Material Safety Data Sheet

Ethanol BMG

Available Sizes:

- Catalog # OXGE-005, 70%, Storage: Ambient temperature
- Catalog # OXGE-008, 80%, Storage: Ambient temperature
- Catalog # OXGE-006, 96%, Storage: Ambient temperature

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethanol BMG

Catalog Numbers: OXGE-005, OXGE-008, OXGE-006

Company Identification:

- LLC Ox-Gen
- Address: 14th km Natakhtari, Mtskheta Municipality 3308, Georgia
- For information, call: (+995) 599 374 374
- Emergency Number: (+995) 571 608 601

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percentage	EINECS/ELINCS
64-17-5	Ethyl Alcohol	Varies (70%, 80%, 96%)	200-578-6
7732-18-5	Water	Varies	231-791-2

Hazard Symbols: F

Risk Phrases: 11

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Colorless clear liquid.
Flash Point: 16.6°C.
Flammable liquid and vapor.
May cause central nervous system depression. Causes severe eye irritation. Causes respiratory tract irritation. Causes moderate skin irritation. This substance has caused adverse reproductive and fetal effects in humans.

Target Organs: Kidneys, heart, central nervous system, liver.

Potential Health Effects:

- **Eye:** Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.
- **Skin:** Causes moderate skin irritation. May cause cyanosis of the extremities.
- **Ingestion:** May cause gastrointestinal irritation with nausea, vomiting, and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma, and possible death due to respiratory failure.
- **Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness, and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.
- **Chronic:** May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

Section 4 - First Aid Measures

- **Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
- **Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
- **Ingestion:** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
- **Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.
Antidote: Replace fluid and electrolytes.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures

above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 16.6°C
Autoignition Temperature: 363°C
Explosion Limits, Lower: 3.3 vol %
Upper: 19.0 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g., vermiculite, sand, or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks, and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid, or nitric acid.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits:

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m³ TWA	3300 ppm IDLH; 1000 ppm TWA; 1900 mg/m³ TWA
Water	None listed	None listed	None listed

Personal Protective Equipment:

- **Eyes:** 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:** Wear appropriate protective gloves to prevent skin exposure.
- **Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- **Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Appearance:	Colorless
Odor:	Mild, rather pleasant
pH:	Not available
Vapor Pressure:	59.3 mm Hg @ 20°C
Vapor Density:	1.59
Evaporation Rate:	Not available
Viscosity:	1.200 cP @ 20°C
Boiling Point:	78°C
Freezing/Melting Point:	-114.1°C
Decomposition Temperature:	Not available
Solubility:	Miscible
Specific Gravity/Density:	0.790 @ 20°C
Molecular Formula:	C_2H_5OH
Molecular Weight:	46.0414

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, tetranitromethane, acetyl chloride, lithium, acetyl bromide, bromine trifluoride, dioxygen difluoride, potassium, uranium dioxide.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 64-17-5: KQ6300000

LD50/LC50:

- Draize test, rabbit, eye: 500 mg Severe
- Draize test, rabbit, eye: 500 mg/24H Mild
- Draize test, rabbit, skin: 20 mg/24H Moderate
- Inhalation, mouse: LC50 = 39 gm/m³/4H
- Inhalation, rat: LC50 = 20000 ppm/10H
- Oral, mouse: LD50 = 3450 mg/kg
- Oral, rabbit: LD50 = 6300 mg/kg
- Oral, rat: LD50 = 9000 mg/kg
- Oral, rat: LD50 = 7060 mg/kg

Carcinogenicity:

- CAS# 64-17-5:
  - ACGIH: A4 - Not Classifiable as a Human Carcinogen
  - California: Not listed.
  - NTP: Not listed.
  - IARC: Not listed.
- Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".
- Teratogenicity: No information available.
- Reproductive Effects: Adverse reproductive effects have occurred in humans.
- Mutagenicity: No information available.
- Neurotoxicity: No information available.

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C

- Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) ria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test

Environmental Fate: When spilled on land it is apt to volatilize, biodegrade, and leach into the groundwater. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Physical: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

Section 14 - Transport Information

US DOT IATA RID/ADR IMO Canada TDG

Shipping Name:	**ETHANOL**
Hazard Class:	3
UN Number:	UN1170
Packing Group:	II

Section 15 - Regulatory Information

US FEDERAL

TSCA:

- CAS# 64-17-5 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List: None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules: None of the chemicals in this product are under a Chemical Test Rule.

Section 12b: None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule: None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs: None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances: None of the chemicals in this product have a TPQ.

SARA Codes: CAS # 64-17-5: acute, chronic, flammable.

Section 313: No chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE: CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: F
Risk Phrases: R 11 Highly flammable.
Safety Phrases: S 16 Keep away from sources of ignition - No smoking. S 33 Take precautionary measures against static discharges. S 7 Keep container tightly closed. S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)
CAS# 64-17-5: 0
CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
CAS# 64-17-5 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.

Canada - WHMIS This product has a WHMIS classification of B2, D2A, D2B.

Canadian Ingredient Disclosure List CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits: CAS# 64-17-5: OEL-AUSTRALIA

1000 ppm (1900 mg/m³) OEL-BELGIUM
1000 ppm (1880 mg/m³) OEL-CZECHOSLOVAKIA
1000 mg/m³;STEL 5000 mg/m³ OEL-DENMARK
1000 ppm (1900 mg/m³) OEL-FINLAND
1000 ppm (1900 mg/m³);STEL 1250 ppm (2400 mg/m³) OEL-FRANCE
1000 ppm (1900 mg/m³);STEL 5000 ppm OEL-GERMANY
1000 ppm (1900 mg/m³) OEL-HUNGARY
1000 mg/m³;STEL 3000 mg/m³ OEL-THE NETHERLANDS
1000 ppm (1900 mg/m³) OEL-THE PHILIPPINES
1000 ppm (1900 mg/m³) OEL-POLAND
1000 mg/m³ OEL-RUSSIA
1000 mg/m³ OEL-SWEDEN
1000 ppm (1900 mg/m³) OEL-SWITZERLAND
1000 ppm (1900 mg/m³) OEL-THAILAND
1000 ppm (1900 mg/m³) OEL-TURKEY
1000 ppm (1900 mg/m³) OEL-UNITED KINGDOM
1000 ppm (1900 mg/m³) JAN9 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV.

Section 16 - Additional Information

MSDS Creation Date: 02.11.2023
Revision #1 Date: 03.11.2023

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall LLC Ox-Gen be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if LLC Ox-Gen has been advised of the possibility of such damages.