

MATERIAL SAFETY DATA SHEET

Alcohol, Reagent Denatured Ethyl Alcohol

SECTION 1 . Product and Company Identification

Product Name and Synonym: Alcohol, Reagent Denatured Ethyl Alcohol
Product Code: A2700
Material Uses:
Manufacturer: Science Stuff
1104 Newport Ave
Austin, TX 78753
(512) 837-6020
Entry Date : 5/23/2013
Print Date: 5/23/2013
24 Hour Emergency Assistance : Chemtrec 800-424-9300
Canutec 613-996-6666

Health:	2			
Flammability:	3			
Reactivity:	0			
Hazard Rating:				
Least	Slight	Moderate	High	Extreme
0	1	2	3	4
NA=Not Applicable		NE=Not Established		

SECTION 2 HAZARD IDENTIFICATION

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

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

Emergency overview:

DANGER!
POISON!
MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED.
VAPOR HARMFUL.
HARMFUL IF INHALED OR ABSORBED THROUGH THE SKIN
CANNOT BE MADE NONPOISONOUS
CAUSES SEVERE EYE IRRITATION.
CAUSES RESPIRATORY TRACT
AND SKIN
IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
BLOOD,
REPRODUCTIVE SYSTEM,
LIVER,
GASTROINTESTINAL TRACT
RESPIRATORY TRACT, SKIN,
CENTRAL NERVOUS SYSTEM
EYE, LENS OR CORNEA
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.

Do not ingest. Avoid contact with eyes, skin or clothing.
Avoid breathing vapor or mist. Keep away from heat, sparks and flame. 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:

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Eyes: Severely irritating to eyes.
Skin: Toxic in contact with skin. Irritating to skin.
Inhalation: Toxic by inhalation. Irritating to respiratory system.
Ingestion: Very toxic if swallowed.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: 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 exposure to contact with spray or mist may chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION 3 MIXTURE COMPONENTS

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input type="checkbox"/>	Ethyl Alcohol (Ethanol, Absolute)	CAS# 64-17-5	90%	V/V	OSHA TWA 1000 ppm (1900 mg/mf)
<input checked="" type="checkbox"/>	Isopropyl Alcohol (2-propanol)	CAS# 67-63-0	5%	V/V	OSHA TWA 400 ppm, STEL 500 ppm
<input checked="" type="checkbox"/>	Methanol (Methyl Alcohol)	CAS# 67-56-1	5%	V/V	OSHA TWA 200 ppm, ACGIH STEL 250 ppm

SECTION 4 FIRST AID MEASURES

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

Fire Extinguisher Type: Water spray, Carbon dioxide, dry chemical, powder, foam.

Fire / Explosion Hazards: Above flashpoint, vapor-air mixtures are explosive within flammable limits. Vapors may flow along surfaces to distant ignition source and flash back.

Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Dispose of in a manner consistent with federal, state and local regulations.

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

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

Methods for cleaning up: If emergency personal 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

Store in a cool dry well ventilated area. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Organic cartridge or self-contained

Ventilation

Local Exhaust

Mechanical

Protective Gloves: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Other Protective Equipment: Use safe laboratory handling procedures.

Ethanol

ACGIH TLV (United States, 1/2005). Notes: 1996 Adoption Refers to Appendix A—Carcinogens.

TWA: 1880 mg/m³ 8 hour(s) Form: All forms

TWA: 1000 ppm 8 hour(s) Form: All forms

NIOSH REL (United States, 12/ 2001).

TWA: 1900 mg/m³ 10 hour(s) Form: All forms

TWA: 1000 ppm 10 hour(s) Form: All forms

OSHA PEL (United States, 8/1997).

TWA: 1900 mg/m³ 8 hour(s) Form: All forms

TWA: 1000 ppm 8 hour(s) Form: All forms

OSHA PEL 1989 (United States, 3/1989).

TWA: 1900 mg/m³ 8 hour(s) Form: All forms

TWA: 1000 ppm 8 hour(s) Form: All forms

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

NIOSH REL (United States, 12/2001). Skin

STEL: 325 mg/m³ 15 minute(s). Form: All forms

STEL: 250 ppm 15 minute(s). Form: All forms

TWA: 260 mg/m³ 10 hour(s) Form: All forms

TWA: 200 ppm 10 hour(s) Form: All forms

OSHA PEL (United States, 8/1997).

TWA: 260 mg/m³ 8 hour(s) Form: All forms

TWA: 200 ppm 8 hour(s) Form: All forms

OSHA PEL 1989 (United States, 3/1989).
STEL: 325 mg/m³ 15 minute(s). Form: All forms
STEL: 250 ppm 15 minute(s). Form: All forms
TWA: 260 mg/m³ 8 hour(s) Form: All forms
TWA: 200 ppm 8 hour(s) Form: All forms
ACGIH TLV (United States, 1/2005). Skin notes: Substance for which there is a Biological Exposure Index or Indices
STEL: 325 mg/m³ 15 minute(s). Form: All forms
STEL: 250 ppm 15 minute(s). Form: All forms
TWA: 260 mg/m³ 8 hour(s) Form: All forms
TWA: 200 ppm 8 hour(s) Form: All forms

Isopropyl Alcohol

ACGIH TLV (United States, 1/2006) Notes: Refers to Appendix A – Carcinogens. ACGIH 2003 Adoption
STEL: 400 ppm 15 minute(s) Form: All forms
TWA: 200 ppm 8 hour(s) Form: All forms
NIOSH REL (United States, 12/2001)
STEL: 1225 mg/m³ 15 minute(s) Form: All forms
STEL: 500 ppm 15 minute(s) Form: All forms
TWA: 980 mg/m³ 10 hour(s) Form: All forms
TWA: 400 ppm 10 hour(s) Form: All forms
OSHA PEL (United States, 8/1997)
TWA: 980 mg/m³ 8 hour(s) Form: All forms
TWA: 400 ppm 8 hour(s) Form: All forms
OSHA PEL 1989 (United States, 3/1989)
STEL: 1225 mg/m³ 15 minute(s) Form: All forms
STEL: 500 ppm 15 minute(s) Form: All forms
TWA: 980 mg/m³ 8 hour(s) Form: All forms
TWA: 200 ppm 8 hour(s) Form: All forms

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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.

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: splash goggles

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

Body recommended: lab coat

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

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exposure levels, the hazards of the product and the safe working limits of the selected respirator.
neoprene

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.

Recommended:

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Melting Point:	-114°C (-173.3° F)	Percent Volatile by Volume:	>99
Boiling Point:	78°C (173.3° F)	Evaporation Rate	N/E
Vapor Pressure:	50 mm Hg @ 25° C	Evaporation Standard	Not Applicable
Vapor Density:	1.6	Auto Ignition Temp	362.8°C (685°F)
Solubility in Water:	Soluble	Lower Flamm. Limit in Air	3.3%
Appearance /Odors:	Clear, colorless liquid w/ ethyl alcohol odor	Upper Flamm. Limit in Air	19%
Flash Point:	12.8 - 14°C (55 - 57.9°F)		
Specific Gravity:	0.784 @25° C		

SECTION 10 STABILITY AND REACTIVITY INFORMATION

Stability:	Stable
Conditions to Avoid:	Avoid heat and ignition sources
Materials to Avoid:	Oxidizers, silver salts, halogen halides, alkali metals, metal hydrides
Hazardous Decomposition Products:	Carbon oxides
Hazardous polymerization:	Will Not Occur
Conditions to Avoid:	None known

SECTION 11 Toxicological Information

Toxicity data- United States- Product/ ingredient name:

Ethanol			
LD50	7060 mg/kg	Oral	Rat
LD50	6300 mg/kg	Oral	Rabbit
LD50	3450 mg/kg	Oral	Mouse
LDLo	5500 mg/kg	Oral	Dog
LDLo	1400 mg/kg	Oral	Human

Methanol			
LD50	64000 ppm (4 hours)	Inhalation	Rat
LD50	5628 mg/kg	Oral	Rat
LD50	14200 mg/kg	Oral	Rabbit
LD50	7300 mg/kg	Oral	Mouse

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LD50	15800 mg/kg	Dermal	Rabbit
LDLo	143 mg/kg	Oral	Human
LDLo	428 mg/kg	Oral	Human
LDLo	6422 mg/kg	Oral	Man
LDLo	393 mg/kg	Dermal	Monkey

Isopropyl Alcohol			
LD50	5000 mg/kg	Oral	Rat
LD50	5045 mg/kg	Oral	Rat
LD50	6410 mg/kg	Oral	Rat
LD50	12800 mg/kg	Dermal	Rabbit
TDL0	1537 mg/kg	Oral	Rat
TDL0	3570 mg/kg	Oral	Rat
TDL0	5272 mg/kg	Oral	Rat

Chronic effects on humans: CARCINOGENIC EFFECTS Classified A4. (Not classifiable for humans or animals.) by ACGIH [Ethanol] Classified None by NIOSH [Isopropyl Alcohol] Classified A4 (Not classifiable for humans or animals) by ACGIH, 3 (Not classifiable for humans) by IARC [Isopropyl Alcohol]

Contains material which causes damage to the following organs: blood, the reproductive system, liver, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Other toxic effects on humans: Extremely hazardous in case of ingestion.

Very hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation (lung irritant).

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: Severely irritating to eyes.

Skin: Irritating to the skin

SECTION 12 Ecological Information

United States

Product/ ingredient name:

Isopropyl Alcohol

Pimephales promelas (LC50)	96 hour(s)	10000 mg/l
Lepomis macrochirus (LC50)	96 hour(s)	>1400 mg/l
Pimephales promelas (LC50)	96 hour(s)	6550 mg/l
Pimephales promelas (LC50)	96 hour(s)	9640 mg/l
Pimephales promelas (LC50)	96 hour(s)	10400 mg/l
Pimephales promelas (LC50)	96 hour(s)	11130 mg/l

Methanol

Daphnia magna (EC50)	48 hour(s)	>10000 mg/l
Oncorhynchus mykiss (LC50)	48 hour(s)	13200 mg/l
Lepomis macrochirus (LC50)	48 hour(s)	16000 mg/l
Daphnia magna (EC50)	96 hour(s)	>100 mg/l
Pimephales promelas (LC50)	96 hour(s)	>100 mg/l
Lepomis macrochirus (LC50)	96 hour(s)	15400 mg/l

Ethanol

Species	Period	Result
Daphnia magna (EC50)	48 hour(s)	2 mg/l
Daphnia magna (EC50)	48 hour(s)	9.3 mg/l
Daphnia magna (EC50)	48 hour(s)	>100 mg/l
Daphnia magna (EC50)	96 hour(s)	>100 mg/l
Pimephales promelas (LC50)	96 hour(s)	>100mg/l
Oncorhynchus mykiss (LC50)	96 hour(s)	13000 mg/l

Environmental precautions: No known significant effects or critical hazards.

Products of degradation: These products are carbon oxides (CO, CO₂) and water,

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

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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-product 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.

SECTION 14 Transport Information

DOT Classification: Alcohols, n.o.s. (Ethanol, Methanol, Isopropanol), 3, UN1987, PG II

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

SECTION 15 Regulatory Information

United States

HCS Classification:
Flammable liquid
Highly Toxic material
Irritating material
Target organ effects

U.S. Federal regulations:

United States inventory (TSCA 8b): listed
TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.
SARA 302/304/311/312 extremely hazardous substances: No products were found
SARA 302/304 emergency planning and notifications: No products were found
SARA 302/304/311/312 hazardous chemicals: Isopropyl Alcohol; Ethanol; Methanol
SARA 311/312 MSDS distribution- Chemical inventory- hazard identification: Isopropyl Alcohol; Ethanol; Methanol
Fire Hazard:
Immediate (acute) health hazard, Delayed (chronic) health hazard
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 substance: No products were found.
Clean Air Act (CAA) 112 regulated toxic substance: No products were found

State regulations:

Pennsylvania RTK: Isopropyl Alcohol; Ethanol; Methanol
(environmental hazard, generic environmental hazard)
Massachusetts RTK: Isopropyl Alcohol; Ethanol; Methanol
New Jersey: Isopropyl Alcohol; Ethanol; Methanol

Canada

WHMIS (Canada) :

Class B-2 : Flammable liquid
Class D-1B: Material causing immediate and serious toxic effects (Toxic)
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: Isopropyl Alcohol; Ethanol; Methanol
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

SECTION 16 Additional Information

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Flammability

Health

Reactivity

Revisions

NFPA

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