

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product identifier****Product name** FERROIN INDICATOR**Other means of identification****Product Code(s)** 6410**Recommended use of the chemical and restrictions on use****Recommended Use** Use as a laboratory reagent. Laboratory chemicals. Industrial (not for food or food contact use).**Uses advised against** This product should not be used in applications other than those listed**Details of the supplier of the safety data sheet**LaMotte Company, Inc.  
802 Washington Avenue  
P.O. Box 329  
Chestertown, MD 21620 USA  
T 410-778-3100  
F 410-778-9748**Emergency telephone numbers**

(CHEM-TEL):USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

**2. HAZARDS IDENTIFICATION****OSHA Regulatory Status**

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

**EMERGENCY OVERVIEW****Hazard statements**

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Appearance** Clear Red-Orange**Physical state** liquid**Odor** Odorless**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep out of reach of children.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. IF SWALLOWED:

Drink 1 or 2 glasses of water. Call a physician immediately.

**Storage:**

Store in a well-ventilated place. Keep cool.

**Other Hazards**

Harmful to aquatic life with long lasting effects.

**3. COMPOSITION/INFORMATION ON INGREDIENTS\***

Chemical name	CAS No	Weight-%
Phenanthroline (1,10), monohydrate	5144-89-8	<0.5

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>General advice</b>	Do not get in eyes, on skin, or on clothing.
<b>Eye contact</b>	Rinse thoroughly with water as necessary. If irritation persists or develops, contact a physician.
<b>Skin contact</b>	Wash off with soap and plenty of water removing all contaminated clothes and shoes. If irritation develops or persists, consult physician.
<b>Inhalation</b>	Not expected to require first aid measures. Remove to fresh air.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. If symptoms persist or develop contact physician.
<b><u>Self-protection of the first aider</u></b>	Use personal protective equipment. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### 5. FIREFIGHTING MEASURES

##### Suitable extinguishing media

Water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), or foam.

##### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	See section 8. Avoid contact with eyes, skin and clothing. Wear protective gloves/clothing and eye/face protection.
<b>Environmental precautions</b>	See Section 12 for additional Ecological Information. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

##### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.
<b>Methods for cleaning up</b>	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). After cleaning, flush away traces with water.

#### 7. HANDLING AND STORAGE

##### Precautions for safe handling

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. Do not eat, drink, or smoke when using this product.
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**Conditions for safe storage, including any incompatibilities**

**Storage:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep from freezing. Keep out of the reach of children.

**Incompatible Products** Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****Exposure guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenanthroline (1,10), monohydrate 5144-89-8	*-	*-	Not Established

**Appropriate engineering controls**

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Wear safety glasses with side shields (or goggles).

**Skin and body protection** Gloves & Lab Coat.

**Hygiene Measures** 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

**Information on basic physical and chemical properties**

**Physical state** liquid  
**Appearance** Clear Red-Orange  
**Odor** Odorless

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	Not Applicable	
Evaporation rate		
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	ca. 1.0 (g/cm <sup>3</sup> at 20°C/68°F)	
Water solubility	No information available	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

**Other Information**

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

**10. STABILITY AND REACTIVITY**

<b>Stability</b>	Stable under normal conditions of use and storage.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Do not freeze.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	May produce the following when heated to decomposition: Carbon oxides (COx). Nitrogen oxides (NOx). Sulfur oxides (SOx).

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Component identification**

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Phenanthroline (1,10), monohydrate 5144-89-8	= 132 mg/kg ( Rat )	Not Established	Not Established

**Information on toxicological effects**

**Carcinogenicity** 1,10-Phenanthroline has been investigated a mutagen, reproductive effector. Ferrous sulfate: has been investigated a tumorigen, mutagen, reproductive effector.

Chemical name	ACGIH	IARC	NTP	OSHA
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established	Not Established

ATEmix (oral) 44,000.00 mg/kg

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Harmful to aquatic life with long lasting effects

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established

**Persistence and degradability**

No information available.

**Bioaccumulation/Accumulation**

No information available.

Chemical name	Log Pow
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods** Dispose according to federal, state, and local regulations. If permitted, dissolve in large volume of water and rinse to drain with excess water. Dispose of contents/containers in accordance with local regulations.

**Contaminated packaging** Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Phenanthroline (1,10), monohydrate 5144-89-8	*-

**14. TRANSPORT INFORMATION**

**DOT** Not regulated

**TDG** Not regulated

**MEX** Not regulated

**ICAO** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

**RID** Not regulated

**ADR** Not regulated

**ADN** Not regulated

**15. REGULATORY INFORMATION****International Inventories**

**TSCA** Complies

**DSL/NDL** Does not comply

**EINECS/ELINCS** Does not comply

**ENCS** Complies

**IECSC** Complies

**KECL** Does not comply

**PICCS** Complies

**AICS** Complies

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US 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	SARA 313 - Threshold Values %
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established	Not Established

**CERCLA**

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Phenanthroline (1,10), monohydrate 5144-89-8	*	Not Established	-

**US State Regulations****California Proposition 65**

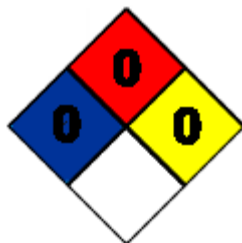
Chemical name	California Proposition 65
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established

**CPSC (Consumer Product Safety Commission) - Specially Regulated Substances****16. OTHER INFORMATION**

**NFPA**                      Health hazard 0                      Health hazard 1                      Flammability 0                      Stability 0



Health Hazard	1
Fire Hazard	0
Reactivity	0

**Prepared by**

**Issuing Date**

**Revision Date**

**Reason for revision**

**Disclaimer**

Regulatory Affairs Department

Mar-02-2017

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New GHS format

The information provided on this SDS 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 Safety Data Sheet**