

Safety Data Sheet

According to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66

Revision Date: 2012-05-21
Reason for Revision: Section 14 Updated

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: Nessler Reagent

Application: Determination of Ammonia in Water Samples

Company Information (USA):

Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895

Technical Service Contact Information:

1-800-426-6287 (8:30AM - 5:00PM ET)
+1-401-766-4260 (8:30AM - 5:00PM ET)

USA Emergency Contact Information:

1-800-424-9300 (Chemtrec 24Hr. Emergency)

International Emergency Contact Information:

+1-703-527-3887 (Chemtrec 24Hr. Emergency)

E-mail Address:

tech@hannainst.com

SECTION 2: HAZARD IDENTIFICATION

Very toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Causes severe burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	Sodium Hydroxide	Mercury (II) Iodide
EC-No.:	215-185-5	231-873-8
CAS-No.:	1310-73-2	7774-29-0
Hazard:	C	T+, N
Phrases:	R: 35	R: 26/27/28-33-50/53
Content:	> 5% - < 20%	> 2% - < 10%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. If necessary, apply mouth-to-mouth resuscitation or mechanical ventilation. Summon doctor.

After Skin Contact: Wash affected area with plenty of water. Immediately remove contaminated clothing.

After Eye Contact: Rinse out immediately with plenty of water and seek medical advice.

After Swallowing: Drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately seek medical advice. Do not attempt to neutralize

General Information: Remove contaminated, soaked clothing immediately and dispose of safely.

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SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Water spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam.

Special Risks:

Development of hazardous combustion gases or vapors possible in the event of fire. Hydrogen may form upon contact with metals (danger of explosion!). The following may develop in event of fire: Mercury Vapors

Special Protective Equipment:

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Additional Information:

Product itself is non-combustible. Cool container with spray water from a safe distance. Contain escaping vapors with water. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental Precautions:

Do not discharge into the drains/surface waters/groundwater.

Additional Notes:

Render harmless: neutralize with diluted sulfuric acid solution.

SECTION 7: HANDLING AND STORAGE

Handling:

Avoid generation of vapors/aerosols. Work under hood.
Do not inhale substance.

Storage:

Tightly closed. In a well-ventilated place at +15 to +25 °C. Protect from light. Accessible only for authorized persons.

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SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
Mercury(II) Iodide					
TWA (8hr)	0.025 mg (Hg)/m ³	Belgium	TWA (8hr)	0.025 mg (Hg)/m ³	Canada (Ontario)
TWA (8hr)	0.025 mg (Hg)/m ³	Canada (Quebec)	TWA (8hr)	0.1 mg (Hg)/m ³	France
TWA (8hr)	0.1 mg (Hg)/m ³	Germany	TWA (8hr)	0.1 mg (Hg)/m ³	Greece
TWA (8hr)	0.08 mg (Hg)/m ³	Hungary	TWA (8hr)	0.05 mg (Hg)/m ³	Poland
TWA (8hr)	0.025 mg (Hg)/m ³	Portugal	TWA (8hr)	0.025 mg (Hg)/m ³	Spain
TWA (8hr)	0.01 mg (Hg)/m ³	UK	TWA (8hr)	0.025 mg (Hg)/m ³	USA (ACGIH)
TWA (8hr)	2 mg (Hg)/m ³	USA (OSHA)			
Sodium Hydroxide					
Ceiling	2 mg/m ³	Belgium	Ceiling	2 mg/m ³	Canada (Ontario)
Ceiling	2 mg/m ³	Canada (Quebec)	TWA (8hr)	2 mg/m ³	France
TWA (8hr)	2 mg/m ³	Greece	TWA (8hr)	2 mg/m ³	Hungary
TWA (8hr)	0.5 mg/m ³	Poland	Ceiling	2 mg/m ³	Portugal
TWA (8hr)	1 mg/m ³	Romania	Ceiling	2 mg/m ³	Spain
TWA (15min)	2 mg/m ³	UK	Ceiling	2 mg/m ³	USA (ACGIH)
TWA (8hr)	2 mg/m ³	USA (OSHA)			

Engineering:

Maintain general industrial hygiene practice.

Personal Protective Equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

Respiratory Protection:

Required when vapors/aerosols are generated. Work under hood.

Protective Gloves:

Rubber or plastic

Eye Protection:

Goggles or face mask

Industrial Hygiene:

Change contaminated clothing. Wash hands after working with substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Yellowish liquid	Odor:	Odorless	Density at 20°C:	1.28 g/cm ³
Melting Point:	ND	Boiling Point:	ND	Solubility:	Soluble
pH at 20°C:	Strongly basic	Explosion Limit:	NA	Flash Point:	NA
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Has a corrosive effect.

Hazardous Decomposition Products:

In the event of fire: See section 5.

Substances to be Avoided:

Metals; light metals: formed could be: hydrogen (risk of explosion)

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Quantitative data on the toxicity of this product is not available.

Potential Health Effects:

- Inhalation:** After inhalation of aerosols: damage to the affected mucous membranes.
- Skin Contact:** Severe burns with formation of scabs.
- Eye Contact:** Burns, corneal lesion.
- Ingestion:** Severe pain (risk of perforation).
- Further Data:** Systemic effects: mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: ACUTE: contact with eyes causes severe lesions. Swallowing and inhalation of dust damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal edema, 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). Further hazardous properties cannot be excluded. The product should be handled with the usual care when dealing with chemicals.

Component Toxicity**Acute Toxicity:****Mercury(II) iodide****LD50:** Oral - Rat - 18 mg/kg**LD50:** Dermal - Rat - 75 mg/kg**Chronic Toxicity:**

Not Available

Additional Data:

Not Available

SECTION 12: ECOLOGICAL INFORMATION

Quantitative data on the ecological effect of this product is not available. Biological effects: high aquatic toxicity. Harmful effect due to pH shift. Caustic even in diluted form. Endangers drinking water supplies if it enters in large quantities in soil and/or waters. Does not cause biological oxygen deficit.

- Further Data:** APPLICABLE TO PARTIAL COMPONENT:
The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): *Leuciscus idus* LC50: 0.5 mg/L (48h), *Daphnia magna* EC50: 0.005-3,6 mg/L (48h), *Chlorella pyrenoidosa* EC50: 0.3 mg/L (5h), *Pseudomonas fluorescens* IC50: 0.005 mg/L. The toxicity of mercury(II) ions for water organisms depends on the water hardness [source: IPCS].
The following applies to iodides in general: biological effects: crustaceans: *D. magna* EC50: 2.7 mg/L; protozoa: *E. sulcatum* toxic as from 40 mg/L .
The following applies to sodium hydroxide: fish toxicity: LC50: 189 mg/L (1 N solution)

DO NOT ALLOW TO ENTER WATERS, WASTE WATERS, OR SOIL!

SECTION 13: DISPOSAL CONSIDERATIONS

- Waste Disposal:** Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

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SECTION 14: TRANSPORTATION INFORMATION

	Land (ADR/RID):	Sea (IMDG):	Air (ICAO/IATA):
UN No.:	2922	2922	2922
Proper Shipping Name:	Corrosive liquid, toxic, n.o.s. (sodium hydroxide, mercuric iodide mixture)	Corrosive liquid, toxic, n.o.s. (sodium hydroxide, mercuric iodide mixture)	Corrosive liquid, toxic, n.o.s. (sodium hydroxide, mercuric iodide mixture)
Class (Sub Risk):	8 (6.1)	8 (6.1)	8 (6.1)
Packing Group:	II	II	II

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: T+: Very toxic
C: Corrosive
N: Dangerous for the environment

R-phrases: 26/27/28-33-35-51/53: Very toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Causes severe burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases: 28-36/37/39-45-61: After contact with skin, rinse immediately with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions safety data sheet.

Contains: Mercury (II) iodide, Sodium hydroxide

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
33: Danger of cumulative effects.
35: Causes severe burns.
50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision Information

Revision Date: 2012-05-21
Supersedes edition of: 2009-06-10
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Legend

NA: Not Applicable
ND: Not Determined

THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.