



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name	Hemacolor®	Product Code	65044
Manufacturer	EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.	Effective Date	4/19/2005
		Print Date	5/17/2005

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

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

Synonym	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Methyl Alcohol None. None.
Material Uses	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Analytical reagent. Laboratory Reagent Laboratory Reagent
Chemical Family	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Alcohol. Solution. Solution.

Section 2. Composition and Information on Ingredients

Product name / Reagent.	Component ; CAS # ; % by Weight
Solution 1, 65044A, Fixative	Methanol; 67-56-1; 100%
Hemacolor Solution 2, Fixative	Water; 7732-18-5; 97.97%
	Potassium Phosphate, Monobasic; 7778-77-0; 0.9%
	Sodium Azide; 26628-22-8; 0.1%
	Sodium Phosphate, Dibasic ; 7558-79-4; 0.9%
	Eosin Y; 17372-87-1; 0.9%
HARLECO® Hemacolor® Solution 3	Water; 7732-18-5; 96.96%
	Potassium Phosphate, Monobasic; 7778-77-0; 0.9%
	Sodium Phosphate, Dibasic ; 7558-79-4; 0.9%
	Methylene Blue; 61-73-4; 0.9%
	Azure B; 531-55-5; 0.9%

Continued on Next Page

Section 3. Hazards Identification

Physical State and Appearance	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Liquid. (Colorless.) Liquid. Liquid.
Emergency Overview	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3 Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, EYES, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, MUCOUS MEMBRANES, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS MEMBRANES, SKIN, EYES. MAY CAUSE EYE AND SKIN IRRITATION. Not Listed on Ca Prop 65. Not Listed on Ca Prop 65. Not Listed on Ca Prop 65.
Routes of Entry	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion. Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

<i>Eyes</i>	Solution 1, 65044A, Fixative	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.
	Hemacolor Solution 2, Fixative	May be hazardous in case of eye contact (irritant).
	HARLECO® Hemacolor® Solution 3	May be hazardous in case of eye contact (irritant).
<i>Skin</i>	Solution 1, 65044A, Fixative	Hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
	Hemacolor Solution 2, Fixative	May be hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
	HARLECO® Hemacolor® Solution 3	May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
<i>Inhalation</i>	Solution 1, 65044A, Fixative	Hazardous in case of inhalation (lung irritant).
	Hemacolor Solution 2, Fixative	May be hazardous in case of inhalation.
	HARLECO® Hemacolor® Solution 3	No known acute effects of this product resulting from inhalation.
<i>Ingestion</i>	Solution 1, 65044A, Fixative	Extremely hazardous in case of ingestion. May be fatal if swallowed.
	Hemacolor Solution 2, Fixative	May be hazardous in case of ingestion.
	HARLECO® Hemacolor® Solution 3	No known acute effects of this product resulting from ingestion.

Potential Chronic Health Effects

<i>Carcinogenic Effects</i>	Solution 1, 65044A, Fixative	This material is not known to cause cancer in animals or humans.
	Hemacolor Solution 2, Fixative	This material is not known to cause cancer in animals or humans.
	HARLECO® Hemacolor® Solution 3	This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

**Medical Conditions
Aggravated by
Overexposure:**

Solution 1, 65044A, Fixative	Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Hemacolor Solution 2, Fixative	Repeated or prolonged exposure is not known to aggravate medical condition.
HARLECO®	Repeated or prolonged exposure is not known to

Hemacolor® Solution 3 aggravate medical condition.

3

Section 4. First Aid Measures

Eye Contact	Solution 1, 65044A, Fixative	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
	Hemacolor Solution 2, Fixative	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
	HARLECO® Hemacolor® Solution 3	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact	Solution 1, 65044A, Fixative	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
	Hemacolor Solution 2, Fixative	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
	HARLECO® Hemacolor® Solution 3	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	Solution 1, 65044A, Fixative	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
	Hemacolor Solution 2, Fixative	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
	HARLECO® Hemacolor® Solution 3	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion

Solution 1, 65044A, Fixative	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Hemacolor Solution 2, Fixative	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
HARLECO® Hemacolor® Solution 3	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 5. Fire Fighting Measures

Flammability of the Product

Solution 1, 65044A, Fixative	Product will burn.
Hemacolor Solution 2, Fixative	Non-flammable.
HARLECO® Hemacolor® Solution 3	Non-flammable.

Auto-ignition Temperature

Solution 1, 65044A, Fixative	464.05°C (867.3°F)
Hemacolor Solution 2, Fixative	Not applicable.
HARLECO® Hemacolor® Solution 3	Not applicable.

Flash Points

Solution 1, 65044A, Fixative	Open cup: 15.9°C (60.6°F).
Hemacolor Solution 2, Fixative	Not applicable.
HARLECO® Hemacolor® Solution 3	Not applicable.

Flammable Limits

Solution 1, 65044A, Fixative	LOWER: 6% UPPER: 36.5%
Hemacolor Solution 2, Fixative	Not applicable.
HARLECO® Hemacolor® Solution 3	Not applicable.

Products of Combustion	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	These products are carbon oxides (CO, CO ₂). Not applicable. Not applicable.
Fire Hazards in Presence of Various Substances	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Highly flammable in presence of open flames, sparks and static discharge, of shocks, of heat, of oxidizing materials. Not applicable. Not applicable.
Explosion Hazards in Presence of Various Substances	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	<p>Risks of explosion of the product in presence of static discharge: Highly flammable in presence of open flames, sparks and static discharge. Highly explosive in presence of open flames, sparks and static discharge.</p> <p>Risks of explosion of the product in presence of mechanical impact: Highly flammable in presence of shocks. Highly explosive in presence of shocks.</p> <p>Risks of explosion of the product in presence of static discharge: No.</p> <p>Risks of explosion of the product in presence of mechanical impact: No.</p> <p>Risks of explosion of the product in presence of static discharge: No.</p> <p>Risks of explosion of the product in presence of mechanical impact: No.</p>
Fire Fighting Media and Instructions	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Not applicable. Not applicable.
Protective Clothing (Fire)		

Solution 1, 65044A, Fixative	Be sure to use an approved/certified respirator or equivalent.
Hemacolor Solution 2, Fixative	Not applicable.
HARLECO® Hemacolor® Solution 3	Not applicable.

Special Remarks on Fire Hazards

Solution 1, 65044A, Fixative	Dangerous fire and explosion risk. Container explosion may occur under fire conditions or when heated. Vapor may travel considerable distance to source of ignition and flash back.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

Special Remarks on Explosion Hazards

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Forms explosion sensitive compounds with some metals such as lead, silver, mercury and copper. (Sodium Azide)
HARLECO® Hemacolor® Solution 3	Not available.

Section 6. Accidental Release Measures**Small Spill and Leak**

Solution 1, 65044A, Fixative	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Hemacolor Solution 2, Fixative	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
HARLECO® Hemacolor® Solution 3	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak

Solution 1, 65044A, Fixative	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Hemacolor Solution 2, Fixative	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary

system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

HARLECO®
Hemacolor® Solution
3

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Spill Kit Information

Solution 1, 65044A,
Fixative

The following EMD Chemicals Inc. SpillSolv (TM) absorbent is recommended for this product:
SX1330 Solvent Treatment Kit

Hemacolor Solution 2,
Fixative

No specific spill kit required for this product.

HARLECO®
Hemacolor® Solution
3

No specific spill kit required for this product.

Section 7. Handling and Storage**Handling**

Solution 1, 65044A,
Fixative

Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Hemacolor Solution 2,
Fixative

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

HARLECO®
Hemacolor® Solution
3

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Storage

Solution 1, 65044A,
Fixative

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Hemacolor Solution 2,
Fixative

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

HARLECO®
Hemacolor® Solution
3

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

Section 8. Exposure Controls/Personal Protection

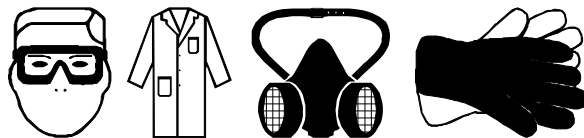
Engineering Controls	Solution 1, 65044A, Fixative	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
	Hemacolor Solution 2, Fixative	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
	HARLECO® Hemacolor® Solution 3	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Personal Protection

Eyes	Solution 1, 65044A, Fixative	Splash goggles.
	Hemacolor Solution 2, Fixative	Splash goggles.
	HARLECO® Hemacolor® Solution 3	Splash goggles.
Body	Solution 1, 65044A, Fixative	Lab coat.
	Hemacolor Solution 2, Fixative	Lab coat.
	HARLECO® Hemacolor® Solution 3	Lab coat.
Respiratory	Solution 1, 65044A, Fixative	Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
	Hemacolor Solution 2, Fixative	Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
	HARLECO® Hemacolor® Solution 3	Not applicable.
Hands	Solution 1, 65044A, Fixative	Gloves.
	Hemacolor Solution 2, Fixative	Gloves.
	HARLECO® Hemacolor® Solution 3	Gloves.

Feet Solution 1, 65044A, Not applicable.
 Fixative
 Hemacolor Solution 2, Not applicable.
 Fixative
 HARLECO® Not applicable.
 Hemacolor® Solution
 3

**Protective Clothing
 (Pictograms)**



**Personal Protection in
 Case of a Large Spill**

<p>Solution 1, 65044A, Fixative</p>	<p>Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</p>
<p>Hemacolor Solution 2, Fixative</p>	<p>Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</p>
<p>HARLECO® Hemacolor® Solution 3</p>	<p>Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</p>

Product Name

Exposure Limits

Methanol

ACGIH (United States, 1994). Skin

TWA: 262 mg/m³

STEL: 328 mg/m³

OSHA (United States, 1989). Skin

TWA: 260 mg/m³

STEL: 325 mg/m³

ACGIH (United States, 1994). Skin

STEL: 328 mg/m³ 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 262 mg/m³ 8 hour(s).

TWA: 200 ppm 8 hour(s).

NIOSH REL (United States, 1994). Skin

STEL: 325 mg/m³ 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 260 mg/m³ 10 hour(s).

TWA: 200 ppm 10 hour(s).

OSHA Final Rule (United States, 1989). Skin

STEL: 325 mg/m³ 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 260 mg/m³ 8 hour(s).

TWA: 200 ppm 8 hour(s).

Water

Not available.

Potassium Phosphate, Monobasic

Not available.

Sodium Azide

ACGIH (United States, 1996).

CEIL: 0.29 mg/m³

CEIL: 0.11 ppm Form: Vapor

NIOSH REL (United States, 1994). Skin

CEIL: 0.3 mg/m³ Form: As NaN₃

CEIL: 0.1 ppm Form: As HN₃

OSHA Final Rule (United States, 1989). Skin

	CEIL: 0.3 mg/m ³
	CEIL: 0.1 ppm
Sodium Phosphate, Dibasic	Not available.
Eosin Y	Not available.
Methylene Blue	Not available.
Azure B	Not available.

Section 9. Physical and Chemical Properties

Odor	Solution 1, 65044A, Fixative	Characteristic. Alcohol like.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO®	Odorless.
	Hemacolor® Solution 3	

Color	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Clear. Red.
	HARLECO®	Purple.
	Hemacolor® Solution 3	

Physical State and Appearance	Solution 1, 65044A, Fixative	Liquid. (Colorless.)
	Hemacolor Solution 2, Fixative	Liquid.
	HARLECO®	Liquid.
	Hemacolor® Solution 3	

Molecular Weight	Solution 1, 65044A, Fixative	Not applicable.
	Hemacolor Solution 2, Fixative	Not applicable.
	HARLECO®	Not applicable.
	Hemacolor® Solution 3	

Molecular Formula	Solution 1, 65044A, Fixative	Not applicable.
	Hemacolor Solution 2, Fixative	Not applicable.
	HARLECO®	Not applicable.
	Hemacolor® Solution 3	

pH	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO®	Not available.
	Hemacolor® Solution	

3

Boiling/Condensation Point	Solution 1, 65044A, Fixative	64.55°C (148.2°F)
	Hemacolor Solution 2, Fixative	The lowest known value is 99.9°C (211.8°F) (Water).
	HARLECO® Hemacolor® Solution 3	The lowest known value is 99.9°C (211.8°F) (Water).
Melting/Freezing Point	Solution 1, 65044A, Fixative	-97.72°C (-143.9°F)
	Hemacolor Solution 2, Fixative	May start to solidify at -0.1°C (31.8°F) based on data for: Water.
	HARLECO® Hemacolor® Solution 3	May start to solidify at -0.1°C (31.8°F) based on data for: Water.
Critical Temperature	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.
Specific Gravity	Solution 1, 65044A, Fixative	0.792 (Water = 1)
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.
Vapor Pressure	Solution 1, 65044A, Fixative	12.9 kPa (97 mmHg) (@ 20°C)
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.
Vapor Density	Solution 1, 65044A, Fixative	1.11 (Air = 1)
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.

Volatility	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	99.9% (v/v). Not available. Not available.
Odor Threshold	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	100 ppm Not available. Not available.
Evaporation Rate	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	5.91 compared to (n-Butyl Acetate =1) 0.36 (Water) compared to(n-Butyl Acetate =1) 0.36 (Water) compared to(n-Butyl Acetate =1)
VOC	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	100 (%) Not available. Not available.
Viscosity	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Not available. Not available. Not available.
LogK_{ow}	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Not available. Not available. Not available.
Ionicity (in Water)	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution	Not available. Not available. Not available.

3

Solubility	Solution 1, 65044A, Fixative	Soluble in water.
	Hemacolor Solution 2, Fixative	Soluble in water.
	HARLECO® Hemacolor® Solution 3	Easily soluble in water.

Physical Chemical Comments	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	Solution 1, 65044A, Fixative	The product is stable.
	Hemacolor Solution 2, Fixative	The product is stable.
	HARLECO® Hemacolor® Solution 3	The product is stable.

Conditions of Instability	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.

Incompatibility with Various Substances	Solution 1, 65044A, Fixative	Highly reactive with oxidizing agents. Reactive with metals, acids.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.

Rem/Incompatibility Contact with acids liberates toxic gas. (Sodium Azide)

Hazardous Decomposition Products	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO® Hemacolor® Solution 3	Not available.

Hazardous Polymerization	Solution 1, 65044A, Fixative	Will not occur.
	Hemacolor Solution 2, Fixative	Will not occur.
	HARLECO® Hemacolor® Solution 3	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Solution 1, 65044A, Fixative	PC1400000
	Water	ZC0110000
	Potassium Phosphate	TC6615500
	Sodium Azide	VY8050000
	Sodium Phosphate, Dibasic, Anhydrous	WC4500000
	Eosin Y (Yellowish)	LM5850000
	Methylene Blue	SO5600000
	Azure B	SO5550000

Toxicity	Solution 1, 65044A, Fixative	Acute oral toxicity (LD ₅₀): 5628 mg/kg [Rat]. Acute dermal toxicity (LD ₅₀): 15800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC ₅₀): 64000 ppm 4 hour(s) [Rat].
	Hemacolor Solution 2, Fixative	LD ₅₀ : Not available. LC ₅₀ : Not available.
	HARLECO® Hemacolor® Solution 3	LD ₅₀ : Not available. LC ₅₀ : Not available.

Chronic Effects on Humans Not available.

Acute Effects on Humans	Solution 1, 65044A, Fixative	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation (lung irritant). Extremely hazardous in case of ingestion. May be fatal if swallowed.
	Hemacolor Solution 2, Fixative	May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of inhalation. May be hazardous in case of ingestion.
	HARLECO® Hemacolor® Solution 3	May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Special Remarks on Toxicity

Continued on Next Page

Solution 1, 65044A, Not available.
 Fixative
 Hemacolor Solution 2, Not available.
 Fixative
 HARLECO® Not available.
 Hemacolor® Solution
 3

**Special Remarks on
 Chronic Effects on
 Humans**

Solution 1, 65044A, Not available.
 Fixative
 Hemacolor Solution 2, Not available.
 Fixative
 HARLECO® Not available.
 Hemacolor® Solution
 3

**Special Remarks on Other
 Toxic Effects on Humans**

Solution 1, 65044A, Not available.
 Fixative
 Hemacolor Solution 2, Not available.
 Fixative
 HARLECO® Not available.
 Hemacolor® Solution
 3

**Synergetic Products
 (Toxicologically)**

Solution 1, 65044A, Not available.
 Fixative
 Hemacolor Solution 2, Not available.
 Fixative
 HARLECO® Not available.
 Hemacolor® Solution
 3

Irritancy

Solution 1, 65044A, Draize Test (Rabbit):
 Fixative Skin: 20 mg/24h. Reaction: Moderate.
 Draize Test (Rabbit) Eye: 100 mg/24h moderate
 Hemacolor Solution 2, Draize Test: Not available.
 Fixative
 HARLECO® Draize Test: Not available.
 Hemacolor® Solution
 3

Sensitization

Solution 1, 65044A, Not available.
 Fixative
 Hemacolor Solution 2, Not available.
 Fixative
 HARLECO® Not available.
 Hemacolor® Solution
 3

Carcinogenic Effects

Solution 1, 65044A, Fixative	This material is not known to cause cancer in animals or humans.
Hemacolor Solution 2, Fixative	This material is not known to cause cancer in animals or humans.
HARLECO® Hemacolor® Solution 3	This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

Teratogenic Effects

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

Mutagenic Effects

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

Section 12. Ecological Information**Ecotoxicity**

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

BOD5 and COD

Solution 1, 65044A, Fixative	Not available.
Hemacolor Solution 2, Fixative	Not available.
HARLECO® Hemacolor® Solution 3	Not available.

Biodegradable/OECD	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Not available. Not available. Not available.
Mobility	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Not available. Not available. Not available.
	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	These products are carbon oxides (CO, CO2) and water. Not available. Not available.
Toxicity of the Products of Biodegradation	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	The products of degradation are less toxic than the product itself. The products of degradation are as toxic as the product itself. The products of degradation are more toxic than the product itself.
Special Remarks on the Products of Biodegradation	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	Not available. Not available. Not available.

Section 13. Disposal Considerations

EPA Waste Number	Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative HARLECO® Hemacolor® Solution 3	U154 D001Specified Technology - Contact your local permitted waste disposal site (TSD) for permissible treatment sites.Always contact permitted waste disposer (TSD) to assure compliance with all Current local, State and Federal Regulations. Material does not have an EPA Waste number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Material does not have an EPA Waste number and is not a listed waste, however consultation with a
-------------------------	--	--

		permitted waste disposal site (TSD) should be accomplished.
Treatment	Solution 1, 65044A, Fixative	Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.
	Hemacolor Solution 2, Fixative	Material does not have an EPA Waste number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished.
	HARLECO® Hemacolor® Solution 3	Material does not have an EPA Waste number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished.

+ Section 14. Transport Information

DOT Classification Proper Shipping Name: Methanol Solution
 Hazard Class: 3
 UN number: UN1230
 Packing Group: II
 RQ: Not applicable.



TDG Classification Not available.

IMO/IMDG Classification Not available.

ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations	Solution 1, 65044A, Fixative	TSCA 8(b) inventory: Methanol
	Hemacolor Solution 2, Fixative	TSCA 8(b) inventory: Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y
	HARLECO® Hemacolor® Solution 3	TSCA 8(b) inventory: Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue
	Solution 1, 65044A, Fixative	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: Methanol SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Methanol: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
	Hemacolor Solution 2, Fixative	SARA 302/304/311/312 extremely hazardous substances: Sodium Azide SARA 302/304 emergency planning and notification:

	Sodium Azide SARA 302/304/311/312 hazardous chemicals: Sodium Azide; Sodium Phosphate, Dibasic SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Sodium Azide: Immediate (Acute) Health Hazard; Sodium Phosphate, Dibasic : Immediate (Acute) Health Hazard
HARLECO® Hemacolor® Solution 3	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 Phosphate, Dibasic ; Methylene Blue SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Sodium Phosphate, Dibasic : Immediate (Acute) Health Hazard; Methylene Blue: Delayed (Chronic) Health Hazard
Solution 1, 65044A, Fixative Hemacolor Solution 2, Fixative	SARA 313 toxic chemical notification and release reporting: Methanol
HARLECO® Hemacolor® Solution 3	SARA 313 toxic chemical notification and release reporting: No products were found.
Solution 1, 65044A, Fixative	Clean Water Act (CWA) 307: No products were found.
Hemacolor Solution 2, Fixative	Clean Water Act (CWA) 307: No products were found.
HARLECO® Hemacolor® Solution 3	Clean Water Act (CWA) 307: No products were found.
Solution 1, 65044A, Fixative	Clean Water Act (CWA) 311: No products were found.
Hemacolor Solution 2, Fixative	Clean Water Act (CWA) 311: Sodium Phosphate, Dibasic
HARLECO® Hemacolor® Solution 3	Clean Water Act (CWA) 311: Sodium Phosphate, Dibasic
Solution 1, 65044A, Fixative	Clean air act (CAA) 112 accidental release prevention: No products were found.
Hemacolor Solution 2, Fixative	Clean air act (CAA) 112 accidental release prevention: No products were found.
HARLECO® Hemacolor® Solution 3	Clean air act (CAA) 112 accidental release prevention: No products were found.
Solution 1, 65044A, Fixative	Clean air act (CAA) 112 regulated flammable substances: No products were found.
Hemacolor Solution 2, Fixative	Clean air act (CAA) 112 regulated flammable substances: No products were found.
HARLECO® Hemacolor® Solution 3	Clean air act (CAA) 112 regulated flammable substances: No products were found.

Solution 1, 65044A, Fixative	Clean air act (CAA) 112 regulated toxic substances: No products were found.
Hemacolor Solution 2, Fixative	Clean air act (CAA) 112 regulated toxic substances: No products were found.
HARLECO® Hemacolor® Solution 3	Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada)

Solution 1, 65044A, Fixative	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
Hemacolor Solution 2, Fixative	Class D-2A: Material causing other toxic effects (VERY TOXIC).
HARLECO® Hemacolor® Solution 3	Not controlled under WHMIS (Canada).

Solution 1, 65044A, Fixative	CEPA DSL: Methanol
Hemacolor Solution 2, Fixative	CEPA DSL: Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y
HARLECO® Hemacolor® Solution 3	CEPA DSL: Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue

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

International Regulations**EINECS**

Solution 1, 65044A, Fixative	Methanol	200-659-6
Hemacolor Solution 2, Fixative	Water	231-791-2
	Potassium Phosphate, Monobasic	231-913-4
	Sodium Azide	247-852-1
	Sodium Phosphate, Dibasic	231-448-7
HARLECO®	Water	231-791-2
Hemacolor® Solution 3	Potassium Phosphate, Monobasic	231-913-4
	Sodium Phosphate, Dibasic	231-448-7
	Methylene Blue	200-515-2

DSCL (EEC)

Solution 1, 65044A, Fixative	R11- Highly flammable. R37/38- Irritating to respiratory system and skin. R41- Risk of serious damage to eyes.
Hemacolor Solution 2, Fixative	R21- Harmful in contact with skin.
HARLECO® Hemacolor® Solution 3	This product is not classified according to the EU regulations.

International Lists	Solution 1, 65044A, Fixative	Australia (NICNAS): Methanol Japan (MITI): Methanol Korea (TCCL): Methanol Philippines (RA6969): Methanol
	Hemacolor Solution 2, Fixative	Australia (NICNAS): Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y Japan (MITI): Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y Korea (TCCL): Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y Philippines (RA6969): Water; Potassium Phosphate, Monobasic; Sodium Azide; Sodium Phosphate, Dibasic ; Eosin Y
	HARLECO® Hemacolor® Solution 3	Australia (NICNAS): Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue; Azure B Japan (MITI): Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue Korea (TCCL): Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue Philippines (RA6969): Water; Potassium Phosphate, Monobasic; Sodium Phosphate, Dibasic ; Methylene Blue

Solution 1, 65044A, Fixative	China: No products were found.
Hemacolor Solution 2, Fixative	China: No products were found.
HARLECO® Hemacolor® Solution 3	China: No products were found.

State Regulations

Solution 1, 65044A, Fixative	Pennsylvania RTK: Methanol: (environmental hazard, generic environmental hazard) Massachusetts RTK: Methanol New Jersey: Methanol
Hemacolor Solution 2, Fixative	Pennsylvania RTK: Sodium Azide: (environmental hazard, generic environmental hazard); Sodium Phosphate, Dibasic : (environmental hazard, generic

	environmental hazard)
	Massachusetts RTK: Sodium Azide; Sodium Phosphate, Dibasic
HARLECO®	New Jersey: Hemacolor Solution 2, Fixative
Hemacolor® Solution 3	Pennsylvania RTK: Sodium Phosphate, Dibasic : (environmental hazard, generic environmental hazard)
	Massachusetts RTK: Sodium Phosphate, Dibasic
	New Jersey: HARLECO® Hemacolor® Solution 3
Solution 1, 65044A, Fixative	California prop. 65: No products were found.
Hemacolor Solution 2, Fixative	California prop. 65: No products were found.
HARLECO®	California prop. 65: No products were found.
Hemacolor® Solution 3	

Section 16. Other Information

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



Other Special Considerations	Solution 1, 65044A, Fixative	Not available.
	Hemacolor Solution 2, Fixative	Not available.
	HARLECO®	Not available.
	Hemacolor® Solution 3	

Changed Since Last Revision +

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.