

Issuing Date 4/25/2011

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Ferrous and Ferric Iron Reagent
Product Code(s) 5265
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
DANGER!
Emergency Overview
CORROSIVE

Can cause burns to any area of contact

May be fatal if inhaled, absorbed through skin, or swallowed

Appearance Pink

Physical State Liquid

Odor Unpleasant - Skunk

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 and eye contact, Ingestion, and, Inhalation.

Acute Toxicity
Eyes

Corrosive to the eyes and may cause damage. Vapors irritate the eyes. Lacrymator - causes tearing with severe irritation.

Skin

Corrosive. Causes burns. May be absorbed through the skin in toxic amounts.

Inhalation

May be fatal if inhaled. Vapors can be irritating to the nose, throat, and respiratory system. Can cause burns.

Ingestion

Toxic if swallowed. Causes irritation or burns to the digestive and respiratory tract. May cause weakness, shortness of breath, convulsions, and death.

Chronic Effects
3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
2,2'-Bipyridine	366-18-7	2
Water	7732-18-5	<30
Thioglycolic acid	68-11-1	70-80

4. FIRST AID MEASURES

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

Eye Contact Immediately flush eyes with gentle stream of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Consult a physician.

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. Consult a physician.

Ingestion DO NOT INDUCE VOMITING. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

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

Flash Point 130°C (266°F) CC for Thioglycolic acid solution

Suitable Extinguishing Media Water spray, dry chemical, carbon dioxide (CO₂), or foam.

Explosion Data

NFPA	Health Hazard 3	Flammability 1	Stability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 3	Flammability 1	Stability 2	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Wear respiratory protection. Wear protective gloves/clothing and eye/face protection. Ensure adequate ventilation. Evacuate personnel to safe areas.

Methods for Containment Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose according to federal, state, and local regulations.

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Handling Avoid contact with skin and eyes. Avoid ingestion and inhalation. Do not eat, drink, or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

Storage Keep containers tightly closed in a dry, cool, and well-ventilated place. 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
2,2'-Bipyridine 366-18-7	None Known	None Known	None Known

Water 7732-18-5	None Known	None Known	None Known
Thioglycolic acid 68-11-1	TWA: 1 ppm	None Known	TWA: 1 ppm TWA: 4 mg/m ³

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

Hygiene Measures Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pink	Odor	Unpleasant - Skunk
Physical State	Liquid	pH	1
Flash Point	130°C (266°F) CC for Thioglycolic acid solution	Autoignition Temperature	350°C (662°F) for Thioglycolic acid solution
Boiling Point/Range	120°C @ 20 mmHg for Thioglycolic acid solution		
Explosion Limits			
Upper	not known		
Lower	5.9% (Thioglycolic acid solution)		
Water Solubility	Completely miscible	Vapor Pressure	0.4 mm Hg @ 25 °C (Thioglycolic acid solution)
Vapor Density	3.18 (Air = 1)	Partition Coefficient (n-octanol/water)	Log Pow:0.059

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions of use and storage.

Incompatible Products Strong oxidizing agents. Strong acids.

Conditions to Avoid Excessive heat.

Hazardous Decomposition Products Liberates toxic hydrogen sulfide gas on decomposition with heat. Carbon oxides (COx). Sulfur oxides (SOx).

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
Water	90 mL/kg (Rat)	None Known	None Known
Thioglycolic acid	73 mg/kg (Rat)	None Known	0.21 mg/L (Rat) 4 h

Chronic Toxicity

Chemical Name	ACGIH	IARC	NTP	OSHA
2,2'-Bipyridine	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known
Thioglycolic acid	None Known	None Known	None Known	None Known

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
2,2'-Bipyridine	None Known	None Known	None Known
Water	None Known	None Known	None Known
Thioglycolic acid	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Thioglycolic acid solution is slightly toxic to fathead minnow (96-hr LC50 30 mg/l).

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
2,2'-Bipyridine	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known
Thioglycolic acid	None Known	None Known	None Known	None Known

Persistence and Degradability No information available.

Bioaccumulation/Accumulation No information available.

Chemical Name	Log Pow
2,2'-Bipyridine	None Known
Water	None Known
Thioglycolic acid	None Known

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
Water - 7732-18-5	None Known	None Known	None Known	None Known
Thioglycolic acid - 68-11-1	None Known	None Known	None Known	None Known

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	THIOGLYCOLIC ACID
Hazard Class	8
UN-No	1940
Packing Group	II

IATA

UN-No	1940
Proper Shipping Name	THIOGLYCOLIC ACID
Hazard Class	8
Packing Group	II

IMDG/IMO

Proper Shipping Name	THIOGLYCOLIC ACID
Hazard Class	8
UN-No	1940
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
Water 7732-18-5 (<30)	Present	X	X	ENCS	X	KE-35400	X	X
Thioglycolic acid 68-11-1 (70-80)	Present	X	X	2-1355	X	KE-33786	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 does not contain any 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
Water	7732-18-5	<30	None Known
Thioglycolic acid	68-11-1	70-80	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	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
Water 7732-18-5 (<30)	None Known	None Known	None Known	None Known
Thioglycolic acid 68-11-1 (70-80)	None Known	None Known	None Known	None Known

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

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

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
Water	7732-18-5	<30	None Known	None Known	None Known	None Known
Thioglycolic acid	68-11-1	70-80	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

Water	None Known	None Known
Thioglycolic acid	None Known	None Known

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
2,2'-Bipyridine	366-18-7	None Known
Water	7732-18-5	None Known
Thioglycolic acid	68-11-1	None Known

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
2,2'-Bipyridine	None Known	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known	None Known
Thioglycolic acid	X	X	X	None Known	X

International Regulations

Mexico - Grade




Chemical Name	Carcinogen Status	Exposure Limits
2,2'-Bipyridine	None Known	None Known
Water	None Known	None Known
Thioglycolic acid	None Known	Mexico: TWA= 1 ppm Mexico: TWA= 5 mg/m ³

Canada

Component	WHMIS Hazard Class
2,2'-Bipyridine 366-18-7 (2)	D1B
Water 7732-18-5 (<30)	Uncontrolled product according to WHMIS classification criteria
Thioglycolic acid 68-11-1 (70-80)	1 % D1A E



16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
 	<table border="1"> <tr> <td data-bbox="508 201 716 247">Health Hazard</td> <td data-bbox="724 201 792 247">3</td> </tr> <tr> <td data-bbox="508 249 716 296">Fire Hazard</td> <td data-bbox="724 249 792 296">1</td> </tr> <tr> <td data-bbox="508 298 716 344">Reactivity</td> <td data-bbox="724 298 792 344">2</td> </tr> </table>	Health Hazard	3	Fire Hazard	1	Reactivity	2		
Health Hazard	3								
Fire Hazard	1								
Reactivity	2								

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