Material Safety Data Sheet

Issuing Date 4/20/2011 **Revision Number** 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Ferrous Iron Reagent**

Product Code(s) 5264

Synonyms none

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

POISON! DANGER!

Emergency Overview

Flammable liquid and vapor
May be fatal if swallowed
Harmful if inhaled or absorbed through skin
Affects central nervous system
Vapor is irritating to eyes and respiratory tract
May cause adverse liver, kidney, or reproductive effects

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

OSHA Regulatory Status 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 Skin contact, Ingestion, and, Inhalation.

Acute Toxicity

Eyes Irritating to eyes.

Skin Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis.

Inhalation May cause irritation of respiratory tract. Symptoms of overexposure include dizziness, headache, drowsiness, cough.

Ingestion May cause drowsiness and dizziness. Repeat ingestion can cause headaches, gastritis, blindness, and in acute cases death.

Chronic Effects

Aggravated Medical Conditions Those with impaired liver or kidney function may be more susceptible to the effects of this substance.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
2,2`-Bipyridine	366-18-7	2
Methyl alcohol	67-56-1	4
Ethyl alcohol	64-17-5	94

4. FIRST AID MEASURES

General Advice Do not get in eyes, on skin, or on clothing.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Contact Wash skin with soap and water. If irritation develops or persists, consult physician.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel.

Ingestion Drink plenty of water. Do not induce vomiting without medical advice. If accidentally swallowed obtain immediate medical attention.

Protection of First-aiders Use personal protective equipment. 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 Flammable.
Flash Point 13°C (56°F) CC

Suitable Extinguishing Media Water spray, dry chemical, carbon dioxide (CO_2), or foam.
Explosion Data

NFPA	**Health Hazard** 1	**Flammability** 3	**Stability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 3	**Flammability** 3	**Stability** 1	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Methods for Containment Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dike far ahead of spill; use dry sand to contain the flow of material. A vapor suppressing foam may be used to reduce vapors.

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Minimize the amount spilled and supress resultant vapors.

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 and sources of ignition. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,2`-Bipyridine 366-18-7	None Known	None Known	None Known
Methyl alcohol 67-56-1	= 250 ppm STEL TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 325 mg/m³ STEL: 250 ppm
Ethyl alcohol 64-17-5	TWA: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m³

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and Body Protection Wear protective gloves/clothing. Neoprene gloves.

Respiratory Protection Use only with adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene Measures Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Light yellow
Physical State Liquid
Flash Point 13°C (56°F) CC
Freezing Point -100°C / -148°F

Odor Alcohol
pH Not applicable
Boiling Point/Range 77.1°C / 170.8°F

Flammability Limits in Air
Upper ~36% (Methanol)
Lower 3.3% (Ethanol)

Specific Gravity 0.80 @ 20
Evaporation Rate 3.6 (Butyl acetate = 1.0)
Vapor Density 1.6 @ 20°C (Air=1)

Water Solubility Completely soluble
Vapor Pressure 48 mmHg @ 20 °C (Denatured ethanol)

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions of use and storage.

Incompatible Products Oxidizing agents. Silver salts.

Conditions to Avoid Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to light.

Hazardous Decomposition Products Carbon oxides. Nitrogen oxides (NOx).

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2`-Bipyridine	100 mg/kg (Rat)	250 mg/kg (Rat)	None Known
Methyl alcohol	5628 mg/kg (Rat)	15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h
Ethyl alcohol	1501 mg/kg (Rat)	None Known	124.7 mg/L (Rat) 4 h

Chronic Toxicity

Carcinogenicity

Ethanol has been shown to be carcinogenic in long-term studies only when consumed as an alcoholic beverage. This industrial ethanol contains a denaturant (Methanol) that renders it undesirable to drink
.

Chemical Name	ACGIH	IARC	NTP	OSHA
2,2`-Bipyridine	None Known	None Known	None Known	None Known
Methyl alcohol	None Known	None Known	None Known	None Known
Ethyl alcohol	None Known	None Known	Known	None Known

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
2,2`-Bipyridine	None Known	None Known	None Known
Methyl alcohol	None Known	None Known	None Known
Ethyl alcohol	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
2,2`-Bipyridine	None Known	None Known	None Known	None Known
Methyl alcohol	None Known	LC50= 13200 mg/L Oncorhynchus mykiss 96 h LC50= 28100 mg/L Pimephales promelas 96 h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	None Known
Ethyl alcohol	None Known	LC50= 12900 mg/L Oncorhynchus mykiss 96 h LC50= 14.2 mg/L Pimephales promelas 96 h	EC50 = 34634 mg/L 30 min EC50 = 35470 mg/L 5 min	EC50 = 10800 mg/L 24 h EC50 = 9268 mg/L 48 h

Persistence and Degradability

Ethanol: When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may evaporate to a moderate extent. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily removed from the atmosphere by dry and wet deposition. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Bioaccumulation/Accumulation

This material is not expected to significantly bioaccumulate.

Mobility

Will likely be mobile in the environment due to its water solubility.

Chemical Name	Log Pow
2,2`-Bipyridine	None Known
Methyl alcohol	= -0.77
Ethyl alcohol	= -0.32

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Should not be released into the environment. Dispose of contents/container in accordance with local regulation.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
2,2`-Bipyridine - 366-18-7	None Known	None Known	None Known	None Known
Methyl alcohol - 67-56-1	None Known	None Known	None Known	None Known
Ethyl alcohol - 64-17-5	None Known	None Known	None Known	None Known

Chemical Name	California Hazardous Waste Status
Ethyl alcohol	Toxic; Ignitable

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	ETHANOL SOLUTION (94% Ethanol; 4% Methanol)
Hazard Class	3
UN-No	1170
Packing Group	II

IATA

UN-No	1170
Proper Shipping Name	ETHANOL SOLUTION (94% Ethanol; 4% Methanol)
Hazard Class	3
Packing Group	II

IMDG/IMO

Proper Shipping Name	ETHANOL SOLUTION (94% Ethanol; 4% Methanol)
Hazard Class	3
UN-No	1170
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,2`-Bipyridine 366-18-7 (2)	Present	X	X	5-3723	X	KE-12238	X	X
Methyl alcohol 67-56-1 (4)	Present	X	X	2-201	X	KE-23193	X	X
Ethyl alcohol 64-17-5 (94)	Present	X	X	2-202	X	KE-13217	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 %
2,2`-Bipyridine	366-18-7	2	None Known
Methyl alcohol	67-56-1	4	1.0
Ethyl alcohol	64-17-5	94	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	No

Clean Water Act
This product does not contain any substances regulated as 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
2,2`-Bipyridine 366-18-7 (2)	None Known	None Known	None Known	None Known
Methyl alcohol 67-56-1 (4)	None Known	None Known	None Known	None Known
Ethyl alcohol 64-17-5 (94)	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 substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
2,2`-Bipyridine	366-18-7	2	None Known	None Known	None Known	None Known
Methyl alcohol	67-56-1	4	Present	Group IV	None Known	None Known
Ethyl alcohol	64-17-5	94	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
2,2`-Bipyridine	None Known	None Known

Methyl alcohol	5000 lb	None Known
Ethyl alcohol	None Known	None Known

U.S. State Regulations

California Proposition 65

WARNING! This product contains a chemcial know to the State of California to cause birth defects or other reproductive harm

Chemical Name	CAS-No	California Prop. 65
2,2`-Bipyridine	366-18-7	None Known
Methyl alcohol	67-56-1	None Known
Ethyl alcohol	64-17-5	Developmental

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
2,2`-Bipyridine	None Known	None Known	None Known	None Known	None Known
Methyl alcohol	X	X	X	X	X
Ethyl alcohol	X	X	X	None Known	X

International Regulations

Mexico - Grade

Chemical Name	Carcinogen Status	Exposure Limits
2,2`-Bipyridine	None Known	None Known
Methyl alcohol	None Known	Mexico: TWA= 200 ppm Mexico: TWA= 260 mg/m^3
Ethyl alcohol	None Known	Mexico: TWA= 1000 ppm Mexico: TWA= 1900 mg/m^3

Canada

Component	WHMIS Hazard Class
2,2`-Bipyridine 366-18-7 (2)	D1B
Methyl alcohol 67-56-1 (4)	1 % B2 D1B D2A D2B
Ethyl alcohol 64-17-5 (94)	0.1 % B2 D2B

Chemical Name	NPRI
Methyl alcohol	X

Legend

X - Listed

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol
			

Prepared By Regulatory Affairs Department

Issuing Date 4/20/2011

Revision Date 21-Apr-2011

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