

Issuing Date 4/18/2011

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Manganese Reagent 2
Product Code(s)	5263
Recommended Use	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**

Corrosive

Liquid and mist can cause severe burns to all body tissue

May be fatal if inhaled, or swallowed

Appearance Light yellow**Physical State** Liquid**Odor** Vinegar

OSHA Regulatory Status	This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold, but considers exposure to the chemical if user has direct eye and skin contact with the chemical.
Potential Health Effects	
Principle Routes of Exposure	Inhalation, skin contact, and ingestion
Acute Toxicity	
Eyes	Corrosive to the eyes and may cause severe damage including blindness.
Skin	Can cause redness, pain, and severe skin burns. May discolor the skin. Harmful if absorbed through skin.
Inhalation	Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract; in severe cases, pulmonary edema, circulatory failure, and death.
Ingestion	Can burn mouth, throat, stomach, and GI tract. 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	
Chronic exposure to corrosive mists or vapors may cause erosion of the teeth	
Aggravated Medical Conditions	Hypersensitivity may occur in those with preexisting skin disorders. Respiratory disorders. Preexisting eye disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Sodium hydroxide	1310-73-2	0.8
4,4`-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	101-61-1	2.5
Acetic acid	64-19-7	20
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.
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. Consult a physician.
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 plenty of water. Clean mouth with water. Call a physician immediately. 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	Contact with strong oxidizers may cause fire.			
Flash Point	39°C (102°F) CC for Glacial Acetic Acid			
Suitable Extinguishing Media	Dry chemical, CO ₂ , water spray or alcohol-resistant foam.			
Explosion Data				
NFPA	Health Hazard 3	Flammability 1	Stability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 3	Flammability 1	Stability 1	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment. Refer to Section 8. Avoid contact with skin, eyes and inhalation of vapors.
Methods for Cleaning Up	Neutralize spill with alkaline material (sodium bicarbonate), being careful to prevent splattering, then containerize slurry and hold for later disposal. If local regulations permit, dilute slurry with water and rinse to drain with excess water. After cleaning, flush away traces with water.

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. Store at room temperature. Keep away from direct sunlight. Keep away from heat and incompatibles. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	None Known	TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
4,4'-Methylenebis(N,N-dimethyl)benzenamine (Michler's Base) 101-61-1	None Known	None Known	None Known
Acetic acid 64-19-7	= 15 ppm STEL TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³	IDLH: 50 ppm TWA: 25 mg/m ³ TWA: 10 ppm STEL: 15 ppm STEL: 37 mg/m ³
Water 7732-18-5	None Known	None Known	None Known

Personal Protective Equipment

Eye/Face Protection

Safety glasses with side-shields.

Skin and Body Protection

Wear protective gloves/clothing. Impervious clothing. Impervious gloves.

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	Light yellow	Odor	Vinegar
Physical State	Liquid	pH	3
Flash Point	39°C (102°F) CC for Glacial Acetic Acid	Autoignition Temperature	516°C (961°F) for Glacial Acetic Acid
Boiling Point/Range	118°C / 244°F for Glacial Acetic Acid	Flammability Limits in Air	For Glacial Acetic acid
		Upper	4.0
		Lower	19.9
Vapor Pressure	No information available	Vapor Density	>1 (Air = 1)

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use and storage.
Incompatible Products	Alkalis. Metals. Oxidizing agents. Strong acids.
Conditions to Avoid	Incompatible products. Ignitions sources - heat, sparks and open flames. Do not freeze.
Hazardous Decomposition Products	Carbon oxides. Nitrogen oxides (NO _x).

Hazardous Reactions Thermal decomposition may form CO/CO₂ May react with metals to produce flammable hydrogen gas.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	None Known	1350 mg/kg (Rabbit)	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known	None Known
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 1 h
Water	90 mL/kg (Rat)	None Known	None Known

Chronic Toxicity

Chronic Toxicity Chronic exposure to corrosive mists or vapors may cause erosion of the teeth.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium hydroxide	None Known	None Known	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known	Reasonably Anticipated	X
Acetic acid	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

NTP: (National Toxicity Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Sodium hydroxide	None Known	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known	None Known
Acetic acid	None Known	None Known	None Known
Water	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Concentrated Hydrochloric acid may be toxic to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Sodium hydroxide	None Known	LC50= 45.4 mg/L Oncorhynchus mykiss 96 h	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known	None Known	None Known
Acetic acid	None Known	LC50= 75 mg/L Lepomis macrochirus 96 h LC50= 88 mg/L Pimephales promelas 96 h	EC50 = 8.8 mg/L 15 min EC50 = 8.8 mg/L 25 min EC50 = 8.8 mg/L 5 min	EC50 = 95 mg/L 24 h
Water	None Known	None Known	None Known	None Known

Chemical Name	Log Pow
Sodium hydroxide	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known
Acetic acid	= -0.31 20 °C
Water	None Known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose according to federal, state, and local regulations. If permitted, neutralize reagent with sodium bicarbonate/sodium carbonate, add slurry to large volume of water to dilute, rinse to drain with excess water.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sodium hydroxide - 1310-73-2	None Known	None Known	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base) - 101-61-1	None Known	None Known	None Known	None Known
Acetic acid - 64-19-7	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	ACETIC ACID SOLUTION >10%, <50% ACID
Hazard Class	8
UN-No	2790
Packing Group	III
Reportable Quantity (RQ)	5000

IATA

UN-No	2790
Proper Shipping Name	ACETIC ACID SOLUTION >10%, <50% ACID
Hazard Class	8
Packing Group	III

IMDG/IMO

Proper Shipping Name	ACETIC ACID SOLUTION >10%, <50% ACID
Hazard Class	8
UN-No	2790
Packing Group	III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Sodium hydroxide 1310-73-2 (0.8)	Present	X	X	1-410; 2-1972	X	KE-31487	X	X
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base) 101-61-1 (2.5)	Present	X	X	3-140	X	KE-23820	X	X
Acetic acid 64-19-7 (20)	Present	X	X	2-688	X	KE-00013	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 %
Sodium hydroxide	1310-73-2	0.8	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	101-61-1	2.5	0.1
Acetic acid	64-19-7	20	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	Yes
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
Sodium hydroxide 1310-73-2 (0.8)	None Known	None Known	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base) 101-61-1 (2.5)	None Known	None Known	None Known	None Known
Acetic acid 64-19-7 (20)	5000 lb	None Known	None Known	X
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Sodium hydroxide	1310-73-2	0.8	None Known	None Known	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	101-61-1	2.5	None Known	None Known	None Known	None Known

Acetic acid	64-19-7	20	None Known	Group II	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
Sodium hydroxide	1000 lb	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known
Acetic acid	5000 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 cancer

Chemical Name	CAS-No	California Prop. 65
Sodium hydroxide	1310-73-2	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	101-61-1	Carcinogen
Acetic acid	64-19-7	None Known
Water	7732-18-5	None Known

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium hydroxide	X	X	X	None Known	X
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	X	X	X	X	None Known
Acetic acid	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
Sodium hydroxide	None Known	None Known
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base)	None Known	None Known
Acetic acid	None Known	Mexico: TWA= 25 mg/m ³ Mexico: TWA= 10 ppm
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
Sodium hydroxide 1310-73-2 (0.8)	1 % E
4,4'-Methylenebis(N,N-dimethyl) benzenamine (Michler's Base) 101-61-1 (2.5)	0.1 %
Acetic acid 64-19-7 (20)	1 % B3 E D2B
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria



16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">1</td> </tr> </table>	Health Hazard	3	Fire Hazard	1	Reactivity	1		
Health Hazard	3								
Fire Hazard	1								
Reactivity	1								

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