germ cell mutagenicity, Genotoxicity in vitro, Mutagenicity (mammal cell test): micronucleus, Result: negative, (Lit.) Ames test, Result: negative.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	0,20 mg/l
ATE (Oral) of the mixture:	2,00 mg/kg
ATE (Dermal) of the mixture:	20,00 mg/kg

POTASSIUM TETRAIODOMERCURATE (II)

LD50 (Oral)	18 mg/kg Rat
LD50 (Dermal)	75 mg/kg Rat
LC50 (Inhalation)	0,051 mg/l/4h

SODIUM HYDROXIDE

LD50 (Oral)	1350 mg/kg Rat
LD50 (Dermal)	1350 mg/kg Rat

SKIN CORROSION / IRRITATION

Corrosive for the skin

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

SECTION 11. Toxicological information ... / >>

May cause damage to organs

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

This product is dangerous for the environment and highly toxic for aquatic organisms.

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

12.1. Toxicity

POTASSIUM TETRAIODOMERCURATE (II)

LC50 - for Fish	0,13 mg/l/96h <i>Leuciscus idus</i>
EC50 - for Crustacea	0,0052 mg/l/48h <i>Daphnia magna</i>

SODIUM HYDROXIDE

LC50 - for Fish	45,4 mg/l/96h <i>Oncorhynchus mykiss</i>
EC50 - for Crustacea	40,38 mg/l/48h <i>Daphnia</i>

12.2. Persistence and degradability

SODIUM HYDROXIDE

Solubility in water	> 10000 mg/l
Degradability: information not available	

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

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 \geq than 0,1%.

12.6. Other adverse effects

POTASSIUM TETRAIODOMERCURATE (II)

Discharge into the environment must be avoided.

SODIUM HYDROXIDE

Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Neutralisation possible in waste water treatment plants. 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: 2922

14.2. UN proper shipping name

ADR / RID: CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, POTASSIUM TETRAIODOMERCURATE II) MIXTURE
 IMDG: CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, POTASSIUM TETRAIODOMERCURATE II) MIXTURE
 IATA: CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, POTASSIUM TETRAIODOMERCURATE II) MIXTURE

14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8 (6.1)



IMDG: Class: 8 Label: 8 (6.1)



IATA: Class: 8 Label: 8 (6.1)



14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 86 Special Provision: -	Limited Quantities: 1 L	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo: Pass.: Special Instructions:	Maximum quantity: 30 L Maximum quantity: 1 L A3, A803	Packaging instructions: 855 Packaging instructions: 851

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: H1-E1

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

Product	
Point	3

SECTION 15. Regulatory information ... / >>

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage \geq 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:

POTASSIUM TETRAIODOMERCURATE (II) - (MERCURY COMPOUNDS)

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.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 3: Severe hazard to waters

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

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

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 1/2	Acute toxicity, category 1/2
Acute Tox. 1	Acute toxicity, category 1
Acute Tox. 2	Acute toxicity, category 2
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1A	Skin corrosion, category 1A
Eye Dam. 1	Serious eye damage, category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H290	May be corrosive to metals.
H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

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%

SECTION 16. Other information ... / >>

- 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 (EC) 1907/2006 (REACH) of the European Parliament
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15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- 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
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

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.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

02 / 08.

Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

1.1. Product identifier

Code
Product name

AMMONIA R1 FRESH WATER
Ammonia Reagent 1 for Fresh Water

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

Intended use

Determination of ammonia in fresh water samples.

1.3. Details of the supplier of the safety data sheet

Name
Full address
District and Country

Hanna Instruments S.R.L.
str. Hanna Nr 1
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 7035273887 - UK, London: +44 8708200418 - 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 (EU) Regulation 2015/830.

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:

Specific target organ toxicity - repeated exposure, category 2

H373 May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

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

Hazard pictograms:



Signal words: **Warning**

Hazard statements:
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:
P312 Call a POISON CENTRE or doctor, if you feel unwell.

SECTION 2. Hazards identification ... / >>

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
EDTA DISODIUM SALT		
CAS	6381-92-6 $1 \leq x < 5$	Acute Tox. 4 H332, STOT RE 2 H373
EC	205-358-3	
INDEX		
Reg. no.	01-2119486775-20	

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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

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

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

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

EDTA DISODIUM SALT

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Fire may cause evolution of: nitrogen oxides.

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.

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. 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

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

EDTA DISODIUM SALT

Predicted no-effect concentration - PNEC

Normal value in fresh water	2,2	mg/l
Normal value in marine water	0,22	mg/l
Normal value of STP microorganisms	43	mg/l
Normal value for the terrestrial compartment	0,72	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	25 mg/kg/d						
Inhalation	1,2 mg/m3	VND	0,6 mg/m3	VND	3 mg/m3	VND	1,5 mg/m3	VND

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.

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

When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

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 Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective 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 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.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	colourless	
Odour	odourless	
Odour threshold	Not available	
pH	4,6	
Melting point / freezing point	Not available	
Initial boiling point	Not available	
Boiling range	Not available	
Flash point	Not applicable	
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	1	
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 applicable	
Oxidising properties	not applicable	

9.2. Other information

Total solids (250°C / 482°F)	4,88 %
------------------------------	--------

SECTION 10. Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

EDTA DISODIUM SALT

Violent reactions possible with: Strong oxidizing agents.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

EDTA DISODIUM SALT

Strong heating.

10.5. Incompatible materials

EDTA DISODIUM SALT

Aluminium, Copper, Copper alloys, Nickel, Zinc.

10.6. Hazardous decomposition products

Information not available

SECTION 11. Toxicological information

11.1. Information on toxicological effects

EDTA DISODIUM SALT

Skin irritation, Rabbit, Result: No irritation, (anhydrous substance) - Eye irritation, Rabbit, Result: No eye irritation, (anhydrous substance) - Sensitisation, Sensitisation possible in predisposed persons - Germ cell mutagenicity Genotoxicity in vitro, Ames test, Salmonella typhimurium, Result: negative (anhydrous substance), Mouse lymphoma test, Result: negative, (anhydrous substance) - Specific target organ toxicity, repeated exposure, Target Organs: Respiratory Tract, May cause amage to organs through prolonged or repeated exposure - Repeated dose toxicity, Rat male, Inhalation aerosol, 5 d daily, LOAEL: 0,03 mg/l, Target Organs: Lungs, larynx - Repeated dose toxicity, Rat male and female, Inhalation dust/mist, 90 d daily, NOAEL: 0,003 mg/l, Target Organs: larynx.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:

> 5 mg/l

ATE (Oral) of the mixture:

Not classified (no significant component)

ATE (Dermal) of the mixture:

Not classified (no significant component)

SECTION 11. Toxicological information ... / >>

EDTA DISODIUM SALT
LD50 (Oral) > 2800 mg/kg Rat

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

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

May cause damage to organs

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity

EDTA DISODIUM SALT
Toxicity to bacteria, EC50 activated sludge: 403 mg/l, 3 h, - EC50 Pseudomonas putida: 56 mg/l, 8 h (anhydrous substance).

EDTA DISODIUM SALT
LC50 - for Fish 320 mg/l/96h Poecilia Reticulata

12.2. Persistence and degradability

EDTA DISODIUM SALT
Solubility in water 100 mg/l 20°C

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

SECTION 15. Regulatory information ... / >>

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.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 1: Low hazard to waters

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

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

Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

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

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Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 04 / 05 / 08 / 09 / 10 / 11 / 12 / 15.