SECTION 1: IDENTIFICATION

1.1 Product identifier

Product Name	Hematoxylin

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

Identified uses	For research use only. Not for diagnostic use.

1.3 Details of the supplier of the data sheet

Company	Molecular Instruments, Inc. 5015 Eagle Rock Blvd Suite 301 Los Angeles, CA 90041
Telephone	+1 626 210 2600

SECTION 2. HAZARDS IDENTIFICATION

This safety data sheet complies with the requirements of Regulation EC 1907/2006.

2.1 Classification of the substance or mixture

GHS Classification

Health Hazards

Acute toxicity (Oral)	Category 4
Specific target organ toxicity (Repeated exposure)	Category 2

2.2 Label elements including precautionary statements

Signal Word		Warning
Hazard Statements		
	H302	Harmful if swallowed.
	H373	May cause damage to organs (kidney) through prolonged or repeated exposure if swallowed.
Precautionary Statements		
	P260	Do not breathe mist or vapors.
	P264	Wash skin thoroughly after handling.
	P270	Do not eat, drink, or smoke when using this product.
	P301+P312+P330	If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.
	P314	Get medical advice/attention if you feel unwell.
	P501	Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards
None.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Characterization
Not applicable.

3.2 Dangerous Components

Chemical Name	CAS No	EINECS No	Weight %
Ethylene glycol	107-21-1	203-473-3	>= 10 - < 15
Acetic acid	64-19-7	200-580-7	>= 0.5 - < 2.5

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General information	Show this material safety data sheet to the doctor in attendance.
Inhalation	After inhalation: fresh air. Call in physician.
Ingestion	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
Skin Contact	In case of skin contact: take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.
Eye Contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in 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. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media
Alcohol-resistant foam, water spray, carbon dioxide (CO_2), or dry chemical.

5.2 Special hazards
Do not allow run-off from fire fighting toenter drains or water courses. Carbon oxides, mixture with combustible ingredients, development of hazardous combustion gases or vapors possible in the event of fire.

5.3 Advice for fire fighters	Wear self-contained breathing apparatus and protective suit.
5.4 Further information	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental Precautions

Should not be released into the environment. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and clean up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see Sections 7 and 10). Take up with liquid-absorbent and neutralizing material. Dispose of properly. Avoid dust formation. Clean up affected area.

6.4 Reference to other sections

Wear personal protective equipment as described in Section 8 of the safety data sheet.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide good ventilation in the process area. Always wear recommended personal protective equipment. Avoid contact with skin, eyes, and clothing.

7.2 Conditions for safe storage, including any incompatibles

Store at 2-8°C under sterile conditions. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from food and drink.

7.3 Specific end use(s)

For research use only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Limits

Components	CAS No	Value type (Form of exposure)	Control parameters/Permissible concentration	Basis
Ethylene glycol	107-21-1	TWA	25 ppm	USA ACGIH
		STEL	50 ppm	USA ACGIH
		STEL	10 mg/m^3	USA ACGIH
		C	40 ppm 100 mg/m^3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Acetic acid	64-19-7	TWA	10 ppm	USA ACGIH
		STEL	15 ppm	USA ACGIH
		TWA	10 ppm 25 mg/m^3	USA NIOSH
		ST	15 ppm 37 mg/m^3	USA NIOSH
		TWA	10 ppm 25 mg/m^3	USA OSHA
		PEL	10 ppm 25 mg/m^3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	40 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		STEL	15 ppm 37 mg/m^3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Personal Protective Equipment	Wear protective gloves/protective clothing and eye/face protection. Only wear fitting, comfortable, and clean protective clothing.
Respiratory Protection	With correct and proper use, and under normal conditions, breathing protection is not required.
Hand Protection	Tested protective gloves are to be worn: DIN-/EN-Norms: EN ISO 374.
Eye Protection	Tightly sealed safety glasses.
Skin and Body Protection	Wear suitable protective clothing.
Environmental exposure controls	Refer to Section 6. No further action is necessary.

Environmental Exposure Controls
Should not be released in the environment. Prevent product from entering drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance: Aqueous solution.

9.2 Other information
No data available.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available.

10.2 Stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4 Conditions to avoid
No data available.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
In the event of fire, see Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute Toxicity (Oral): No data available.

Acute Toxicity (Dermal):	No data available.
Acute Toxicity (Inhalation):	No data available.
Skin Corrosion/Irritation	No data available.
Serious Eye Damage/Irritation	No data available.
Respiratory or Skin Sensitization	No data available.
Germ Cell Mutagenicity	No data available.
Carcinogenicity	IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC. NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
Reproductive Toxicity	No data available.
Specific Target Organ Toxicity (Single Exposure)	No data available.
Specific Target Organ Toxicity (Repeated Exposure)	Mixture may cause damage to organs through prolonged or repeated exposure.
Aspiration Hazard	No data available.

11.2 Additional information

When ingested, early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Exposure to and/or consumption of alcohol may increase toxic effects. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice. Central nervous system irregularities based on human evidence. Stomach irregularities based on human evidence.

Components

Ethylene glycol

Acute toxicity

Acute toxicity estimate (Oral)	500.1 mg/kg
Remarks: Classified according to Regulation	(EU) 1272/2008, Annex VI (Table 3.1/3.2)
LC50 Inhalation Rat	6 h → 2.5 mg/l (aerosol)
Remarks: (ECHA)	
LD50 Dermal Mouse	> 3500 mg/kg
Remarks: (ECHA)	

Skin corrosion/irritation

Skin Rabbit	No skin irritation (20 h)
Remarks: (ECHA)	

Serious eye damage/eye irritation

Eyes Rabbit	No eye irritation (24 h)
Remarks: (ECHA)	

Respiratory or skin sensitization

Maximization Test – Guinea pig	Negative
(OECD Test Guideline 406)	

Germ cell mutagenicity

Test type: Ames test	
Test system: Escherichia coli/Salmonella typhimurium	Negative
Test type: Mutagenicity (mammal cell test): chromosome aberration	
Test system: Chinese hamster ovary cells	Negative
Species: Rat	Negative
Remarks: (ECHA)	

Carcinogenicity

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Reproductive toxicity

Laboratory experiments have shown teratogenic effects. Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity – single exposure

No data available.

Specific target organ toxicity – repeated exposure

Oral – may cause damage to organs through prolonged or repeated exposure (kidney).

Aspiration hazard

No data available.

Acetic acid

Acute toxicity

LD50 Oral Rat	3310 mg/kg
Remarks: (RTECS)	
LC50 Inhalation Mouse	2819 mg/l (4 h / vapor)
Remarks: (RTECS)	
Dermal	No data available.

Skin corrosion/irritation

Skin Rabbit	Causes burns (4 h)
(OECD Test Guideline 404)	

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2).

Serious eye damage/eye irritation

Eyes Rabbit	Causes burns (4 h)
(OECD Test Guideline 405)	

Remarks: (IUCLID)	Causes serious eye damage.

Respiratory or skin sensitization
No data available.

Germ cell mutagenicity

Test type: Ames test	
Test system: Salmonella typhimurium	Negative
Test type: Mutagenicity (mammal cell test): chromosome aberration	
Test system: Chinese hamster ovary cells	Negative
Method: Mutagenicity (micronucleus test)	
Species: Rat bone marrow	Negative

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

Specific target organ toxicity – single exposure
No data available.

Specific target organ toxicity – repeated exposure
No data available.

Aspiration hazard
No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulation potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Endocrine disrupting properties
No data available.

12.7 Other adverse effects

No data available.

Components

Ethylene glycol

Toxicity to fish	Static test LC50 – P. promelas → 72860 mg/l (96 h) (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 – D. magna → 100 mg/l 48 (h) (OECD Test Guideline 202)
Toxicity to algae	Static test NOEC – P. subcapitata → 100 mg/l (72 h) (OECD Test Guideline 201)
Toxicity to fish (Chronic toxicity)	Flow-through test LC50 – M. peninsulae → 1500 mg/l (28 d) (ECHA) This value is given in analogy to the following substances: triethylene glycol.
Toxicity to daphnia and other aquatic invertebrates (chronic toxicity)	Semi-static test NOEC – C. dubia → 8590 mg/l (7 d) (US-EPA)

Acetic acid

Toxicity to fish	Semi-static test LC50 – O. mykiss → 1000 mg/l (96 h) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 – D. magna → 1000 mg/l 48 (h) (OECD Test Guideline 202)
Toxicity to algae	Static test EC50 – S. costatum → 1000 mg/l (72 h) (ISO 10253)
Toxicity to bacteria	EC5 – P. putida → 2850 mg/l (16 h) Remarks: neutral (maximum permissible toxic concentration) (Lit.) Microtox test EC50 – P. phosphoreum → 11 mg/l (15 min) Remarks: (IUCLID)

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Avoid release into the environment. Disposal of contents and containers must comply with all requirements of local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

SECTION 14. TRANSPORT INFORMATION

IATA/ADR/DOT-US/IMDG

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable

14.4 Packaging group	Not applicable
14.5 Environmental hazards	Not applicable

SECTION 15. REGULATORY INFORMATION

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

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312

Acute Health Hazard
Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ethylene glycol	>= 20 - < 30%

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Ethylene glycol	>= 20 - < 30%

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F). The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

Ethylene glycol	>= 20 - < 30%
Acetic acid	>= 1 - < 5%

Clean Water Act

The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A:

Acetic acid	>= 1 - < 5%
Aluminium sulphate hydrate	>= 0.1 - < 1%

The following Hazardous Chemicals are listed under the U.S. Clean Water Act, Section 311, Table 117.3

Acetic acid	>= 1 - < 5%
Aluminium sulphate hydrate	>= 0.1 - < 1%

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307. This product does not contain any priority pollutants related to the U.S. Clean Water Act.

US State Regulations

Chemical Name	Massachusetts -RTK	Pennsylvania-RTK	Main Chemicals of High Concern	Vermont Chemicals of High Concern	Washington Chemicals of High Concern
Ethylene glycol	Listed	Listed	-	Listed	Listed
Acetic acid	Listed	Listed	-	-	-
Aluminium sulphate hydrate	-	Listed	-	-	-

California Proposition 65

This product can expose you to chemicals including ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

TSCA	All substances listed as active on the TSCA inventory

TSCA List

No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Disclaimer

The above information is believed to be correct but shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since Molecular Instruments, Inc. cannot control the actual methods, volumes, or conditions of use, Molecular Instruments, Inc. shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. The information in this safety data sheet (SDS) does not constitute a warranty, expressed or implied, including any implied warranty of merchantability or fitness for any particular purpose. See www.hcrimaging.com/legal/terms for our terms of sale.