Material Safety Data Sheet
Hematoxylin Stain Solution (Gill Formulation #2)

ACC# 88030

Section 1 - Chemical Product and Company Identification

MSDS Name: Hematoxylin Stain Solution (Gill Formulation #2)
Catalog Numbers: CS401-1D, CS401-4D
Synonyms: Gill Hematoxylin
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	88.596	231-791-2
107-21-1	Ethylene glycol	25	203-473-3
7784-31-8	Aluminum sulfate octadecahydrate	7	unlisted
64-19-7	Acetic acid	4	200-580-7
517-28-2	Hematoxylin	0.4	208-237-3
7681-55-2	Sodium iodate	0.004	231-672-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: not available liquid.
Warning! Causes eye, skin, and respiratory tract irritation. May be harmful if swallowed or absorbed through the skin. May cause central nervous system effects. May cause kidney damage.
Target Organs: Kidneys, central nervous system, eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes eye irritation. May cause chemical conjunctivitis.
Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands.
Ingestion: May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Ingestion produces toxicity which follows a 3 step progression. Stage 1 involves the central nervous system producing eye muscle paralysis, convulsions, and coma. Metabolic acidosis and swelling may occur. Stage 2 involves the cardiopulmonary system which may cause high blood pressure, rapid heart beat, and possible cardiac failure. Stage 3 results in kidney damage. Rapidly absorbed from the gastrointestinal tract. Causes digestive tract irritation.
Inhalation: Causes respiratory tract irritation. May cause effects similar to those described for ingestion. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs.
Chronic: May cause kidney injury. Acetic acid can cause occupational asthma. One case of a delayed asthmatic response to glacial acetic acid has been reported in a person with bronchial asthma. Skin sensitization to acetic acid is rare, but has occurred. Repeated excessive exposure to ethylene glycol may cause irritation of the upper respiratory tract. In humans, effects have been reported on the central nervous system, including nystagmus (involuntary, rapid, rhythmic movement of the eyeball).

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Ethylene glycol	100 mg/m3 Ceiling (aerosol only)	none listed	none listed
Aluminum sulfate octadecahydrate	2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts).	2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts).	none listed
Acetic acid	10 ppm TWA; 15 ppm STEL	10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH	10 ppm TWA; 25 mg/m3 TWA
Hematoxylin	none listed	none listed	none listed
Sodium iodate	none listed	none listed	none listed

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Ethylene glycol: No OSHA Vacated PELs are listed for this chemical. Aluminum sulfate octadecahydrate: No OSHA Vacated PELs are listed for this chemical. Acetic acid: 10 ppm TWA; 25 mg/m3 TWA Hematoxylin: No OSHA Vacated PELs are listed for this chemical. Sodium iodate: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: not available
Odor: none reported
pH: 2.1
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Not available.
Specific Gravity/Density: Not available.
Molecular Formula: Solution
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, isocyanates, aliphatic amines, caustics.
Hazardous Decomposition Products: Carbon monoxide, oxides of sulfur, carbon dioxide, aluminum oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 107-21-1: KW2975000
CAS# 7784-31-8: WS5697000
CAS# 64-19-7: AF1225000
CAS# 517-28-2: MH7875000
CAS# 7681-55-2: NN1400000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
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CAS# 107-21-1:
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, eye: 100 mg/1H Mild;
Draize test, rabbit, eye: 0.012 ppm/3D;
Draize test, rabbit, eye: 1440 mg/6H Moderate;
Oral, mouse: LD50 = 5500 mg/kg;
Oral, rat: LD50 = 4700 mg/kg;
Skin, rabbit: LD50 = 9530 uL/kg;
.

CAS# 7784-31-8:
Oral, mouse: LD50 = 980 mg/kg;
Oral, rat: LD50 = 370 mg/kg;
.

CAS# 64-19-7:
Draize test, rabbit, skin: 50 mg/24H Mild;
Inhalation, mouse: LC50 = 5620 ppm/1H;
Oral, rat: LD50 = 3310 mg/kg;
Skin, rabbit: LD50 = 1060 uL/kg;
.

CAS# 517-28-2:
.

CAS# 7681-55-2:
Oral, mouse: LD50 = 505 mg/kg;
.
Ethylene glycol is more acutely toxic for humans than for laboratory animals by ingestion. The single oral lethal dose for humans has been estimated at 1.4 ml/kg (1.56 g/kg) or about 100 ml (111 g) for an adult.
Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 107-21-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7784-31-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 517-28-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7681-55-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: An expert panel convened by the NTP's Center for the Evaluation of Risks to Human Reproduction concluded 2/13/03 that developmental and reproductive risks stemming from exposure to the chemicals propylene glycol and ethylene glycol are negligible.No teratogenic effects were observed among the offspring of mice, rats, or rabbits that had been given very large doses of apple cider vinegar (containing acetic acid) during pregnancy.Acetic acid treatment of suckling rats (via maternal administration) was associated with abnormalities of behavioral testing.
Reproductive Effects: Acetic acid effects on Fertility: male index, itt-rat TDLo=400 mg/kg.
Mutagenicity: Sister Chromatid Exchange: Human, Lymphocyte = 5 mmol/L.; Unscheduled DNA Synthesis: Administration onto the skin, mouse = 79279 ug/kg.; Cytogenetic Analysis: Hamster, Ovary = 10 mmol/L.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not Regulated	Not Regulated
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 107-21-1 is listed on the TSCA inventory.
CAS# 7784-31-8 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).
CAS# 64-19-7 is listed on the TSCA inventory.
CAS# 517-28-2 is listed on the TSCA inventory.
CAS# 7681-55-2 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 107-21-1: 5000 lb final RQ; 2270 kg final RQ CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 107-21-1: immediate, delayed.
CAS # 7784-31-8: immediate, delayed.
CAS # 64-19-7: immediate, delayed, fire.
CAS # 7681-55-2: immediate, fire.

Section 313

This material contains Ethylene glycol (CAS# 107-21-1, 25%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 107-21-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 64-19-7 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 107-21-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 7784-31-8 can be found on the following state right to know lists: California, (listed as Aluminum, soluble salts), Pennsylvania, (listed as Aluminum, soluble salts), Minnesota, (listed as Aluminum, soluble salts).
CAS# 64-19-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 517-28-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 7681-55-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 22 Harmful if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.
CAS# 107-21-1: 0
CAS# 7784-31-8: No information available.
CAS# 64-19-7: 1
CAS# 517-28-2: 1
CAS# 7681-55-2: 1

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 107-21-1 is listed on Canada's DSL List.
CAS# 64-19-7 is listed on Canada's DSL List.
CAS# 517-28-2 is listed on Canada's DSL List.
CAS# 7681-55-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 107-21-1 is listed on the Canadian Ingredient Disclosure List.
CAS# 7784-31-8 (listed as Aluminum, soluble salts) is listed on the Canadian Ingredient Disclosure List.
CAS# 64-19-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 10/22/1997
Revision #5 Date: 8/19/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.