SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Ethyl Ether ≥99% ACS Grade
CAS number	60-29-7
Synonyms	Diethyl ether; Et2O; Ethoxyethane; Ether

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory Chemicals

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable Liquids	Category 1
Acute Oral Toxicity	Category 4
Specific Target Organ Toxicity (single exposure)	Category 3
Target Organ(s) - Respiratory system, Central nervous system (CNS)	

Specific Target Organ Toxicity (repeated exposure)	Category 2
Target Organ(s) - Liver	
Aspiration Toxicity	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard statements:
Extremely flammable liquid and vapor.
Harmful if swallowed.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be harmful if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:
Prevention: Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Keep cool.
Response: Get medical attention/advice if you feel unwell.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
Fire: In case of fire, use CO2, dry chemical, or foam for extinction.
Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.
Repeated exposure may cause skin dryness or cracking.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Ethyl Ether	Diethyl ether; Et2O; Ethoxyethane	60-29-7	<=100%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

In case of skin contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

If swallowed Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea, and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media CO_2, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Unsuitable extinguishing media Water may be ineffective.

5.2 Specific hazards arising from the substance or mixture

Extremely flammable. Risk of ignition. Vapors may travel to source of ignition and flash back. Vapors may form explosive mixtures with air. Containers may explode when heated. May form explosive peroxides.
Hazardous Combustion Products: Carbon monoxide (CO). Carbon dioxide (CO_2). Peroxides.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

5.4 Further information

Flash Point -49.0 °F (-45.0 °C) Closed Cup

Autoignition Temperature 160 °C / 320 °F

Explosion limits

Upper 36.0 vol %

Lower 1.9 vol %

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
1	4	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes, or clothing.

6.2 Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up

Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Wear personal protective equipment/face protection. Handle under an inert atmosphere. Ensure adequate ventilation. Avoid contact with skin, eyes, or clothing. Do not breathe mist/vapors/spray. Keep away from open flames, hot surfaces, and sources of ignition. If peroxide formation is suspected, do not open or move container. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Flammables area. Store under an inert atmosphere. Keep away from open flames, hot surfaces, and sources of ignition. May form explosive peroxides. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep away from heat, sparks, and flame. Keep container tightly closed in a dry and well-ventilated place.

Incompatibilities

Strong oxidizing agents. Strong acids.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Ethyl ether	(Vacated) TWA	400 ppm	1200 mg/m3
	(Vacated) STEL	500 ppm	1500 mg/m3
	TWA	400 ppm	1200 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Ethyl ether	TWA	400 ppm
	STEL	500 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Ethyl ether	IDLH	1900 ppm

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type: Low boiling organic solvent. Type AX. Brown. Conforming to EN371.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Sweet, ether-like
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-176.8 °F (-116 °C)
Boiling Point/Range	95 °F (35 °C)
Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	

Upper	36 % v/v
Lower	1.9 % v/v
Vapor Pressure	587 mbar @ 20 °C
Vapor Density	2.56 (Air = 1.0)
Density	0.71 (68 °F (20 °C))
Solubility	Soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	160 °C / 320 °F
Decomposition Temp	No information available
Viscosity	0.2448 cP at 20 °C
Molecular Formula	C4 H10 O
Molecular Weight	74.12 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Formation of peroxides possible. Vapors may form explosive mixture with air.

10.2 Chemical stability

May form explosive peroxides. Air sensitive. Light sensitive. Hygroscopic

10.3 Possibility of hazardous reactions

May form explosive peroxides.

10.4 Conditions to avoid

Incompatible products. Heat, flames, and sparks. Exposure to air. Exposure to light. Exposure to moisture. Keep away from open flames, hot surfaces, and sources of ignition.

10.5 Incompatible materials

Strong oxidizing agents, Strong acids.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO2), Peroxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl ether	1215 mg/kg (Rat)	20 mL/kg (Rabbit)	32000 ppm (Rat) 4h

Skin corrosion/irritation

No information available.

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Ethyl ether	60-29-7	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

Respiratory system, Central nervous system (CNS).

Specific target organ toxicity - repeated exposure

Liver.

Reproductive toxicity

No information available.

Chronic effects

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea, and vomiting.

11.2 Additional Information

See actual entry in RTECS for complete information.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Ethyl ether	LC50	Lepomis macrochirus	> 10000 mg/L, 96h static
	LC50	Pimephales promelas	2560 mg/L, 96h flow through
	EC50	Microtox	5600 mg/L, 15 min
	EC50	Water Flea	165 mg/L, 24h

12.2 Persistence and degradability

Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its volatility.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Ethyl ether - 60-29-7	U117	-

SECTION 14: Transport information

DOT (US)

UN Number	UN1155
Proper Shipping name	Diethyl ether
Hazard Class	3
Packaging Group	I

IMDG

UN Number	UN1155
Proper Shipping name	Diethyl ether
Hazard Class	3
Packaging Group	I

IATA

UN Number	UN1155
Proper Shipping name	Diethyl ether
Hazard Class	3
Packaging Group	I

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)
Listed, Ethyl ether (CAS #60-29-7), RQ: 100 lb.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous
See Section 2 for more information.

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Listed, Ethyl ether (CAS #60-29-7), TQ: 10000 lb.

Safe Drinking Water Act
Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace
Not listed.

US state regulations

US. Massachusetts RTK - Substance List
Listed, Ethyl ether (CAS #60-29-7).

US. New Jersey Worker and Community Right-to-Know Act
Listed, Ethyl ether (CAS #60-29-7).

US. Pennsylvania Worker and Community Right-to-Know Law
Listed, Ethyl ether (CAS #60-29-7).

California Proposition 65
Not listed.

SECTION 16: Other information

Date of Issue: 04/19/2019

Revised on 05/29/2026

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.