

GLACIAL GRAIN SPIRITS, LLC
270 20th St NW BENSON, MN 56215
320.842.3255 (8am-5pm M-F)
800.424.9300 (Chemtrec)

Section 1: PRODUCT IDENTIFICATION

Product Name: **Ethyl Alcohol, 200 Proof**

General or Generic ID: Absolute Alcohol, Ethyl Alcohol, Ethanol, and Grain Alcohol

Section 2: HAZARDS IDENTIFICATION

Signal word: **DANGER**

Hazard statement(s)

H225 - Highly flammable liquid and vapor.

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

H370 - Causes damage to organs.

Precautionary statement(s)

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 - Keep container tightly closed.

P235 - Keep cool.

P240 - Ground and bond container and receiving equipment.

P241 - Use explosion-proof equipment.

P242 - Use non-sparking tools.

P243 - Take action to prevent static discharges.

P260 - Do not breathe vapors.

P264 - Wash hands thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P271 - Use only outdoors or in a well-ventilated area.

P280 - Wear protective gloves, protective clothing, and eye protection.

P301 + P312 - IF SWALLOWED: Call a POISON CENTER if you feel unwell.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing Rinse skin with water [or shower].

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P370 + P378 - In case of fire: Use appropriate media for extinction.

P403 + P235 - Store in a well-ventilated place. Keep cool.

P405 - Store locked up.

P501 - Dispose of contents into an approved container/waste stream.



Section 3: COMPONENTS

<u>INGREDIENT</u>	<u>CAS #</u>	<u>% (BY WT.)</u>
Ethyl Alcohol	64-17-5	99-100

Section 4: FIRST AID

IF ON SKIN: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use.

IF IN EYES: Flush with large amounts of water, lifting upper and lower lids occasionally. Get medical attention.

IF SWALLOWED: Immediately drink two glasses of water and induce vomiting by either giving IPECAC syrup or by placing finger at back of throat. Never give anything by mouth to an unconscious person, get medical attention immediately.

IF BREATHED: If affected, remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet and get medical attention.

PRIMARY ROUTE(S) OF ENTRY: INHALATION, SKIN CONTACT

Section 5: FIRE AND EXPLOSION INFORMATION

EXTINGUISHING MEDIA: Alcohol foam or water fog or carbon dioxide or dry chemical.

HAZARDOUS DECOMPOSITION PRODUCTS: May form toxic materials, carbon dioxide and carbon monoxide, etc.

FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

SPECIAL FIRE & EXPLOSION HAZARDS: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights. Other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point.

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

NFPA CODES: HEALTH - 2 FLAMMABILITY - 3 REACTIVITY - 0

Section 6: ACCIDENTAL RELEASE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to hood.

LARGE SPILL: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, dike area or spill to prevent spreading. Pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs notify proper authorities as required that a spill has occurred.

Section 7: HANDLING AND STORAGE

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid). It is good practice to triple rinse with water empty drums. All hazard precautions given in this datasheet must be observed. Store material away from heat and flames. Above ground storage must meet applicable codes.

Section 8: EXPOSURE CONTROL, PERSONAL PROTECTIVE EQUIPMENT

Occupational exposure limits

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

<u>Components</u>	<u>Type</u>	<u>Value</u>
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m ³ 1000 ppm

US. ACGIH Threshold Limit Values

<u>Components</u>	<u>Type</u>	<u>Value</u>
Ethyl alcohol (CAS 64-17-5)	TWA	1000 ppm
	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

<u>Components</u>	<u>Type</u>	<u>Value</u>
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m ³ 1000 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection	Chemical goggles are recommended.
Skin protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Other: Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9: PHYSICAL PROPERTIES

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Clear liquid; invisible vapor.
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point/ freezing point	Melting point/range: -114 °C (-173°F)
Initial boiling point and boiling range	172 °F (78°C)
Flash point	57.2 °F (14.0 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	3.3 % v/v
Flammability limit – upper (%)	19 % v/v
Vapor pressure	59.5 hPa at 68 °F (20 °C)
Vapor density	Not available.
Relative density	0.789 g/mL at 77 °F (25 °C)
Solubility (water)	Completely soluble.
Partition coefficient (n-octanol/water)	log Pow: -0.349 at 75 °F (24 °C)
Auto-ignition temperature	685.4 °F (363 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not available.
Oxidizing properties	Not oxidizing

Section 10: STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents, Alkali metals, Peroxides
Hazardous decomposition Products	No hazardous decomposition products are known.

Section 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes mild skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
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Ethyl alcohol (CAS 64-17-5)

Acute

Inhalation

LC50	Rat	30,000 mg/L, 4 Hours
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Oral

LD50	Rat	10470 mg/kg
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Dermal

LD50	Rabbit	15,800 mg/kg
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Skin corrosion/irritation Rabbit (Ethanol) – No skin irritation 24hr (OECD Test Guideline 404)

Serious eye damage/eye Irritation Rabbit (Ethanol) – Moderate eye irritation (OECD Test Guideline 405)

Respiratory or skin sensitization No data available (Ethanol)

Germ cell mutagenicity No data available (Ethanol)

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

No component of this product present at levels $\geq 0.1\%$ is identified as probable, possible or confirmed human carcinogen by IARC.

NTP Report on Carcinogens

No component of this product present at levels $\geq 0.1\%$ is identified as probable, possible or confirmed human carcinogen by NTP.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

No component of this product present at levels $\geq 0.1\%$ is identified as probable, possible or confirmed human carcinogen by OSHA.

Reproductive toxicity No data available.

Specific target organ toxicity single exposure No data available.

Specific target organ toxicity repeated exposure No data available.

Aspiration hazard No data available.

Chronic effects Central nervous system depression, narcosis, damage to the heart. Stomach irregularities based on human evidence. See also RTECS: KQ6300000

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
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Ethyl alcohol (CAS 64-17-5)

Aquatic

Algae	EC50	Freshwater algae	275 mg/l, 72 hours
Fish	LC50	Freshwater fish	14200 mg/l, 96 hours
Invertebrate	LC50	Freshwater invertebrate	5012 mg/l, 48 hours
	NOEC	Freshwater invertebrate	9.6 mg/l, 9 days

Persistence and degradability 95% Readily biodegradable.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow) Accumulation in organisms is not expected.

Mobility in soil No data available.

Other adverse effects No data available.

Section 13: WASTE DISPOSAL CONSIDERATIONS

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORTATION INFORMATION

DOT Classification: Hazardous FLAMMABLE LIQUID (173.115)

Placard Identification: UN1170, Class 3, PG II

Proper shipping name: Ethanol

Poison inhalation hazard: No

Section 15: REGULATORY

U.S. FEDERAL REGULATIONS

OSHA Hazards (HCS 1994)

Flammable liquid, Eye irritation, Skin irritation

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

Comprehensive Response Compensation and Liability Act (CERCLA)

None of the chemicals in this material have an RQ.

TSCA Inventory Listing

None of the chemicals in this material have a significant New Use Rule (SNUR) under TSCA.

The following chemicals are listed on the TSCA inventory.

<u>Components</u>	<u>CAS-No.</u>
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Ethanol	64-17-5
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Clean Water Act (CWA)

This chemical is not listed as a Hazardous Substance under the CWA.

This chemical is not listed as Priority Pollutants under the CWA.

This chemical is not listed as a Toxic Pollutant under the CWA.

Clean Air Act (CAA)

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 or Class 2 Ozone depleters.

Superfund Amendments and Reauthorization Act (SARA) 302 Status

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

No chemicals in this product have a TPQ.

SARA 311/312 Classification

CAS# 64-17-5 "Fire hazard", "Immediate (acute) health hazard"

SARA 313 Chemical:

This product does not contain any chemicals subject to the reporting requirements of section 313 of Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372).

US. EPA CERCLA Hazardous Substances (40 CFR 302)

None

INTERNATIONAL REGULATIONS

WHMIS Classification

Class B, Division 2: Flammable liquid.

European Union

Classification according to Regulation (EU) 1272/2008.

Flammable liquids, Category 2

Eye irritation, Category 2

Australia. Inventory of Chemical Substances (AICS)	Listed
Japan. Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan. Industrial Safety & Health Law (ISHL) Inventory	Listed
Canada. Domestic Substances List (DSL) Inventory	Listed
Canadian Non-Domestic Substance Listing (NDSL)	Not listed
European Inventory of Existing Commercial Chemical Substances (EINECS) Listing	Listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS)	Listed
Korea. Existing Chemicals Inventory (KECI)	Listed
China. Inventory of Existing Chemical Substances (IECSC)	Listed
Mexico. National Inventory of Chemical Substances (INSQ)	Listed
New Zealand. Inventory of Chemicals (NZIoC)	Listed
Switzerland. Inventory of Notified New Substances (CHINV)	Listed
Taiwan. National Existing Chemical Inventory (NECI)	Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65

Does not contain ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER

THIS SDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

The information accumulated herein is believed to be accurate, but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.