

Issuing Date 2/16/2012

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	AMMONIA NITROGEN REAGENT #2 (NESSLER REAGENT)
Product Code(s)	4798
Recommended Use	Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).
Company	LaMotte Company, Inc. 802 Washington Avenue P.O. Box 329 Chestertown, MD 21620 USA
Emergency Telephone Number	24 Hour Emergency Number (CHEM-TEL): USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

DANGER! POISON!**Emergency Overview**
MAY BE FATAL IF SWALLOWED

Corrosive
Harmful by inhalation
Harmful in contact with skin
Liquid and mist can cause severe burns to all body tissue
Water reactive

Appearance Clear yellow solution**Physical State** Liquid**Odor** Odorless

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). Safety information is given for exposure to the reagent as sold and considers exposure to the chemical if user has direct eye and skin contact.

Potential Health Effects

Principle Routes of Exposure Eye contact, Inhalation, skin contact, and ingestion.

Acute Toxicity**Eyes**

Corrosive to the eyes and may cause severe damage including blindness.

Skin

Corrosive. Contact with skin causes irritation to severe burns. Can cause redness, pain, and severe skin burns. Harmful if absorbed through skin.

Inhalation

Poison - may be fatal if inhaled. Inhalation of corrosive mist may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Depending on exposure, the effects from inhalation of corrosive mists can vary from mild irritation to serious damage to respiratory tract.

Ingestion

Very toxic if swallowed. Average lethal dose for inorganic mercury salts is about 1 gram. Corrosive. Can cause immediate pain and burning in the mouth, throat, esophagus and GI tract. May cause nausea, vomiting, and diarrhea, and in severe cases death.

Chronic Effects

Prolonged exposure may cause chronic effects

Main Symptoms

Prolonged contact has a destructive effect on tissue.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical Name	CAS-No	Weight %
Mercuric chloride	7487-94-7	3.4
Potassium iodide	7681-11-0	5-10
Potassium hydroxide	1310-58-3	15
Water	7732-18-5	to 100%

4. FIRST AID MEASURES

General Advice	Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not delay care and transport of a seriously injured person. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush eyes with gentle stream of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Call a physician immediately.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Remove and wash contaminated clothing before re-use. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. Call a physician immediately.
Ingestion	DO NOT INDUCE VOMITING. Drink large quantity of water. Immediate medical attention is required. Never give anything by mouth to an unconscious person.
Protection of First-aiders	Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.
Flash Point	Not applicable
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Explosion Data	
Specific Hazards Arising from the Chemical	Contact with most metals causes the formation of explosive and flammable hydrogen gas. React vigorously with water.
NFPA	Health Hazard 3 Flammability 0 Stability 1 Physical and Chemical Hazards W
HMIS	Health Hazard 3 Flammability 0 Stability 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure adequate ventilation. Avoid contact with skin, eyes and inhalation of vapors. Use personal protective equipment. Refer to Section 8.
Methods for Containment	Dike to collect large liquid spills. Do not flush to sewer. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.
Methods for Cleaning Up	Neutralize spills with acid such as acetic, hydrochloric or sulfuric, absorb with vermiculite or other inert substance, and package in a suitable container for disposal. Prevent product from entering drains.

7. HANDLING AND STORAGE

Handling	Handle in accordance with good industrial hygiene and safety practice. Prevent contact with skin, eyes, and clothing. Do not ingest. Do not eat, drink, or smoke when using this product.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, moisture, and incompatibles. Keep away from metals and organic halogens. Ensure that leaks or spills cannot reach drains, sewers or surface waters. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Mercuric chloride 7487-94-7	TWA: 0.025 mg/m ³	None Known	IDLH: 10 mg/m ³ Ceiling: 0.1 mg/m ³ TWA: 0.05 mg/m ³
Potassium iodide 7681-11-0	TWA: 0.01 ppm	None Known	None Known
Potassium hydroxide 1310-58-3	None Known	None Known	Ceiling: 2 mg/m ³
Water 7732-18-5	None Known	None Known	None Known

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Showers Eyewash stations Ventilation systems.
Personal Protective Equipment	
Eye/Face Protection	Safety glasses with side-shields. If splashes are likely to occur, wear: Face-shield.
Skin and Body Protection	Gloves & Lab Coat. Incidental contact/splash protection: Chemical resistant apron.
Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear yellow solution	Odor	Odorless
Physical State	Liquid	pH	
14			
Flash Point	Not applicable	Autoignition Temperature	Not applicable
Boiling Point/Range	> 100°C/212°F		
Vapor Pressure	No information available	Vapor Density	No information available

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use and storage.
Incompatible Products	Strong acids. Metals. Water-reactive, reacts vigorously with water.
Conditions to Avoid	Excessive heat. Incompatible products.
Hazardous Decomposition Products	Potassium Oxides. Iodine gas.
Hazardous Reactions	Reacts violently with water. Contact with metals may evolve flammable hydrogen gas.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Mercuric chloride	1 mg/kg (Rat)	None Known	None Known
Potassium iodide	None Known	None Known	None Known
Potassium hydroxide	214 mg/kg (Rat)	None Known	85 mg/L Gambusia affinis 24 hr
Water	90 mL/kg (Rat)	None Known	None Known

Chronic Toxicity

Chronic Toxicity Prolonged exposure may cause chronic effects.

Carcinogenicity All forms of mercury can cross the placenta to the fetus. Most of what is known has been learned from experimental animals. .

Chemical Name	ACGIH	IARC	NTP	OSHA
Mercuric chloride	None Known	None Known	None Known	None Known
Potassium iodide	None Known	None Known	None Known	None Known
Potassium hydroxide	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

Endocrine Disruptor Information

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Mercuric chloride	None Known	None Known	None Known

Potassium iodide	None Known	None Known	None Known
Potassium hydroxide	None Known	None Known	None Known
Water	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

This material is expected to be toxic to aquatic life. May cause long-term adverse effects in the environment.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Mercuric chloride	None Known	LC50= 0.16 mg/L <i>Lepomis macrochirus</i> 96 h	None Known	EC50 = 0.093 mg/L 48 h
Potassium iodide	None Known	None Known	None Known	None Known
Potassium hydroxide	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

Persistence and Degradability

Based on components product is expected to be poorly eliminated from water and poorly biodegradable.

Bioaccumulation/Accumulation

Some components of this material have some potential to bioaccumulate but not all have been tested. For Mercury: Has an experimentally-determined BCF (bioconcentration factor) of greater than 100. This material is expected to significantly bioaccumulate.

Chemical Name	Log Pow
Mercuric chloride	None Known
Potassium iodide	None Known
Potassium hydroxide	= 0.65 = 0.83
Water	None Known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of in accordance with local regulations. Should not be released into the environment.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Mercuric chloride - 7487-94-7	None Known	None Known	None Known	None Known
Potassium iodide - 7681-11-0	None Known	None Known	None Known	None Known
Potassium hydroxide - 1310-58-3	None Known	None Known	None Known	None Known
Water - 7732-18-5	None Known	None Known	None Known	None Known

14. TRANSPORT INFORMATION**DOT**

Proper Shipping Name	CORROSIVE LIQUIDS, TOXIC, N.O.S. (Potassium hydroxide/Mercuric chloride solution)
Hazard Class	8
Subsidiary Class	6.1
UN-No	2922
Packing Group	II
Reportable Quantity (RQ)	1000

IATA

UN-No	2922
Proper Shipping Name	CORROSIVE LIQUIDS, TOXIC, N.O.S. (Potassium hydroxide/Mercuric chloride solution)
Hazard Class	8
Subsidiary Class	6.1
Packing Group	II

IMDG/IMO

Proper Shipping Name	CORROSIVE LIQUIDS, TOXIC, N.O.S. (Potassium hydroxide/Mercuric chloride solution)
Hazard Class	8
Subsidiary Class	6.1
UN-No	2922
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Mercuric chloride 7487-94-7 (3.4)	Present	X	X	1-226	X	KE-23121	X	X
Potassium iodide 7681-11-0 (5-10)	Present	X	X	(1)-439	X	KECL	X	X
Potassium hydroxide 1310-58-3 (15)	Present	X	X	1-369	X	KE-29139	X	X
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Mercuric chloride	7487-94-7	3.4	1.0
Potassium iodide	7681-11-0	5-10	None Known
Potassium hydroxide	1310-58-3	15	None Known
Water	7732-18-5	to 100%	None Known

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Mercuric chloride 7487-94-7 (3.4)	None Known	X	None Known	None Known
Potassium iodide 7681-11-0 (5-10)	None Known	None Known	None Known	None Known
Potassium hydroxide 1310-58-3 (15)	1000 lb	None Known	None Known	X
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs: .

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Mercuric chloride	7487-94-7	3.4	Present (includes any unique chemical substance that contains Mercury as part of its infrastructure)	None Known	None Known	None Known

Potassium iodide	7681-11-0	5-10	None Known	None Known	None Known	None Known
Potassium hydroxide	1310-58-3	15	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Mercuric chloride	None Known	500 lb
Potassium iodide	None Known	None Known
Potassium hydroxide	1000 lb	None Known
Water	None Known	None Known

U.S. State Regulations**California Proposition 65**

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm
Mercury

Chemical Name	CAS-No	California Prop. 65
Mercuric chloride	7487-94-7	Developmental
Potassium iodide	7681-11-0	None Known
Potassium hydroxide	1310-58-3	None Known
Water	7732-18-5	None Known

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mercuric chloride	X	X	X	X	None Known
Potassium iodide	None Known	None Known	None Known	None Known	None Known
Potassium hydroxide	X	X	X	None Known	X
Water	None Known	None Known	None Known	None Known	None Known

International Regulations**Mexico - Grade**

Chemical Name	Carcinogen Status	Exposure Limits
Mercuric chloride	None Known	Mexico: TWA= 0.05 mg/m ³
Potassium iodide	None Known	None Known
Potassium hydroxide	None Known	None Known
Water	None Known	None Known

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Mercuric chloride 7487-94-7 (3.4)	0.1 % D1A D2B
Potassium iodide 7681-11-0 (5-10)	1 % D2A
Potassium hydroxide 1310-58-3 (15)	1 % D1B E
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria



16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1" style="border-collapse: collapse;"> <tr> <td style="background-color: #0000FF; color: white;">Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="background-color: #FF0000; color: white;">Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="background-color: #FFFF00; color: black;">Reactivity</td> <td style="text-align: center;">1</td> </tr> </table>	Health Hazard	3	Fire Hazard	0	Reactivity	1		
Health Hazard	3								
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Prepared By Regulatory Affairs Department

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Revision Note
Initial Release

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS