Safety Data Sheet

Issuing Date Feb-10-2015 **Revision Number** 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name **Acid Phenanthroline Indicator**

Other means of identification

Product Code(s) **2776**

UN-No 2796

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).

Details of the supplier of the safety data sheet

Manufacturer Address
LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

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

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

EMERGENCY OVERVIEW

DANGER

Hazard statements
Causes severe skin burns and eye damage.

Appearance Clear, colorless **Physical state** liquid **Odor** Odorless

Precautionary Statements - Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling.

Precautionary Statements - Response
Immediately call a POISON CENTER or physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
May be harmful if swallowed Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Phenanthroline (1,10), monohydrate	5144-89-8	2.5
Sulfuric acid	7664-93-9	3-5

4. FIRST AID MEASURES

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. Excess acid on skin can be neutralized with a 2% solution of sodium bicarbonate in water. Call a physician immediately.

Inhalation Remove 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.

Self-protection of the first aider Use personal protective equipment. See section 8 for more information. 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. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical or CO_2. DO NOT USE WATER.

Unsuitable extinguishing media
Water.

Specific hazards arising from the chemical
Contact with most metals causes the formation of explosive and flammable hydrogen gas. React vigorously with water.

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

Personal precautions Ensure adequate ventilation. Avoid contact with skin, eyes, and inhalation of vapors. Use personal protective equipment. See section 8.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

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

Precautions for safe handling

Handling 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.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials such as cyanides or sulfides. Store away from strong bases or metals. Do not store near combustible materials. Keep out of the reach of children.

Incompatible Products Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenanthroline (1,10), monohydrate 5144-89-8	-	-	Not Established
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m³	TWA: 1 mg/m³	IDLH: 15 mg/m³ TWA: 1 mg/m³

Appropriate engineering controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

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

Skin and body protection Wear protective gloves/clothing.

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

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	Clear, colorless	**Odor**	Odorless

Property	**Values**	**Remarks • Method**
pH	1	No information available
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
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	No information available	
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

Stability	Stable under normal conditions of use and storage.
Hazardous Reactions	Reacts violently with water. Contact with metals may evolve flammable hydrogen gas.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Incompatible products. Direct sunlight.
Incompatible materials	Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.
Hazardous decomposition products	Hydrogen gas. Sulfur oxides (SOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phenanthroline (1,10), monohydrate 5144-89-8	= 132 mg/kg (Rat)	Not Established	Not Established
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)	Not Established	= 510 mg/m³ (Rat) 2 h

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established	Not Established
Sulfuric acid 7664-93-9	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Chronic toxicity Chronic exposure to corrosive mists or vapors may cause erosion of the teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

ATEmix (oral) 4000

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 0 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

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
Sulfuric acid 7664-93-9	Not Established	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation/Accumulation
When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical name	Log Pow
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established
Sulfuric acid 7664-93-9	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods 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.

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
Sulfuric acid 7664-93-9	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
Sulfuric acid	Not Established	Not Established	Not Established	Not Established

7664-93-9				

Chemical name	California Hazardous Waste Status
Phenanthroline (1,10), monohydrate 5144-89-8	-
Sulfuric acid 7664-93-9	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name	SULFURIC ACID (< 51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II
Reportable Quantity (RQ)	1000

IATA

Proper shipping name	SULFURIC ACID (< 51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II

IMDG/IMO

Proper shipping name	SULFURIC ACID (< 51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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 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	SARA 313 - Threshold Values %
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established
Sulfuric acid 7664-93-9	1.0

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

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
Sulfuric acid 7664-93-9	1000 lb	Not Established	Not Established	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Phenanthroline (1,10), monohydrate 5144-89-8	-	Not Established	-
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

California Proposition 65 has classified "strong inorganic acid mists containing sulfuric acid" as a chemical known to the State of California to cause cancer. This classification applies only to "inorganic mists containing sulfuric acid" and not to sulfuric acid or sulfuric acid solutions

Chemical name	California Proposition 65
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established
Sulfuric acid 7664-93-9	Carcinogen

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
Sulfuric acid 7664-93-9	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Sulfuric acid 7664-93-9	Add POISON to label, 16 CFR 1500.129 (>=10%, free or chemically unneutralized)

16. OTHER INFORMATION

NFPA **Health hazard** 3 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** W

HMIS **Health hazard** 3 **Stability** 1

Health Hazard	3
Fire Hazard	0
Reactivity	0

Prepared by Regulatory Affairs Department
Issuing Date Feb-10-2015
Revision Date Jul-17-2015
Reason for revision New US GHS format

Disclaimer

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 Material Safety Data Sheet

Safety Data Sheet

Issuing Date Feb-10-2015 **Revision Date** Jan-25-2016 **Revision Number** 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier - Labeling according to Regulations (EC) No 1272/2008

Product Code(s) **2776**
Product name **Acid Phenanthroline Indicator**

Substance or Preparation Preparation

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use
Use as a laboratory reagent
Laboratory chemicals
Industrial (not for food or food contact use)

1.3. Details of the supplier of the safety data sheet

Manufacturer
LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

Contact for timely inquiries in regards to this product:

Person Regulatory Affairs Department
E-mail address msds@lamotte.com

1.4. 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

Section 2: HAZARD(S) INDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Chronic aquatic toxicity	Category 2 - (H411)

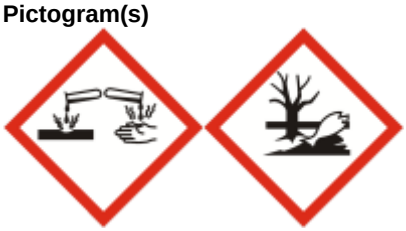
2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC
For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

Symbol(s)
C - Corrosive
N - Dangerous for the environment

R-code(s)
C;R35 - N;R51/53

2.2. Label elements
Product identifier

Pictogram(s)



Signal word DANGER

Hazard statements H314 - Causes severe skin burns and eye damage H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/protective clothing/eye protection/face protection. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P280 - Wear eye protection/ face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician. P273 - Avoid release to the environment.

2.3. Other hazards
May be harmful if swallowed Toxic to aquatic life
Irritating to eyes, respiratory system and skin
Harmful if swallowed

Section 3: COMPOSITION/ INFORMATION OF INGREDIENTS

3.1 Substances

Not Applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Reg. No
Phenanthroline (1,10), monohydrate	-	5144-89-8	2.5	T; R25 N; R50-53	Acute Tox. 3 (H301) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-
Sulfuric acid	EEC No. Present	7664-93-9	3-5	C; R35	Skin Corr. 1A (H314)	-

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. 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. Excess acid on skin can be neutralized with a 2% solution of sodium bicarbonate in water. Call a physician immediately.

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.

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.

Self-protection of the first aider Use personal protective equipment. See section 8 for more information. 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.

4.2. Most important symptoms and effects, both acute and delayed
None known

4.3. Indication of any immediate medical attention and special treatment needed
No data available

Section 5: FIREFIGHTER MEASURES

5.1. Extinguishing media

Suitable extinguishing media
Dry chemical or CO_2. DO NOT USE WATER.

Unsuitable extinguishing media
Water

5.2. Special hazards arising from the substance or mixture

Contact with most metals causes the formation of explosive and flammable hydrogen gas React vigorously with water

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation. Avoid contact with skin, eyes, and inhalation of vapors. Use personal protective equipment. See section 8.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

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.

6.4. Reference to other sections For disposal see section 13.

Methods for Containment and Clean Up Pick up and transfer to properly labelled containers.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling
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.

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.

7.2. Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials such as cyanides or sulfides. Store away from strong bases or metals. Do not store near combustible materials. Keep out of the reach of children.

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. Control parameters

Chemical name	Eu	The United Kingdom	France	Spain	Germany
Phenanthroline (1,10), monohydrate 5144-89-8	Not Established	Not Established	Not Established	-	-
Sulfuric acid 7664-93-9	Not Established	Not Established	TWA: 0.05 mg/m³ STEL: 3 mg/m³	VLA-EC: 3 mg/m³ VLA-EC VLA-ED: 1 mg/m³ VLA-ED	TWA: 0.1 mg/m³ Ceiling / Peak: 0.1 mg/m³
Chemical name	**Italy**	**Portugal**	**The Netherlands**	**Finland**	**Denmark**
Phenanthroline (1,10), monohydrate 5144-89-8	-	Not Established	-	Not Established	Not Established
Sulfuric acid 7664-93-9	-	STEL: 3 mg/m³ TWA: 0.2 mg/m³	MAC: 1 mg/m³ MAC	TWA: 0.2 mg/m³ STEL: 1 mg/m³	TWA: 1 mg/m³
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Phenanthroline (1,10), monohydrate 5144-89-8	-	Not Established	Not Established	Not Established	Not Established
Sulfuric acid 7664-93-9	STEL 2 mg/m³ STEL (inhalable fraction) MAK: 1 mg/m³ MAK (inhalable fraction)	STEL: 0.1 mg/m³	NDSCh: 3 mg/m³ NDS: 1 mg/m³	TWA: 0.1 mg/m³ TWA: 0.2 mg/m³ STEL: 0.3 mg/m³ STEL: 0.6 mg/m³	TWA: 1 mg/m³

Chemical name	European Union	United Kingdom	France	Spain	Germany
Phenanthroline (1,10), monohydrate 5144-89-8	-	-	-	-	-
Sulfuric acid 7664-93-9	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Phenanthroline (1,10),	-	-	-	-	-

monohydrate 5144-89-8					
Sulfuric acid 7664-93-9	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Phenanthroline (1,10), monohydrate 5144-89-8	-	-	-	-	-
Sulfuric acid 7664-93-9	-	-	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

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

Skin and body protection Long sleeved clothing.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state liquid

Appearance Clear, colorless **Odor** Odorless

Property	**Values**	**Remarks • Method**
pH	1	No information available
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit:		Not applicable
Lower flammability limit:		Not applicable
Vapor pressure		No information available
Vapor density		No information available
Specific gravity		No information available
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	

9.2. 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

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Reacts violently with water. Contact with metals may evolve flammable hydrogen gas.

10.4. Conditions to avoid

Excessive heat. Incompatible products. Direct sunlight.

10.5. Incompatible materials

Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.

10.6. Hazardous decomposition products

Hydrogen gas. Sulfur oxides (SOx).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation There is no data available for this product.
Eye contact There is no data available for this product.
Skin contact There is no data available for this product.
Ingestion There is no data available for this product.

The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 4,721.00 mg/kg

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phenanthroline (1,10), monohydrate	= 132 mg/kg (Rat)		
Sulfuric acid	= 2140 mg/kg (Rat)		= 510 mg/m³ (Rat) 2 h

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Sensitization No information available.

Mutagenic effects No information available.

Carcinogenic effects No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxic to aquatic life Toxic to aquatic life with long lasting effects

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Phenanthroline (1,10), monohydrate	Not Established	Not Established	Not Established
Sulfuric acid	Not Established	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

No product level data available.

12.3. Bioaccumulative potential

When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical name	Log Pow
Phenanthroline (1,10), monohydrate	Not Established
Sulfuric acid	Not Established

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

Chemical name	PBT and vPvB assessment
Phenanthroline (1,10), monohydrate	-
Sulfuric acid	-

12.6. Other adverse effects

No information available

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Phenanthroline (1,10), monohydrate	Not Established	Not Established	Not Established
Sulfuric acid	Not Established	Not Established	Not Established

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of waste product or used containers according to local regulations.

Contaminated packaging Empty remaining contents.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No	2796
14.2 Proper shipping name	SULPHURIC ACID (<51% ACID)
14.3 Hazard Class	8
14.4 Packing group	II

ICAO

14.1	
14.2 Proper shipping name	SULPHURIC ACID (<51% ACID)
14.3	
14.4	
14.5	
14.6	

IATA

14.1 UN-No	2796
14.2 Proper shipping name	SULPHURIC ACID (<51% ACID)
14.3 Hazard Class	8
14.4 Packing group	II
14.5	
14.6	

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical name	French RG number	Title
Phenanthroline (1,10), monohydrate (CAS # 5144-89-8)	-	-
Sulfuric acid (CAS # 7664-93-9)	-	-

Germany

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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

15.2. Chemical safety assessment
No chemical safety assessment has been carried out for this substance/mixture by the supplier.

Section 16: ANY OTHER RELEVANT INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Text of R phrases mentioned in Section 3
R35 - Causes severe burns
R25 - Toxic if swallowed
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under section 3
H301 - Toxic if swallowed
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H314 - Causes severe skin burns and eye damage

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION
TWA - TWA (time-weighted average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value

Prepared by	Regulatory Affairs Department
Issuing Date	Feb-10-2015
Revision Date	Jan-25-2016
Recommendations on Use	Laboratory chemicals Industrial (not for food or food contact use) Restricted to professional users

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
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

Safety Data Sheet

Issuing Date Feb-10-2015 **Revision Number** 0

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product name **IRON REDUCING REAGENT**

Other means of identification

Product Code(s) **2777**
UN-No 3260

Recommended use of the chemical and restrictions on use

Recommended Use Test kit reagent. Industrial (not for food or food contact use). Laboratory chemicals.

Details of the supplier of the safety data sheet

Manufacturer Address
LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

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

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 1

EMERGENCY OVERVIEW

DANGER

Hazard statements
Harmful if swallowed. Causes serious eye damage.

Appearance Gray **Physical state** powder **Odor** Slight Sulphurous

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell, Rinse mouth

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
May be harmful in contact with skin Toxic to aquatic life with long lasting effects. Contains sulfites - may produce allergic reaction in highly sensitive individuals

Unknown Acute Toxicity
3.3% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Metal dust	-	0 - 10%
Sodium sulfite	7757-83-7	1-5
Sodium metabisulfite	7681-57-4	90-95

LaMotte Company proprietary formulation under the State of New Jersey Trade Secret Protection Law, assigned the NJTSRN 80100291-5064p, and may be disclosed only in a medical emergency

4. FIRST AID MEASURES

FIRST AID MEASURES

General advice Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper 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.

Inhalation Move to fresh air. If symptoms arise, call a physician.

Ingestion Drink plenty of water. Clean mouth with water. Never give anything by mouth to an unconscious person. Consult a physician. Rinse mouth.

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.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), 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

Personal precautions Refer to Section 8.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Sweep up in a manner that does not dispurse dust and shovel into suitable containers for disposal. Dispose according to federal, state, and local regulations.

Methods for cleaning up Use personal protective equipment. Avoid dust formation. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

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.

Incompatible Products Acids. Alkalis. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Metal dust	-	-	None Established
Sodium sulfite 7757-83-7	-	-	None Established
Sodium metabisulfite 7681-57-4	TWA: 5 mg/m^3	-	TWA: 5 mg/m^3

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face Protection Safety glasses with side-shields. Goggles.

Skin and body protection Wear protective gloves/clothing.

Respiratory protection Maintain adequate ventilation.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state powder
Appearance Gray **Odor** Slight Sulphurous

Property	Values	Remarks • Method

pH	5	(1 tablet in 10mL of water)
Melting point/freezing point	150 °C	Sodium metabisulfite
Boiling Point/Range	No information available	
Flash point	No information available	
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	No information available	
Water solubility	Soluble in water	
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

Stability	Stable under normal conditions of use and storage.
Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Exposure to air or moisture over prolonged periods. Keep away from children.
Incompatible materials	Acids. Alkalis. Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides (COx). Sulfur oxides (SOx). Sodium oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Metal dust	None Established	None Established	None Established
Sodium sulfite 7757-83-7	= 820 mg/kg (Rat)	None Established	> 22 mg/L (Rat) 1 h
Sodium metabisulfite 7681-57-4	= 1310 mg/kg (Rat)	> 2 g/kg (Rat)	None Established

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Metal dust	-	None Established	None Established	-
Sodium sulfite 7757-83-7	-	Group 3	None Established	-
Sodium metabisulfite	-	Group 3	None Established	-

7681-57-4				

ATEmix (oral) 528 mg/kg
ATEmix (dermal) 2112 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 0.3% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Metal dust	0.09 - 0.125: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.11 - 0.271: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	0.211 - 0.269: 96 h Pimephales promelas mg/L LC50 semi-static 2.16 - 3.05: 96 h Pimephales promelas mg/L LC50 flow-through 0.24: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.41: 96 h Oncorhynchus mykiss mg/L LC50 static 0.45: 96 h Cyprinus carpio mg/L LC50 semi-static 0.59: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 2.66: 96 h Pimephales promelas mg/L LC50 static 3.5: 96 h Lepomis macrochirus mg/L LC50 static 30: 96 h Cyprinus carpio mg/L LC50 7.8: 96 h Cyprinus carpio mg/L LC50 static	0.139 - 0.908: 48 h Daphnia magna mg/L EC50 Static
Sodium sulfite 7757-83-7	None Established	220 - 460: 96 h Leuciscus idus mg/L LC50 static	330: 24 h Psammechinus miliaris mg/L LC50
Sodium metabisulfite 7681-57-4	40: 96 h Desmodesmus subspicatus mg/L EC50 48: 72 h Desmodesmus subspicatus mg/L EC50	32: 96 h Lepomis macrochirus mg/L LC50 static	89: 24 h Daphnia magna Straus mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
Metal dust	None Established
Sodium sulfite 7757-83-7	-4
Sodium metabisulfite 7681-57-4	-3.7

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method Dispose of contents/container in accordance with local regulation. This material, as supplied, is not a hazardous waste according to state and Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste pursuant to Federal regulations, and the applicable state requirements for the specific area of disposal. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Metal dust	None Established	-	None Established	None Established

Sodium sulfite 7757-83-7	None Established	-	None Established	None Established
Sodium metabisulfite 7681-57-4	None Established	-	None Established	None Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Metal dust	None Established	None Established	None Established	None Established
Sodium sulfite 7757-83-7	None Established	None Established	None Established	None Established
Sodium metabisulfite 7681-57-4	None Established	None Established	None Established	None Established

Chemical name	California Hazardous Waste Status
Metal dust	-
Sodium sulfite 7757-83-7	-
Sodium metabisulfite 7681-57-4	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(SODIUM DISULPHITE)
UN-No 3260
Hazard Class 8
Packing group III

IATA

Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(SODIUM DISULPHITE)
UN-No 3260
Hazard Class 8
Packing group III

IMDG/IMO

Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(SODIUM DISULPHITE)
UN-No 3260
Hazard Class 8

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
PICCS Complies
AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU 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

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	SARA 313 - Threshold Values %
Metal dust	1.0
Sodium sulfite 7757-83-7	None Established
Sodium metabisulfite 7681-57-4	None Established

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	Yes

Clean Water Act

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Metal dust	None Established	X	X	None Established
Sodium sulfite 7757-83-7	None Established	None Established	None Established	None Established
Sodium metabisulfite 7681-57-4	None Established	None Established	None Established	None Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Metal dust	1000 lb	None Established	RQ 454 kg final RQ RQ 1000 lb final RQ
Sodium sulfite 7757-83-7	-	None Established	-
Sodium metabisulfite 7681-57-4	-	None Established	-

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical name	California Prop. 65
Metal dust	None Established
Sodium sulfite 7757-83-7	None Established
Sodium metabisulfite 7681-57-4	None Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Metal dust	X	X	X

Sodium sulfite 7757-83-7	None Established	None Established	None Established
Sodium metabisulfite 7681-57-4	X	X	X

16. OTHER INFORMATION

NFPA **Health hazard** 2 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** N/A

HMIS **Health hazard** 2 **Flammability** 0 **Physical hazards** 0 **Personal precautions** N/A

Health Hazard	2
Fire Hazard	0
Reactivity	0

Prepared by Regulatory Affairs Department
Issuing Date Feb-10-2015
Revision Date Feb-10-2015
Reason for revision New US GHS format

Disclaimer

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 MSDS

Safety Data Sheet

Issuing Date Jan-25-2016 **Revision Date** Jan-25-2016 **Revision Number** 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier - Labeling according to Regulations (EC) No 1272/2008

Product Code(s) **2777**
Product name **Iron Reducing Reagent**

Synonyms none
Substance or Preparation Preparation
Contains Sodium metabisulfite, Sodium sulfite

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Use as a laboratory reagent
Industrial (not for food or food contact use)
Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Manufacturer LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

Contact for timely inquiries in regards to this product:

Person Regulatory Affairs Department
E-mail address msds@lamotte.com

1.4. 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

Section 2: HAZARD(S) INDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Acute toxicity - Oral	Category 4 - (H302)
Serious eye damage/eye irritation	Category 1 - (H318)
Chronic aquatic toxicity	Category 2 - (H411)

2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC
For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

Symbol(s)
Xn - Harmful
N - Dangerous for the environment

R-code(s)
Xn;R22 - Xi;R41 - R31 - N;R51/53

2.2. Label elements

Pictogram(s)

Signal word DANGER

Hazard statements H302 - Harmful if swallowed H318 - Causes serious eye damage H411 - Toxic to aquatic life with long lasting effects Contains Sodium metabisulfite, Sodium sulfite

EU Specific Hazard Statements
EUH031 - Contact with acids liberates toxic gas

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear eye protection/ face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician. P273 - Avoid release to the environment.

2.3. Other hazards
May be harmful in contact with skin. Toxic to aquatic life.

Section 3: COMPOSITION/ INFORMATION OF INGREDIENTS

3.1 Substances

Not Applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Reg. No
Metal dust	Listed	Proprietary	2	N; R50-53 F; R15-17 N; R50-53	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Pyr. Sol. 1 (H250) Water-react. 1 (H260)	-
Sodium metabisulfite	EEC No. Present	7681-57-4	90-95	Xn; R22 R31 Xi; R41	Acute Tox. 4 (H302) Eye Dam. 1 (H318) (EUH031)	-

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

NOTE
*The exact percentage (concentration) of composition has been withheld as a trade secret If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. If symptoms arise, call 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.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Ingestion	Drink plenty of water. Clean mouth with water. Never give anything by mouth to an unconscious person. Consult a physician. Rinse mouth.
Self-protection of the first aider	Use personal protective equipment. See section 8 for more information. 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.

4.2. Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3. Indication of any immediate medical attention and special treatment needed
No data available

Section 5: FIREFIGHTER MEASURES

5.1. Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Unsuitable extinguishing media
No information available

5.2. Special hazards arising from the substance or mixture
No information available

5.3. Advice for firefighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
See section 8.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment	Sweep up in a manner that does not dispurse dust and shovel into suitable containers for disposal. Dispose according to federal, state, and local regulations.

Methods for cleaning up Use personal protective equipment. Avoid dust formation. After cleaning, flush away traces with water.

6.4. Reference to other sections For disposal see section 13.

Methods for Containment and Clean Up Pick up and transfer to properly labelled containers.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling
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.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials. Keep out of the reach of children.

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. Control parameters

Chemical name	Eu	The United Kingdom	France	Spain	Germany
Metal dust	Not Established	Not Established	Not Established	-	TWA: 0.1 mg/m³ TWA: 2 mg/m³ Ceiling / Peak: 0.4 mg/m³ Ceiling / Peak: 4 mg/m³
Sodium metabisulfite 7681-57-4	Not Established	STEL: 15 mg/m³ TWA: 5 mg/m³	TWA: 5 mg/m³	VLA-ED: 5 mg/m³ VLA-ED	-
Chemical name	**Italy**	**Portugal**	**The Netherlands**	**Finland**	**Denmark**
Metal dust	-	Not Established	-	Not Established	Not Established
Sodium metabisulfite 7681-57-4	-	TWA: 5 mg/m³	MAC: 5 mg/m³ MAC	Not Established	TWA: 5 mg/m³
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Metal dust	-	STEL: 0.4 mg/m³ STEL: 4 mg/m³	Not Established	Not Established	Not Established
Sodium metabisulfite 7681-57-4	-	Not Established	Not Established	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 5 mg/m³

Chemical name	European Union	United Kingdom	France	Spain	Germany
Metal dust	-	-	-	-	-
Sodium metabisulfite 7681-57-4	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Metal dust	-	-	-	-	-
Sodium metabisulfite 7681-57-4	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**

Metal dust	-	-	-	-	-
Sodium metabisulfite 7681-57-4	-	-	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Personal protective equipment

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

Skin and body protection Long sleeved clothing.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state powder
Appearance Gray **Odor** Slight Sulphurous

Property	**Values**	**Remarks • Method**
pH	5	(1 tablet in 10mL of water)
Melting point / freezing point	150 °C	Sodium metabisulfite
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit:		Not applicable
Lower flammability limit:		Not applicable
Vapor pressure		No information available
Vapor density		No information available
Specific gravity		No information available
Water solubility	Soluble in water	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	

9.2. 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

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

10.4. Conditions to avoid

Excessive heat. Exposure to air or moisture over prolonged periods. Keep away from children.

10.5. Incompatible materials

Acids. Alkalis. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (COx). Sulfur oxides (SOx). Sodium oxides.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation There is no data available for this product.
Eye contact There is no data available for this product.
Skin contact There is no data available for this product.
Ingestion There is no data available for this product.

The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 1,317.00 mg/kg
ATEmix (dermal) 2,112.00 mg/kg

Oral LD50 Oral LD50
Dermal LD50 Dermal LD50 No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium metabisulfite	= 1310 mg/kg (Rat)	> 2 g/kg (Rat)	

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Sensitization No information available.

Mutagenic effects No information available.

Carcinogenic effects No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxic to aquatic life Toxic to aquatic life with long lasting effects

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Metal dust	0.09 - 0.125: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.11 - 0.271: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	0.211 - 0.269: 96 h Pimephales promelas mg/L LC50 semi-static 2.16 - 3.05: 96 h Pimephales promelas mg/L LC50 flow-through 0.24: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.41: 96 h Oncorhynchus mykiss mg/L LC50 static 0.45: 96 h Cyprinus carpio mg/L LC50 semi-static 0.59: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 2.66: 96 h Pimephales promelas mg/L LC50 static 3.5: 96 h Lepomis macrochirus mg/L LC50 static 30: 96 h Cyprinus carpio mg/L LC50 7.8: 96 h Cyprinus carpio mg/L LC50 static	0.139 - 0.908: 48 h Daphnia magna mg/L EC50 Static
Sodium metabisulfite	40: 96 h Desmodesmus subspicatus mg/L EC50 48: 72 h Desmodesmus subspicatus mg/L EC50	32: 96 h Lepomis macrochirus mg/L LC50 static	89: 24 h Daphnia magna Straus mg/L EC50

12.2. Persistence and degradability

No product level data available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Log Pow
Metal dust	Not Established
Sodium metabisulfite	-3.7

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

Chemical name	PBT and vPvB assessment
Metal dust	-
Sodium metabisulfite	-

12.6. Other adverse effects

No information available

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Metal dust	Not Established	Not Established	Not Established
Sodium metabisulfite	Not Established	Not Established	Not Established

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of waste product or used containers according to local regulations.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No 3260
14.2 Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Sodium Disulphite)
14.3 Hazard Class 8
14.4 Packing group III

ICAO

14.1
14.2 Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Sodium Disulphite)
14.3 Hazard Class 8
14.4 Packing group III
14.5
14.6

IATA

14.1 UN-No 3260
14.2 Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Sodium Disulphite)
14.3 Hazard Class 8
14.4 Packing group III
14.5
14.6

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical name	French RG number	Title
Metal dust (CAS #)	-	-
Sodium metabisulfite (CAS # 7681-57-4)	-	-

Germany

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies
IECSC Complies

KECL	Complies
PICCS	Complies
AICS	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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

15.2. Chemical safety assessment
No chemical safety assessment has been carried out for this substance/mixture by the supplier.

Section 16: ANY OTHER RELEVANT INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Text of R phrases mentioned in Section 3
R31 - Contact with acids liberates toxic gas
R41 - Risk of serious damage to eyes
R22 - Harmful if swallowed
R17 - Spontaneously flammable in air
R15 - Contact with water liberates extremely flammable gases
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under section 3
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H250 - Catches fire spontaneously if exposed to air
H260 - In contact with water releases flammable gases which may ignite spontaneously
H302 - Harmful if swallowed
H318 - Causes serious eye damage
EUH031 - Contact with acids liberates toxic gas

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION
TWA - TWA (time-weighted average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value

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Recommendations on Use	Laboratory chemicals Industrial (not for food or food contact use) Restricted to professional users

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
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