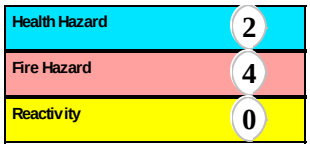
Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
		
		See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Ethyl ether, stabilized with BHT**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Diethyl Ether; Ether
Chemical Name	Ethyl Ether
Chemical Family	Not available.
Chemical Formula	C4H10O
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	E1010, E1015, E1016
CAS#	60-29-7
RTECS	KI5775000
TSCA	TSCA 8(b) inventory: Ethyl ether
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m^3)**	**STEL (mg/m^3)**	**CEIL (mg/m^3)**	**% by Weight**
1) Ethyl ether 2) Butylated hydroxytoluene (as a stabilizer)	60-29-7 128-37-0	1200 10	1520	500	100 6-8 ppm

Toxicological Data on Ingredients

Ethyl ether:
ORAL (LD50): Acute: 1215 mg/kg [Rat].
DERMAL (LD50): Acute: >20000 mg/kg [Rabbit].
VAPOR (LC50): Acute: 73000 ppm 2 hours [Rat].

Section 3. Hazards Identification

Potential Acute Health Effects

Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to liver, skin, central nervous system (CNS).
Repeated or prolonged exposure to the substance can produce target organs damage.

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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.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	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.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	180°C (356°F)
Flash Points	CLOSED CUP: -45°C (-49°F).
Flammable Limits	LOWER: 1.9% UPPER: 36%
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Extremely flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of acids.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Highly explosive in presence of open flames and sparks, of heat. Slightly explosive in presence of oxidizing materials.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. 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.
Special Remarks on Fire Hazards	Highly flammable. Will be easily ignited by heat, sparks, and flames. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. Burns with smokey greenish flame. Violent reaction or ignition on contact with halogens (e.g., bromine, chlorine), interhalogens (e.g., iodine heptafluoride), oxidants (e.g., silver perchlorate, nitrosyl perchlorate, nitryl perchlorate, chromyl chloride, fluorine nitrate, permanganic acid, nitric acid, hydrogen peroxide, peroxodisulfuric acid, iodine (VII) oxide, sodium peroxide, ozone, and liquid air), sulfur and sulfur compounds (e.g., sulfur when dried with peroxidized ether, sulfuryl chloride).
Special Remarks on Explosion Hazards	Vapors may form explosive mixtures with air. Vapor explosion hazard indoors, outdoors, or in sewers. Run off to sewer may create a fire or explosion hazard. Containers may explode when heated. Tends to form explosive peroxides under influence of light and air and when evaporated to dryness. Explosive reaction with boron triazide, bromine trifluoride, bromine pentafluoride, perchloric acid, uranyl nitrate + light, wood pulp extracts + heat. Only electrical equipment of explosion proof type (group C classification) is permitted to be operated in ether areas.

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Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill	Flammable liquid. 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 touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, moisture.
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). Do not store above 30°C (86°F). Hygroscopic; keep container tightly closed . Sensitive to light. Store in light-resistant containers. Air Sensitive

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	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
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.
Exposure Limits	TWA: 400 (ppm) from OSHA (PEL) [United States] TWA: 400 STEL: 500 CEIL: 500 (ppm) from ACGIH (TLV) [United States] TWA: 1200 STEL: 1520 CEIL: 1500 (mg/m^3) from ACGIH (TLV) [United States] STEL: 500 (ppm) [Australia] TWA: 1200 (mg/m^3) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid. (volatile, mobile liquid)
Molecular Weight	74.12g/mole
pH (1% soln/water)	Not available.

Odor	Sweetish. Pungent. Ethereal.
Taste	Burning. Sweet.
Color	Clear Colorless.

Boiling Point	34.6°C (94.3°F)
Melting Point	-116.3°C (-177.3°F)
Critical Temperature	192.7°C (378.9°F)
Specific Gravity	0.7134 (Water = 1)
Vapor Pressure	58.6 kPa (@ 20°C)
Vapor Density	2.56 (Air = 1)
Volatility	Not available.
Odor Threshold	0.83 ppm
Water/Oil Dist. Coeff.	The product is more soluble in oil; log(oil/water) = 0.9

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Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, acetone.
Solubility	Soluble in acetone. Partially soluble in cold water.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Heat, ignition sources, incompatible materials, light, air. Tends to form explosive peroxides under influence of light and air and when evaporated to dryness.
Incompatibility with various substances	Highly reactive with oxidizing agents, acids.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Air Sensitive and Hygroscopic. Also incompatiable with bromoazide, chlorine, chlorine trifluoride, chromic anhydride, chromyl chloride, lithium aluminum hydride, nitrosyl perchlorate, nitryl perchlorate, ozone, perchloric acid, permanganated, sulfuric acid, potassium peroxide, sodium peroxide, triethyl aluminum trimethyl aluminum, bromine, iodine heptaflluoride, silver perchlorate, fluorine nitrate, permanganic acid, nitric acid, hydrogen peroxide, peroxodisulfuric acid, iodine (VII) oxide, peat soils, thiotriazyl perchlorate, sulfonyl chloride, sulfur, uranyl nitrate, acetyl peroxide, and wood pulp extracts. Can react vigorously with acetyl peroxide, air, bromoazide, ClF3, CrO3, Cr(OCl)2, LiAlH2, NOClO4, O2, NClO2, (H2SO4 + permanganates), K2O2, [(C2H5)3Al + air], [(CH3)3Al + air].
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation.
Toxicity to Animals	**WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.** Acute oral toxicity (LD50): 1215 mg/kg [Rat]. Acute dermal toxicity (LD50): >20000 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 31000 0.5 hours [Mouse].
Chronic Effects on Humans	May cause damage to the following organs: liver, skin, central nervous system (CNS).
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.
Special Remarks on Toxicity to Animals	LD50 [Rabbit] -Route: Skin; Dose: >20 ml/kg LDL[Man] - Route: Oral; Dose: 260 mg/kg
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. It is not appreciably absorbed through intact skin. Eyes: Causes eye irritation. Can cause slight , reversible eye injury from contact with liquid or vapor. Inhalation: It is rapidly absorbed through lungs. Vapor mist causes irritation of the respiratory tract and mucous membranes. Affects behavior, sense organs, peripheral and central nervous systems, liver, metabolism, cardiovascular system. Symptoms may include excitement, personality changes, drowsiness, dizziness, loss of memory, headache, nausea, vomiting, paleness, decreased pulse and temperature, cardiac arrhythmias, irregular respiration, coughing, bronchodilation, increase in respiratory rate, increase in heart rate, excessive salivation, excessive sweating, muscle relaxation, anesthetic effects, and possible kidney irritation or injury, and temporarily abnormal liver function tests. Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting. Chronic Potential Health Effects:

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Skin: Prolonged or repeated skin contact can produce defatting dermatitis with dryness and cracking.
Inhalation: Prolonged or repeated inhalation can also affect behavior, metabolism, and liver with symptoms similar to that of acute inhalation. It may also cause albuminuria, and polycythemia.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORAT WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO LEACH INTO GROUNDWATER. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO WATER, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO THE WATER, THIS MATERIAL IS EXPECTED TO HAV HALF-LIFE OF LESS THAN 1 DAY. WHEN RELEASED TO WATER, THIS MATERIAL IS EXP TO QUICKLY EVAPORATE. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE. THIS MATERIAL HAS A LOG OCTANOL-WATER PARTITION COEFFICIENT LESS THAN 3.0. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO BE READILY DEGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICA WHEN RELEASED INTO THE AIR, THIS MATERIAL IS NOT EXPECTED TO BE DEGRADED B PHOTOLYSIS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO HAVE HALF-LIFE BETWEEN 1 AND 10 DAYS.

Section 13. Disposal Considerations

Waste Disposal	Consult with Local and Regional (State) authorities (waste regulators). Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	CLASS 3: Flammable liquid.
Identification	UNNA: 1155 : Diethyl ether PG: I
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Connecticut hazardous material survey.: Ethyl ether, Anhydrous Reagent
Illinois toxic substances disclosure to employee act: Ethyl ether, Anhydrous Reagent
Illinois chemical safety act: Ethyl ether, Anhydrous Reagent
New York release reporting list: Ethyl ether, Anhydrous Reagent
Rhode Island RTK hazardous substances: Ethyl ether, Anhydrous Reagent
Pennsylvania RTK: Ethyl ether, Anhydrous Reagent
Florida: Ethyl ether, Anhydrous Reagent
Minnesota: Ethyl ether, Anhydrous Reagent
Massachusetts RTK: Ethyl ether, Anhydrous Reagent
Massachusetts spill list: Ethyl ether, Anhydrous Reagent
New Jersey: Ethyl ether, Anhydrous Reagent
New Jersey toxic catastrophe prevention act: Ethyl ether, Anhydrous Reagent
Louisiana spill reporting: Ethyl ether, Anhydrous Reagent
California Director's List of Hazardous Substances: Ethyl ether, Anhydrous Reagent

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TSCA 8(b) inventory: Ethyl ether, Anhydrous Reagent
TSCA 4(a) proposed test rules: Ethyl ether, Anhydrous Reagent
TSCA 8(a) PAIR: Ethyl ether, Anhydrous Reagent
TSCA 8(a) IUR: Ethyl ether, Anhydrous Reagent
TSCA 8(d) H and S data reporting: Ethyl ether, Anhydrous Reagent: 1/26/94
TSCA 12(b) one time export: Ethyl ether, Anhydrous Reagent
CERCLA: Hazardous substances.: Ethyl ether, Anhydrous Reagent: 100 lbs. (45.36 kg)

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 200-467-2).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

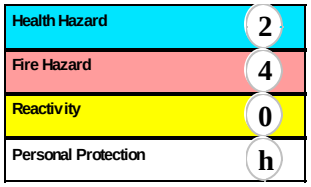
WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

DSCL (EEC)

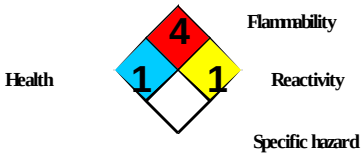
R12- Extremely flammable.
R19- May form explosive peroxides.
R22- Harmful if swallowed.

S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S29- Do not empty into drains.
S33- Take precautionary measures against static discharges.

HMIS (U.S.A.)

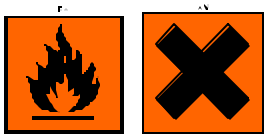


National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.

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Lab coat.

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

Splash goggles.

Section 16. Other Information

MSDS Code	**E3210**
References	Not available.
Other Special Considerations	Not available.

Validated by Sonia Owen on 4/28/2008.	**Verified by Sonia Owen.** **Printed 6/24/2008.**

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.