Material Safety Data Sheet

HARLECO® Hematoxylin, Gill Solution I, For Histology and Cytology

Section 1. Product and Company Identification

Product name : HARLECO® Hematoxylin, Gill Solution I, For Histology and Cytology

Product code : 65065

Synonym : Dye solution

Material uses : Industrial applications: Laboratory Reagent

Manufacturer : EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday - Friday: 8:00 - 5:00 PM

Validation date : **9/18/2007.**

Print date : 9/18/2007.

In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state : Liquid.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : DANGER!

HARMFUL OR FATAL IF SWALLOWED.
HARMFUL IF INHALED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, TEETH

Do not ingest. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes : Irritating to eyes.

Skin : Harmful in contact with skin. Irritating to skin.

Inhalation : Toxic by inhalation. Irritating to respiratory system.

Ingestion : Very toxic if swallowed.

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

Continued on Next Page

Section 3. Composition/Information on Ingredients

United States

Name	CAS number	% by Weight
Hematoxylin	517-28-2	0.2
Sodium Iodate	7681-55-2	20
Ethylene Glycol	107-21-1	25
Aluminum Sulfate	16828-11-8	1.76
Acetic Acid	64-19-7	2
Water	7732-18-5	>52

Section 4. First Aid Measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.

Skin contact : Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Ingestion : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire Fighting Measures

Flammability of the product : No specific hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Not available.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on explosion hazards : Development of hazardous combustion gases or vapors possible in the event of fire.

Continued on Next Page

Section 6. Accidental Release Measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Section 7. Handling and Storage

Handling : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Product name	Exposure limits
United States	
Ethylene Glycol	**ACGIH TLV (United States, 1/2006). Notes: Refers to Appendix A -- Carcinogens. See Notice of Intended changes.** CEIL: 100 mg/m^3 Form: Aerosol **OSHA PEL 1989 (United States, 3/1989).** CEIL: 125 mg/m^3 CEIL: 50 ppm
Acetic Acid	**ACGIH TLV (United States, 1/2006).** STEL: 37 mg/m^3 15 minute/minutes. Form: All forms STEL: 15 ppm 15 minute/minutes. Form: All forms TWA: 25 mg/m^3 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms **NIOSH REL (United States, 12/2001).** STEL: 37 mg/m^3 15 minute/minutes. Form: All forms STEL: 15 ppm 15 minute/minutes. Form: All forms TWA: 25 mg/m^3 10 hour/hours. Form: All forms TWA: 10 ppm 10 hour/hours. Form: All forms **OSHA PEL (United States, 8/1997).** TWA: 25 mg/m^3 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms **OSHA PEL 1989 (United States, 3/1989).** TWA: 25 mg/m^3 8 hour/hours. Form: All forms TWA: 10 ppm 8 hour/hours. Form: All forms

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: face shield

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body: Recommended: lab coat and gloves

Continued on Next Page

Section 8. Exposure Controls/Personal Protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Recommended: Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Vapor respirator or self-contained breathing apparatus (SCBA).

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

Physical state : Liquid.

Color : Dark purple.

Boiling/condensation point : The lowest known value is 99.9°C (211.8°F) (Water). Weighted average: 130.88°C (267.6°F)

Melting/freezing point : May start to solidify at 16.67°C (62°F) based on data for: Acetic Acid . Weighted average: -3.73°C (25.3°F)

Relative density : Weighted average: 1.13 (Water = 1)

Vapor density : The highest known value is 2.14 (Air = 1) (Ethylene Glycol). Weighted average: 2.14 (Air = 1)

Odor threshold : The lowest known value is 1 ppm (Acetic Acid)

Evaporation rate : The highest known value is 1.34 (Acetic Acid) Weighted average: 0.11compared with Butyl acetate.

Section 10. Stability and Reactivity

Stability and reactivity : The product is stable.

Incompatibility with various substances : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, combustible materials, acids, metals and alkalis.

Hazardous decomposition products : These products are halogenated compounds.

Hazardous polymerization : Will not occur.

Conditions of reactivity : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
Flammable in the presence of the following materials or conditions: reducing materials and combustible materials.

Highly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
Explosive in the presence of the following materials or conditions: reducing materials and combustible materials.
Development of hazardous combustion gases or vapors possible in the event of fire.

Section 11. Toxicological Information

Toxicity data

United States

Product/ingredient name	Test	Result	Route	Species

Continued on Next Page

Section 11. Toxicological Information

Ethylene Glycol	LD50	4700 mg/kg	Oral	Rat
	LD50	1650 mg/kg	Oral	Cat.
	LD50	2000 mg/kg	Oral	Cat.
	LDLo	398 mg/kg	Oral	human
	LDLo	786 mg/kg	Oral	human
Sodium Iodate	LD50	505 mg/kg	Oral	Mouse
Acetic Acid	LD50	3310 mg/kg	Oral	Rat
	LD50	4960 mg/kg	Oral	Mammal
	LD50	1060 mg/kg	Dermal	Mammal
	LDLo	600 mg/kg	Oral	Rabbit
	LDLo	600 mg/kg	Oral	Rabbit
	LC50	5620 ppm (1 hour/hours)	Inhalation	Muskrat
Aluminum Sulfate	LD50	10800 mg/kg	Oral	Rat

Chronic effects on humans : **CARCINOGENIC EFFECTS** Classified A4 (Not classifiable for humans or animals.) by ACGIH [Ethylene Glycol].
Contains material which causes damage to the following organs: upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, teeth.

Other toxic effects on humans : Very hazardous in case of ingestion.
Hazardous in case of inhalation.
Slightly hazardous in case of skin contact (permeator).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Sensitization

Ingestion : No known significant effects or critical hazards.

Inhalation : Irritating to respiratory system.

Eyes : Irritating to eyes.

Skin : Irritating to skin.

Section 12. Ecological Information

Ecotoxicity data

United States

Product/ingredient name	Species	Period	Result
Ethylene Glycol	Pimephales promelas (LC50)	96 hour/hours	8050 mg/l
	Pimephales promelas (LC50)	96 hour/hours	>10000 mg/l
	Lepomis macrochirus (LC50)	96 hour/hours	27540 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	41000 mg/l
	Pimephales promelas (LC50)	96 hour/hours	49000 mg/l
	Pimephales promelas (LC50)	96 hour/hours	53000 mg/l
Sodium Iodate	Oncorhynchus mykiss (LC50)	96 hour/hours	220 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	280 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	320 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	340 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	350 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	420 mg/l
Acetic Acid	Daphnia magna (EC50)	48 hour/hours	65 mg/l
	Lepomis macrochirus (LC50)	96 hour/hours	75 mg/l
	Pimephales promelas (LC50)	96 hour/hours	79 mg/l
	Pimephales promelas (LC50)	96 hour/hours	88 mg/l

Environmental precautions : No known significant effects or critical hazards.

Continued on Next Page

Section 12. Ecological Information

Products of degradation : These products are carbon oxides (CO, CO_2) and water, sulfur oxides (SO_2, SO_3 etc.), halogenated compounds. Some metallic oxides.

Toxicity of the products of biodegradation : The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	-	CHEMICALS, N.O.S.	-	-		-

PG* : Packing group

Section 15. Regulatory Information

United States

HCS Classification : Highly toxic material
Irritating material
Target organ effects

U.S. Federal regulations : TSCA 8(b) inventory: Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Sodium Iodate ; Ethylene Glycol ; Acetic Acid
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Sodium Iodate : Fire hazard, Immediate (acute) health hazard; Ethylene Glycol : Immediate (acute) health hazard, Delayed (chronic) health hazard; Acetic Acid : Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: Acetic Acid

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Continued on Next Page

Section 15. Regulatory Information

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

		Product name	CAS number	Concentration
Form R - Reporting requirements	:	Ethylene Glycol	107-21-1	25
Supplier notification	:	Ethylene Glycol	107-21-1	25

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Ethylene Glycol : (environmental hazard, generic environmental hazard); Acetic Acid : (environmental hazard, generic environmental hazard)
Massachusetts RTK: Ethylene Glycol ; Acetic Acid
New Jersey: Hematoxylin, Gill I, HARLECO ® , For Histology and Cytology

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

CEPA DSL/CEPA NDSL : CEPA DSL: Sodium Iodate ; Ethylene Glycol ; Acetic Acid ; Water

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Hazard symbol/symbols :

Risk phrases : R22- Harmful if swallowed.

Safety phrases : S2- Keep out of the reach of children.
S46- If swallowed, seek medical advice immediately and show this container or label.

International regulations

International lists : Australia (NICNAS): Hematoxylin ; Sodium Iodate ; Ethylene Glycol ; Aluminum Sulfate; Acetic Acid ; Water

China: Hematoxylin ; Sodium Iodate ; Ethylene Glycol ; Acetic Acid

Germany water class: Ethylene Glycol ; Acetic Acid

Japan (METI): Hematoxylin ; Sodium Iodate ; Ethylene Glycol ; Acetic Acid ; Water

Korea (TCCL): Hematoxylin ; Sodium Iodate ; Ethylene Glycol ; Acetic Acid ; Water

Philippines (RA6969): Hematoxylin ; Sodium Iodate ; Ethylene Glycol ; Aluminum Sulfate; Acetic Acid ; Water

Section 16. Other Information

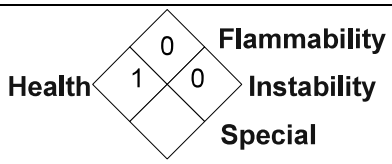
Label requirements : DANGER!

HARMFUL OR FATAL IF SWALLOWED.
HARMFUL IF INHALED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, TEETH

Continued on Next Page

Section 16. Other Information

National Fire Protection Association (U.S.A.) :



Notice to reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.