Material Safety Data Sheet

1. Product and Company Identification

Product name : **Ethyl Alcohol**

Chemical formula : C2H6O

Synonyms : Ethanol; Ethyl Alcohol; /4; Alcohol; Alcohol Anhydrous; Algrain; Anhydrol; Ethyl Hydrate; Ethyl Hydroxide; Jaysol; Tecsol; UN 1170

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Ethanol	64-17-5	100%

3. Hazards Identification

Emergency Overview

Flammable liquid and vapor. Vapor may cause flash fire.
May cause respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression.

Potential Health Effects

Inhalation : Irritation, difficulty breathing, headache, drowsiness, symptoms of drunkenness, nausea.

Eye contact : Irritation, tearing.

Skin contact : Irritation, rash.

Ingestion : Rash, low body temperature, vomiting, digestive disorders, irregular heartbeat, headache, drowsiness, symptoms of drunkenness, disorientation, diluted pupils, lung congestion, liver damage, convulsions, coma.

Chronic Health Hazard : Not available.

4. First Aid Measures

Eye contact : Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

Ingestion : Contact a poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower thank hips to help prevent aspiration. If person is unconscious, turn head

to side. Get medical attention immediately.

Inhalation	:	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.
Note to physicians	:	For ingestion, consider gastric lavage.

5. Fire-Fighting Measures

Suitable extinguishing media	:	Alcohol-resistant foam, regular dry chemical, carbon dioxide, water. Large fires: Use alcohol-resistant foam or flood with fine water spray.
Specific hazards	:	Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Gas/air mixtures are explosive.
Fire fighting	:	Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

6. Accidental Release Measures

Occupational spill/release	:	Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.
Additional advice	:	None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Store in accordance with all current regulations and standards. Grounding and bonding required. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH	:	1000 ppm STEL
OSHA (final)	:	1000 ppm TWA; 1900 mg/m3 TWA
OSHA (vacated)	:	1000 ppm TWA; 1900 mg/m3 TWA
NIOSH	:	1000 ppm TWA; 1900 mg/m3 TWA

IDLH

3300 ppm

Engineering measures/Ventilation

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

Personal protective equipment

Respiratory protection	:	The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 3300 ppm – Any supplied-air respirator. Any self-contained breathing apparatus with a full facepiece. Emergency or planned entry into unknown concentrations or IDLH conditions – Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Escape – Any appropriate escape-type, self-contained breathing apparatus.
Hand protection	:	Wear appropriate chemical resistant gloves.
Eye protection	:	Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and body protection	:	Wear appropriate chemical resistant clothing.

9. Physical and Chemical Properties

Form	:	Volatile liquid.
Color	:	Colorless.
Odor	:	Pleasant odor.
Molecular weight	:	46.07
Vapor pressure	:	40 mmHg @ 19°C
Vapor density	:	1.59 (air = 1)
Boiling point	:	78°C
Melting point	:	-117°C
Water solubility	:	Soluble.
Specific gravity	:	0.7893 (water = 1)
Evaporation rate	:	1.4 (carbon tetrachloride = 1)
Solvent solubility	:	Soluble: benzene, ether, acetone, chloroform, methanol, organic solvents.

10. Stability and Reactivity

Stability	:	Stable under normal conditions.
Conditions to avoid	:	Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.
Materials to avoid	:	Halo carbons, metal salts, metals, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, combustible materials.
Hazardous decomposition products	:	Thermal decomposition products: oxides of carbon.

11. Toxicological Information

The components of this material have been reviewed in various sources and the following endpoints are published:

ETHYL ALCOHOL (64-17-5)	:	Oral LD50 Rat: 7060 mg/kg

Acute Toxicity Level

ETHYL ALCOHOL (64-17-5)	:	Slightly toxic: inhalation, ingestion.

Component Carcinogenicity

ACGIH	:	A3 – Confirmed Animal Carcinogen with Unknown Relevance to Humans
IACR	:	Monograph 96 [in preparation] (Group 1 (carcinogenic to humans))
DFG	:	Category 5 (low carcinogenic potency)
OSHA	:	Present

Local Effects

ETHYL ALCOHOL (64-17-5)	:	Irritant: Inhalation, skin, eye.

Target Organs

ETHYL ALCOHOL (64-17-5)	:	Central nervous system, liver.

Medical Conditions Aggravated by Exposure

Central nervous system disorders, kidney disorders, liver disorders.

Additional Data

May cross the placenta. May be excreted in breast milk.

12. Ecological Information

Aquatic Toxicity

ETHYL ALCOHOL (64-17-5)	:	Fish: 96 Hr LC50 Oncorhynchus mykiss: 12.0 – 16.0 ml/L [static]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static]; 96 Hr LC50 Pimephales promelas: 13400 – 15100 mg/L [flow-through] Invertebrate: 48 Hr LC50 Daphnia magna: 9268 – 14221 mg/L; 24 Hr EC50 Daphnia magna: 10800 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L [static]

13. Disposal Considerations

Waste from residues / unused products	:	Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
Contaminated packaging	:	Return cylinder to supplier.

14. Transport Information

DOT (US only)

Proper shipping name	:	Ethanol
Class	:	3, Packing Group II
UN/ID No.	:	UN1170
Labeling	:	Flammable Liquid

15. Regulatory Information

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes
Chronic: Yes
Fire: Yes
Reactive: No
Pressure: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
ETHYL ALCOHOL	64-17-5	Yes	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at www.americangasgroup.com.