

Material Safety Data Sheet

Smith Science

+ Section 1. Product and Company Identification

Product Name Ethyl Alcohol, Pure, 200 Proof, Product Code 4450
OmniPur

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.
dist. by VWR Scientific Products

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 Anhydrous Ethyl Alcohol, Dehydrated Alcohol

Material Uses Laboratory Reagent

Chemical Family Alcohol.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Ethanol	64-17-5	100

Section 3. Hazards Identification

Physical State and Appearance Liquid.

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

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

Potential Acute Health Effects

Eyes May be hazardous in case of eye contact (irritant).

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

Inhalation Hazardous in case of inhalation.

Ingestion Hazardous in case of ingestion.

Continued on Next Page

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.
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	362.78°C (685°F)
Flash Points	Closed cup: 13.333°C (56°F).
Flammable Limits	LOWER: 3.3% UPPER: 19%
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames, sparks and static discharge, of shocks, of heat.
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. Risks of explosion of the product in presence of mechanical impact: Highly flammable 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.
Special Remarks on Explosion Hazards	Dangerous fire and explosion risk.

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. 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**Exposure Limits**

Ethanol

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).

Continued on Next Page

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).

Section 9. Physical and Chemical Properties

Odor	Alcohol like.
Color	Clear and Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	46.07 g/mole
Molecular Formula	C ₂ H ₅ OH
pH	Not available.
Boiling/Condensation Point	78.333°C (173°F)
Melting/Freezing Point	-3.4889°C (25.7°F)
Specific Gravity	0.794 (Water = 1)
Vapor Pressure	5.9 kPa (44 mmHg) (@ 20°C)
Vapor Density	1.59 (Air = 1)
Odor Threshold	Not available.
Evaporation Rate	1.7 compared to(n-Butyl Acetate =1)
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.
Incompatibility with Various Substances	Reactive with oxidizing agents, acids.
Rem/Incompatibility	Avoid all possible sources of ignition (spark or flame). Avoid Heat Incompatible with acetic anhydride, metal hydrides, calcium oxychloride.
Hazardous Decomposition Products	COx
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Ethanol	KQ6300000
Toxicity	Acute oral toxicity (LD ₅₀): 3450 mg/kg [Mouse]. Acute toxicity of the vapor (LC ₅₀): 20000 ppm 10 hour(s) [Rat].	
Chronic Effects on Humans	DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. Contains material which may cause damage to the following organs: blood, the reproductive system, liver, upper respiratory tract, skin, eyes, central nervous system (CNS), eye, lens or cornea.	

Continued on Next Page

Acute Effects on Humans	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. Hazardous in case of inhalation. Hazardous in case of ingestion.
Synergetic Products (Toxicologically)	Not available.
Irritancy	<u>Draize Test</u> (Rabbit): Skin: 20mg/24 hours. Reaction: Moderate Eye 500 mg 24 hours Mild Rabbit
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].
Teratogenic Effects	Not available.
Mutagenic Effects	Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).


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	Not available.
Treatment	Incineration, fuels blending or recycle. 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.

Section 14. Transport Information

DOT Classification	Proper Shipping Name: ETHYL ALCOHOL Hazard Class: 3 UN number: UN1170 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	TSCA 8(b) inventory: ETHANOL 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: ETHANOL SARA 311/312 MSDS distribution - chemical inventory - hazard identification: ETHANOL: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard SARA 313 toxic chemical notification and release reporting: No products were found.
---------------------------------	--

Continued on Next Page

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-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: ETHANOL

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 ETHANOL 200-578-6

DSCL (EEC) R11- Highly flammable.
 R36/38- Irritating to eyes and skin.

International Lists Australia (NICNAS): ETHANOL

Germany water class: ETHANOL

Japan (MITI): ETHANOL

Korea (TCCL): ETHANOL

Philippines (RA6969): ETHANOL
 China: No products were found.

State Regulations

Pennsylvania RTK: ETHANOL: (generic environmental hazard)
 Massachusetts RTK: ETHANOL
 New Jersey: ETHANOL
 California prop. 65: No products were found.

Section 16. Other Information

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



**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.