

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00503

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Nessler Reagent
Catalog Number: 2119432

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M00503
Chemical Name: Not applicable
CAS Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Intended Use: Laboratory Reagent Determination of ammonium nitrogen

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Corrosive to Metals: Met. Corr. 1 Acute Toxicity: Acute Tox. 3-Orl Acute Toxicity: Acute Tox. 3-Derm Acute Toxicity: Acute Tox. 3-Inh Skin Corrosion/Irritation: Skin Corr. 1A Hazardous to the Aquatic Environment: Aquatic Acute 1 Hazardous to the Aquatic Environment: Aquatic Chronic 1

GHS Label Elements:

DANGER



Hazard statements: May be corrosive to metals. Toxic if swallowed, in contact with skin or if inhaled Causes severe skin burns and eye damage. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statements: Keep only in original container. Do not breathe dust/fume/gas/mist/vapours/spray. Handle environmental release according to local, state, federal, provincial requirements. Wear eye protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Dispose of contents/container according to state, local, federal or national regulations.

HMIS:

Health: 3

Flammability: 0

Reactivity: 1

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 3

Flammability: 0

Reactivity: 1

Symbol: Not applicable

WHMIS Hazard Classification: Class E - Corrosive material Class D, Division 1, Subdivision A - Very toxic materials (immediate effects)

WHMIS Symbols: Acute Poison Corrosive

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Sodium Hydroxide

CAS Number: 1310-73-2

Chemical Formula: NaOH

GHS Classification: Met. Corr.1, H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

Percent Range: 10.0 - 20.0

Percent Range Units: weight / weight

PEL: 2 mg/m³

TLV: Not established

WHMIS Symbols: Acute Poison Corrosive

Mercuric Iodide

CAS Number: 7774-29-0

Chemical Formula: HgI₂

GHS Classification: Acute Tox. 2 - Inh, H330; Acute Tox. 1 - Derm, H310; Acute Tox. 2 - Oral, H300; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410

Percent Range: 5.0 - 10.0

Percent Range Units: weight / weight

PEL: 0.1 mg(Hg)/m³ (skin)

TLV: 0.1 mg(Hg)/m³ (skin)

WHMIS Symbols: Acute Poison Other Toxic Effects

Sodium Iodide

CAS Number: 7681-82-5

Chemical Formula: NaI

GHS Classification: Acute Tox.5 - Oral, H303; Aquatic Acute 1, H400

Percent Range: 5.0 - 10.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Other Toxic Effects

Hazardous Components according to GHS: No

Demineralized Water

CAS Number: 7732-18-5

Chemical Formula: H₂O

GHS Classification: Not a dangerous substance according to GHS.

Percent Range: 70.0 - 80.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Remove contaminated clothing. Wash skin with plenty of water for 15 minutes. Call physician immediately.

Inhalation: Remove to fresh air.

Ingestion (First Aid): Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammable Properties: During a fire, irritating and highly toxic gases may be generated by thermal decomposition.

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: None reported

Hazardous Combustion Products: Toxic fumes of: mercury sodium oxides iodine compounds

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Containment Technique: Releases of this material may contaminate the environment. Stop spilled material from being released to the environment. Cover spilled solid material with sand or other inert material.

Clean-up Technique: Mercury and its compounds are extremely toxic! Avoid breathing spilled material. Avoid contact with spilled material. If permitted by regulation, Absorb spilled liquid with non-reactive sorbent material. Sweep up material. Dispose of all mercury contaminated material at a government approved hazardous waste facility. Dispose of material in government approved hazardous waste facility. Decontaminate area with commercially available mercury absorbing compounds. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

Evacuation Procedure: Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

DOT Emergency Response Guide Number: 154

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep away from: acids organic material ammonia Protect from: light heat freezing

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Maintain adequate ventilation to keep vapor level below TWA for chemicals in this product. Maintain general industrial hygiene practices when using this product. Use a fume hood to avoid exposure to dust, mist or vapor.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin Protection: neoprene latex gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

Inhalation Protection: laboratory fume hood

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: light heat freezing Keep away from: acids/acid fumes ammonia organic materials

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, yellow liquid
Physical State: Liquid
Molecular Weight: Not applicable
Odor: Not determined
Odor Threshold: Not available
pH: 12.1
Metal Corrosivity:
Corrosivity Classification: Classified as corrosive to metals.
Steel: Not determined
Aluminum: Not determined
Specific Gravity/ Relative Density (water = 1; air =1): 1.265
Viscosity: Not determined
Solubility:
Water: Miscible
Acid: Not determined
Other: Not determined
Partition Coefficient (n-octanol / water): Not applicable
Coefficient of Water / Oil: Not applicable
Melting Point: Not available
Decomposition Temperature: 110 °C
Boiling Point: 110 °C (Decomposes)
Vapor Pressure: Not available
Vapor Density (air = 1): Not available
Evaporation Rate (water = 1): Not determined
Volatile Organic Compounds Content: Not applicable
Flammable Properties: During a fire, irritating and highly toxic gases may be generated by thermal decomposition.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not available
Explosive Properties:
Not classified according to GHS criteria.
Oxidizing Properties:
Not classified according to GHS criteria.
Reactivity Properties:
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Gas under Pressure:
Not classified according to GHS criteria.
Not determined

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: Incompatible with: acids oxidizers organic materials ammonia
Hazardous Decomposition: Toxic fumes of: mercury iodine compounds
Conditions to Avoid: Exposure to light or contamination by organic materials will affect this product's stability. Extreme temperatures

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.
Toxicologically Synergistic Products: None reported
Acute Toxicity: Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
ATE Oral Rat LD50 = 189 mg/kg
ATE Dermal Rat LD50 = 732 mg/kg
ATE inhalation Rat LC50 = 5.3 mg/L/4 hr

Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.

Skin Corrosion/Irritation: Corrosive to skin.

Eye Damage: Corrosive to eyes.

Sensitization: Based on classification principles, the classification criteria are not met.

CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

Symptoms/Effects:

Ingestion: Very Toxic May cause: abdominal pain nausea vomiting diarrhea shock loosening of the teeth toxic nephritis (inflammation of the kidneys) liver damage kidney damage collapse death burns of the mouth, esophagus and stomach

Inhalation: Very Toxic May cause: mouth soreness nausea vomiting abdominal pain diarrhea headache muscular twitching central nervous system effects liver damage kidney damage loosening of the teeth

Skin Absorption: Very toxic Will be absorbed through the skin. Effects similar to those of ingestion

Chronic Effects: Mercury is a general protoplasmic poison; it circulates in the blood and is stored in the liver, kidneys, spleen and bones. Main symptoms are sore mouth, tremors and psychic disturbances. Iodines overdose, 'iodism', may cause skin rash, runny nose, headaches, fever and bronchitis. Chronic overexposure may cause central nervous system effects brain damage kidney damage liver damage

Medical Conditions Aggravated: Allergies or sensitivity to mercury. Pre-existing: Eye conditions Skin conditions Respiratory conditions Liver conditions Kidney conditions Central nervous system diseases

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product. Mobility in soil: No data available Do not place in landfill. Recycle appropriately. Do not release into the environment.

Ingredient Ecological Information: Mercury Iodide: LC50 Leuciscus idus 96 hr = 0.13 mg/l, EC50 Daphnia magna = 0.0052 mg/l; Sodium Iodide: Oncorhynchus mykiss 96 hr LC50 = 3780 mg/l; Daphnia magna 48 hr EC50 = 0.17 mg/l; Sodium Hydroxide: CEPA statement: Persistent, not inherently toxic to aquatic organisms or bioaccumulative. Mercuric Iodide and Sodium Iodide: Persistent, inherently toxic to aquatic organisms, not bioaccumulative.

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002 D009

Special Instructions (Disposal): Decontaminate any equipment or surfaces that have come in contact with mercury with commercially available mercury absorbing compounds. Dispose of all mercury contaminated material at an E.P.A. hazardous waste facility. Dispose of material in an E.P.A. approved hazardous waste facility.

Empty Containers: Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

D.O.T.:

D.O.T. Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
(Mercuric Iodide/Sodium Hydroxide Solution)

Hazard Class: 8

Subsidiary Risk: 6.1

ID Number: UN2922

Packing Group: II

T.D.G.:

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
(Mercuric Iodide/Sodium Hydroxide Solution)

Hazard Class: 8

Subsidiary Risk: 6.1

UN Number/PIN: 2922

Packing Group: II

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
(Mercuric Iodide/Sodium Hydroxide Solution)

Hazard Class: 8

Subsidiary Risk: 6.1

ID Number: UN2922

Packing Group: II

I.M.O.:

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
(Mercuric Iodide/Sodium Hydroxide Solution)

Hazard Class: 8

Subsidiary Risk: 6.1

ID Number: UN2922

Packing Group: II

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Mercuric Iodide

302 (EHS) TPQ (40 CFR 355): Not applicable

304 CERCLA RQ (40 CFR 302.4): Sodium Hydroxide 1000 lbs.

304 EHS RQ (40 CFR 355): Not applicable

Clean Water Act (40 CFR 116.4): Sodium Hydroxide - RQ = 1000 lbs. (454 kgs.)

RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

State Regulations:

California Prop. 65: WARNING - This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Identification of Prop. 65 Ingredient(s): Mercuric Iodide

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

CAS Number: Not applicable

Canadian Inventory Status: All ingredients of this product are DSL Listed.

EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.

Australian Inventory (AICS) Status: All ingredients are listed.

New Zealand Inventory (NZIoC) Status: All components either listed or exempt.

Korean Inventory (KECI) Status: All components of this product are either listed, listed as the anhydrous compound or exempt.

Japan (ENCS) Inventory Status: All components either listed or exempt.

China (PRC) Inventory (MEP) Status: All components either listed or exempt.

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Vendor Information. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. In-house information. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Technical Judgment.

Complete Text of H phrases referred to in Section 3: H290 May be corrosive to metals. H300 Fatal if swallowed. . H310 Fatal in contact with skin. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H330 Fatal if inhaled. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. . H410 Very toxic to aquatic life with long lasting effects.

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 03

Month: July

Year: 2014

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

Legend:

NA - Not Applicable

w/w - weight/weight

ND - Not Determined

w/v - weight/volume

NV - Not Available

v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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