



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name	Crystal Violet	Product Code	65092A
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	2/16/2005
		Print Date	3/8/2005

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 None.

Material Uses Laboratory Reagent

Chemical Family Solution.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Crystal Violet	548-62-9	0-1
Ethanol	64-17-5	10-30
Phenol	108-95-2	0-1
Methanol	67-56-1	0-1
Water	7732-18-5	78.5

Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview WARNING !
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED..
FLAMMABLE LIQUID AND VAPOR.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
POSSIBLE BIRTH DEFECT HAZARD.
CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
KIDNEYS, LUNGS, LIVER, SPLEEN, GASTROINTESTINAL TRACT, RESPIRATORY TRACT,
SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, PANCREAS, BLOOD ,
REPRODUCTIVE SYSTEM.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (corrosive, irritant). May cause burns. Inflammation of the eye is characterized by redness, watering, and itching.

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Skin Hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Inhalation Hazardous in case of inhalation (lung irritant).

Ingestion Hazardous in case of ingestion.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact 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.

Skin Contact 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.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion 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.

Section 5. Fire Fighting Measures

Flammability of the Product Product will burn.

Auto-ignition Temperature The lowest known value is 362.78°C (685°F) (Ethanol).

Flash Points The lowest known value is Closed cup: 13.333°C (56°F). (Ethanol)

Flammable Limits The greatest known range is LOWER: 3.3% UPPER: 19% (ETHANOL)

Products of Combustion These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances Highly flammable in presence of open flames, sparks and static discharge, of shocks, of heat. Slightly flammable to flammable in presence of oxidizing materials.

Explosion Hazards in Presence of Various Substances
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.

Risks of explosion of the product in presence of mechanical impact:
 Highly flammable in presence of shocks.
 Slightly explosive in presence of shocks.

Fire Fighting Media and Instructions
 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.

Protective Clothing (Fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards 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. (Methanol)

Special Remarks on Explosion Hazards Not available.

Section 6. Accidental Release Measures

Small Spill and Leak 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 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.

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

Section 7. Handling and Storage

Handling 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.

Storage 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).

Section 8. Exposure Controls/Personal Protection

Engineering Controls 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.

Personal Protection

Eyes Splash goggles.

Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill 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.

Product Name

Crystal Violet
Ethanol

Exposure Limits

Not available.

AUVA (Austria, 1995).

Spitzenbegrenzung: 3800 mg/m³ 3 times per shift, 60 minute(s).

Spitzenbegrenzung: 2000 ML/M3 3 times per shift, 60 minute(s).

TWA: 1900 mg/m³ 8 hour(s).

TWA: 1000 ML/M3 8 hour(s).

NOHSC (Australia, 1995).

TWA: 1880 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

Lijst Grenswaarden (Belgium, 1998).

VL: 1907 mg/m³ 8 hour(s).

VL: 1000 ppm 8 hour(s).

SUVA (Switzerland, 1997).

MAK: 1900 mg/m³ 8 hour(s).

MAK: 1000 ML/M3 8 hour(s).

Ministry of Health (CL, 1992).

TWA: 1500 mg/m³ 8 hour(s).

TWA: 800 ppm 8 hour(s).

MAK-Werte Liste (Germany, 1998).

Spitzenbegrenzung: 1920 mg/m³ 4 times per shift, 30 minute(s).

Spitzenbegrenzung: 1000 ML/M3 4 times per shift, 30 minute(s).

TWA: 960 mg/m³ 8 hour(s).

TWA: 500 ML/M3 8 hour(s).

TRGS900 (Germany, 1999).

Spitzenbegrenzung: 7600 mg/m³

Spitzenbegrenzung: 4000 ML/M3

TWA: 1900 mg/m³ 8 hour(s).

TWA: 1000 ML/M3 8 hour(s).

Arbejdstilsynet (Denmark, 1996).

GV: 1900 mg/m³ 8 hour(s).

GV: 1000 ppm 8 hour(s).

Tyterveyslaitos (Finland, 1998).

STEL: 2500 mg/m³ 15 minute(s).

STEL: 1300 ppm 15 minute(s).

TWA: 1900 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

INRS (France, 1999).

VLE: 9500 mg/m³ 15 minute(s).

VLE: 5000 ppm 15 minute(s).

VME: 1900 mg/m³ 8 hour(s).

VME: 1000 ppm 8 hour(s).

EH40-OES (United Kingdom (UK), 2000).

TWA: 1920 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

NAOSH (Ireland, 1999).

OEL: 1900 mg/m³ 8 hour(s).

OEL: 1000 ppm 8 hour(s).

Ministry of Labour (KR, 1997).

TWA: 1900 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

Secretary of Work and Social security (MX, 1994).

CPT: 1900 mg/m³ 8 hour(s).

CPT: 1000 ppm 8 hour(s).

Nationale MAC-lijst (Netherlands, 2000).

TGG 8 uur: 1000 mg/m³ 8 hour(s).

TGG 8 uur: 500 ppm 8 hour(s).

NZ OSH (NZ, 1994).

TWA: 1880 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

AFS (Sweden, 1996).

TGV: 1900 mg/m³

TGV: 1000 ppm

NGV: 1000 mg/m³ 8 hour(s).

NGV: 500 ppm 8 hour(s).

ACGIH TLV (United States, 2000).

TWA: 1880 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

NIOSH REL (United States, 2000).

TWA: 1900 mg/m³ 10 hour(s).

TWA: 1000 ppm 10 hour(s).

OSHA Final Rule (United States, 1989).

TWA: 1900 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

Phenol

EH40-OES (United Kingdom (UK), 1997). SkinSTEL: 39 mg/m³ 15 minute(s).

STEL: 10 ppm 15 minute(s).

TWA: 20 mg/m³ 8 hour(s).

TWA: 5 ppm 8 hour(s).

ACGIH (United States, 1996). SkinTWA: 19 mg/m³ 8 hour(s).

TWA: 5 ppm 8 hour(s).

NIOSH REL (United States, 1994). SkinCEIL: 60 mg/m³ 15 minute(s).

CEIL: 15.6 ppm 15 minute(s).

TWA: 19 mg/m³ 10 hour(s).

TWA: 5 ppm 10 hour(s).

OSHA Final Rule (United States, 1989). SkinTWA: 19 mg/m³ 8 hour(s).

TWA: 5 ppm 8 hour(s).

Methanol

ACGIH (United States, 1994). SkinTWA: 262 mg/m³STEL: 328 mg/m³**OSHA (United States, 1989). Skin**TWA: 260 mg/m³STEL: 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). SkinSTEL: 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). SkinSTEL: 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.

Section 9. Physical and Chemical Properties

Odor	Alcohol like. (Slight.)
Color	Violet or Red
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	Not available.
Boiling/Condensation Point	The lowest known value is 78.333°C (173°F) (Ethanol). Weighted average: 95.52°C (203.9°F)
Melting/Freezing Point	May start to solidify at -0.1°C (31.8°F) based on data for: Water. Weighted average: -0.79°C (30.6°F)
Specific Gravity	The only known value is 0.794 (Water = 1) (Ethanol).
Vapor Pressure	The highest known value is 5.9 kPa (44 mmHg) (@ 20°C) (ETHANOL).
Vapor Density	The highest known value is 1.59 (Air = 1) (Ethanol).

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Volatility	99.9% (v/v). (Methanol.)
Odor Threshold	The lowest known value is 5 ppm (Ethanol)
Evaporation Rate	The highest known value is 1.7 (Ethanol) Weighted average: 0.63 compared to (n-Butyl Acetate =1)
VOC	21 (%)
LogK_{ow}	Not available.
Solubility	Soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	FLAMMABLE LIQUID AND VAPOR. (Ethanol)
Incompatibility with Various Substances	Highly reactive with oxidizing agents, metals. Slightly reactive to reactive with acids.
Rem/Incompatibility	Avoid all possible sources of ignition (spark or flame). Avoid Heat Incompatible with acetic anhydride, metal hydrides, calcium oxychloride. (Ethanol)
Hazardous Decomposition Products	CO _x , Chlorine., formaldehyde
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Crystal Violet	BO9000000
	Ethanol	KQ6300000
	Phenol	SJ3325000
	Methanol	PC1400000
	Water	ZC0110000
Toxicity	Acute oral toxicity (LD ₅₀): 3450 mg/kg [Mouse]. (Ethanol). Acute toxicity of the vapor (LC ₅₀): 20000 ppm 10 hour(s) [Rat]. (Ethanol).	
Chronic Effects on Humans	DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED] [ETHANOL]. Contains material which may cause damage to the following organs: blood, the reproductive system.	
Acute Effects on Humans	Hazardous in case of eye contact (corrosive, irritant). May cause burns. 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). Hazardous in case of ingestion.	
Synergetic Products (Toxicologically)	Not available.	
Irritancy	<u>Draize Test:</u> Not available.	
Sensitization	Not available.	
Carcinogenic Effects	This material is not known to cause cancer in animals or humans.	
Toxicity to Reproductive System	Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED] [ETHANOL].	
Teratogenic Effects	Not available.	
Mutagenic Effects	Not available.	

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Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Toxicity of the Products of Biodegradation The products of degradation are as toxic as the product itself.

Section 13. Disposal Considerations

EPA Waste Number D001 U188

Treatment Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites.

Section 14. Transport Information

DOT Classification Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL,METHANOL)
Hazard Class: 3
UN number: UN1993
Packing Group: III
RQ: Not applicable.



TDG Classification Not available.

IMO/IMDG Classification Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL,METHANOL)
UN number: UN1993
Packing Group: III
RQ: Not applicable.

ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 8(b) inventory: Crystal Violet
TSCA 8(d) H and S data reporting: Phenol: 1987
SARA 302/304/311/312 extremely hazardous substances: Phenol
SARA 302/304 emergency planning and notification: Crystal Violet
SARA 302/304/311/312 hazardous chemicals: Crystal Violet
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Crystal Violet: Fire Hazard
SARA 313 toxic chemical notification and release reporting: Crystal Violet
Clean Water Act (CWA) 307: Phenol
Clean Water Act (CWA) 311: Phenol
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

CEPA DSL: Crystal Violet; Ethanol; Phenol; Methanol; Water

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	Crystal Violet	208-953-6
	Ethanol	200-578-6
	Phenol	203-632-7
	Methanol	200-659-6
	Water	231-791-2

DSCL (EEC) R36/38- Irritating to eyes and skin.

International Lists Australia (NICNAS): Crystal Violet; Ethanol; Phenol; Methanol; Water

China: Crystal Violet

Germany water class: Ethanol

Japan (MITI): Crystal Violet; Ethanol; Phenol; Methanol; Water

Korea (TCCL): Crystal Violet; Ethanol; Phenol; Methanol; Water

Philippines (RA6969): Crystal Violet; Ethanol; Phenol; Methanol; Water

China: Crystal Violet

State Regulations

Pennsylvania RTK: Ethanol: (generic environmental hazard); Phenol: (environmental hazard, generic environmental hazard); Methanol: (environmental hazard, generic environmental hazard)

Massachusetts RTK: Ethanol; Phenol; Methanol

New Jersey: Crystal Violet

California prop. 65: No products were found.

Section 16. Other Information

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



**Changed Since Last
Revision**

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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.