

Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Alcohol 100%, HARLECO ®, For **Product Code** 65347
Histology and Cytology

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 3/4/2003
Print Date 5/3/2004

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 Aliphatic alcohol or glycol.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
ISOPROPYL ALCOHOL	67-63-0	5
ETHANOL	64-17-5	90.44
METHANOL	67-56-1	4.56

Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview DANGER !
POISON !
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF INHALED OR SWALLOWED.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.
MAY CAUSE EYE BURNS.
MAY CAUSE 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:
GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS
SYSTEM, EYE, LENS OR CORNEA.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS:
BLOOD, REPRODUCTIVE SYSTEM, LIVER.

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

Potential Acute Health Effects

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Eyes Hazardous in case of eye contact (corrosive). May cause burns.

Skin May be 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.

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. 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 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 363°C (685.4°F) (ETHANOL).

Flash Points The lowest known value is Open cup: 11.9°C (53.4°F). (ISOPROPYL ALCOHOL)

Flammable Limits The greatest known range is LOWER: 6% UPPER: 36.5% (METHANOL)

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. 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.
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.
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 Vapor may travel considerable distance to source of ignition and flash back. (ISOPROPYL ALCOHOL)

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 threshold limit value. 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

ISOPROPYL ALCOHOL

Exposure Limits

BAUA (Germany, 1997).

Spitzenbegrenzung: 2000 mg/m³

MAK: 500 mg/m³

DK-Arbejdstylnet (Denmark, 1996). Skin

GV: 490 mg/m³

GV: 200 ppm

INRS (France, 1996).

VLE: 980 mg/m³

VLE: 400 ppm

National Authority for Occupational Safety/Health (Ireland, 1999). Skin

STEL: 1225 mg/m³

STEL: 500 ppm

OEL: 980 mg/m³

OEL: 400 ppm

Arbeidsinspectie (Netherlands, 1999).

TGG 8 uur: 650 mg/m³

TGG 8 uur: 250 ppm

N-Arbeidstilsynet (Norway, 1996).

AN: 245 mg/m³

AN: 100 ppm

AFS (Sweden, 1996).

KTV: 600 mg/m³

KTV: 250 ppm

NGV: 350 mg/m³

NGV: 150 ppm

EH40-OES (United Kingdom (UK), 1997).

STEL: 1250 mg/m³

STEL: 500 ppm

TWA: 999 mg/m³

TWA: 400 ppm

ACGIH (United States, 1994).

STEL: 1230 mg/m³

STEL: 500 ppm

TWA: 983 mg/m³

TWA: 400 ppm

NIOSH REL (United States, 1994).

STEL: 1225 mg/m³

STEL: 500 ppm

TWA: 980 mg/m³ Period: 10 hour(s).

TWA: 400 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989).

STEL: 1225 mg/m³

STEL: 500 ppm

TWA: 980 mg/m³

TWA: 400 ppm

AUVA (Austria, 1995).

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

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

MAK: 1900 mg/m³

MAK: 1000 ML/M3

NOHSC (Australia, 1995).

TWA: 1880 mg/m³

TWA: 1000 ppm

Lijst Grenswaarden (Belgium, 1998).

VL: 1907 mg/m³

VL: 1000 ppm

SUVA (Switzerland, 1997).

MAK: 1900 mg/m³

MAK: 1000 ML/M3

Ministry of Health (CL, 1992).

TWA: 1500 mg/m³

TWA: 800 ppm

MAK-Werte Liste (Germany, 1998).

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

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

MAK: 960 mg/m³

MAK: 500 ML/M3

TRGS900 (Germany, 1999).

Spitzenbegrenzung: 7600 mg/m³

Spitzenbegrenzung: 4000 ML/M3

MAK: 1900 mg/m³

ETHANOL

MAK: 1000 ML/M3

Arbejdstilsynet (Denmark, 1996).

GV: 1900 mg/m³

GV: 1000 ppm

Tyterveyslaitos (Finland, 1998).

STEL: 2500 mg/m³

STEL: 1300 ppm

TWA: 1900 mg/m³

TWA: 1000 ppm

INRS (France, 1999).

VLE: 9500 mg/m³

VLE: 5000 ppm

VME: 1900 mg/m³

VME: 1000 ppm

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

TWA: 1920 mg/m³

TWA: 1000 ppm

NAOSH (Ireland, 1999).

OEL: 1900 mg/m³

OEL: 1000 ppm

Ministry of Labour (KR, 1997).

TWA: 1900 mg/m³

TWA: 1000 ppm

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

CPT: 1900 mg/m³ Period: 8 hour(s).

CPT: 1000 ppm Period: 8 hour(s).

Nationale MAC-lijst (Netherlands, 2000).

TGG 8 uur: 1000 mg/m³

TGG 8 uur: 500 ppm

NZ OSH (NZ, 1994).

TWA: 1880 mg/m³

TWA: 1000 ppm

AFS (Sweden, 1996).

TGV: 1900 mg/m³

TGV: 1000 ppm

NGV: 1000 mg/m³

NGV: 500 ppm

ACGIH TLV (United States, 2000).

TWA: 1880 mg/m³

TWA: 1000 ppm

NIOSH REL (United States, 2000).

TWA: 1900 mg/m³ Period: 10 hour(s).

TWA: 1000 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989).

TWA: 1900 mg/m³

TWA: 1000 ppm

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

STEL: 250 ppm

TWA: 262 mg/m³

TWA: 200 ppm

NIOSH REL (United States, 1994). Skin

STEL: 325 mg/m³

STEL: 250 ppm

TWA: 260 mg/m³ Period: 10 hour(s).

TWA: 200 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989). Skin

STEL: 325 mg/m³

STEL: 250 ppm

TWA: 260 mg/m³

TWA: 200 ppm

Section 9. Physical and Chemical Properties

Odor	Characteristic.
Color	Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	Not available.
Boiling/Condensation Point	The lowest known value is 64.55°C (148.2°F) (METHANOL). Weighted average: 78.52°C (173.3°F)
Melting/Freezing Point	May start to solidify at -88.83°C (-127.9°F) based on data for: ISOPROPYL ALCOHOL. Weighted average: -112°C (-169.6°F)
Specific Gravity	Weighted average: 0.79 (Water = 1)
Vapor Pressure	The highest known value is 12.9 kPa (97 mmHg) (@ 20°C) (METHANOL). Weighted average: 6.24 kPa (46.8 mmHg) (@ 20°C)
Vapor Density	The highest known value is 2.07 (Air = 1) (ISOPROPYL ALCOHOL). Weighted average: 1.6 (Air = 1)
Volatility	99.9% (v/v). (METHANOL.)
Odor Threshold	The highest known value is 100 ppm (METHANOL) Weighted average: 9.56 ppm
Evaporation Rate	The highest known value is 5.91 (METHANOL) Weighted average: 1.89 compared to (n-BUTYL ACETATE=1)
VOC	100 (%)
LogK_{ow}	Not available.
Solubility	Partially soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Reactive with oxidizing agents, acids. Slightly reactive to reactive with metals.
Rem/Incompatibility	Incompatible with nitric acid, trioxide, hydrogen peroxide, silver nitrate, perchlorates. (ETHANOL)
Hazardous Decomposition Products	COx
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Isopropyl Alcohol Ethanol Methanol	NT8050000 KQ6300000 PC1400000
Toxicity	Acute oral toxicity (LD ₅₀): 3450 mg/kg [Mouse]. (ETHANOL). Acute dermal toxicity (LD ₅₀): 12800 mg/kg [Rabbit]. (ISOPROPYL ALCOHOL). Acute toxicity of the gas (LC ₅₀): 31623 ppm 4 hour(s) [Rat]. (ETHANOL). Acute toxicity of the vapor (LC ₅₀): 64000 ppm 4 hour(s) [Rat]. (METHANOL).	
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, liver.	
Acute Effects on Humans	Hazardous in case of eye contact (corrosive). May cause burns. May be hazardous in case of skin contact (permeator, irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation. 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.	

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number	D001
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: ALCOHOLS, N.O.S.(ETHANOL, ISOPROPANOL, METHANOL) Hazard Class: 3 UN number: UN1987 Packing Group: II RQ: Not applicable.
TDG Classification	Not available.



**IMO/IMDG
Classification** Proper Shipping Name: ALCOHOLS,
N.O.S.(ETHANOL, ISOPROPANOL, METHANOL)
Hazard Class: 3
UN number: UN1987
Packing Group: II
RQ: Not applicable.

**ICAO/IATA
Classification** Proper Shipping Name: ALCOHOLS,
N.O.S.(ETHANOL, ISOPROPANOL, METHANOL)
Hazard Class: 3
UN number: UN1987
Packing Group: II
RQ: Not applicable.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 4(a) final test rules: ISOPROPYL ALCOHOL
TSCA 8(b) inventory: ISOPROPYL ALCOHOL; SDA-3A
TSCA 8(d) H and S data reporting: ISOPROPYL ALCOHOL: 1986
TSCA 12(b) one time export: ISOPROPYL ALCOHOL
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: ISOPROPYL ALCOHOL; SDA-3A
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: ISOPROPYL
ALCOHOL: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard;
SDA-3A: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
SARA 313 toxic chemical notification and release reporting: ISOPROPYL ALCOHOL 5%;
METHANOL 4.56%
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
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).
Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: ISOPROPYL ALCOHOL; ETHANOL; METHANOL

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 ISOPROPYL ALCOHOL 200-661-7
ETHANOL 200-578-6
METHANOL 200-659-6

DSCL (EEC) R11- Highly flammable.
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R40/20/21/22- Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

International Lists Australia (NICNAS): ISOPROPYL ALCOHOL; ETHANOL; METHANOL
Germany water class: ETHANOL
Japan (MITI): ISOPROPYL ALCOHOL; ETHANOL; METHANOL
Japan (MOL): ISOPROPYL ALCOHOL
Korea (TCCL): ISOPROPYL ALCOHOL; ETHANOL; METHANOL

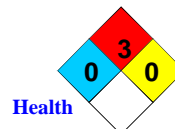
Philippines (RA6969): ISOPROPYL ALCOHOL; ETHANOL; METHANOL
China: No products were found.

State Regulations

Pennsylvania RTK: ISOPROPYL ALCOHOL: (environmental hazard, generic environmental hazard); ETHANOL: (generic environmental hazard); METHANOL: (environmental hazard, generic environmental hazard)
Massachusetts RTK: ISOPROPYL ALCOHOL; ETHANOL; METHANOL
New Jersey: Alcohol 100
California prop. 65: No products were found.

Section 16. Other Information

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



Fire Hazard

Reactivity

Specific Hazard

**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.