

PrecautionaryP201 - Obtain special instructions before use **statements**P202 - Do not handle until all safety precautions have been read & understood **(GHS-US)**:

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

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof electrical, lighting, ventilating equipment

P242 - Use only non-sparking tools

P243 - Take precautionary measures against static discharge

P260 - Do not breathe mist, spray, vapors

P264 - Wash exposed skin thoroughly after handling

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

P280 - Wear eye protection, face protection, protective clothing, protective gloves

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

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

P308+P313 - IF exposed or concerned: Get medical advice/attention

P332+P313 - If skin irritation occurs: Get medical advice/attention

P337+P313 - If eye irritation persists: Get medical advice/attention

P362+P364 - Take off contaminated clothing and wash it before re P370+P378

- In case of fire: Use carbon dioxide (CO₂), powder, alcoholresistant foam to extinguish

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

P405 - Store locked up

P501 - Dispose of contents/container to comply with local, state and federal regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	% Weight
Ethyl Alcohol (SDA) 40-B, 200	64-17-5	[75-85]
Purified Water	7789-20-0	(10-15)
Glycerol	56-81-5.	(1-2)
Hydrogen Peroxide	12058-66-1	(0.1 – 0.15)
Total Ingredients		100

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

4. First Aid Measures

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

EMERGENCY OVERVIEW: Flammable liquid and vapor. Irritating to eyes and skin. May cause irritation of respiratory tract. May affect central nervous system. Aspiration hazard if swallowed—can enter lungs and cause damage. This substance has caused adverse reproductive and fetal effects in humans.

ROUTES OF ENTRY/FIRST AID: EYES CONTACT: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

SKIN CONTACT: Formulated to be safe to hands as antiseptic

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. In case of 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. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Central nervous system disorders, Pre-existing eye disorders, liver disorders, skin disorders.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptomatically.

5. Fire Fighting Measures

EXTINGUISHING MEDIA: For SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use AR-AFFF alcohol resistant firefighting foam, water spray or fog. Use water spray to cool fire-exposed containers. Water may be ineffective. DO NOT use straight streams of water.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: Use AR-AFFF alcohol resistant firefighting foam. Water may be ineffective on flames but may be used to cool fire exposed containers. Wear Self Contained Breathing Apparatus (SCBA) when fighting fire in a confined space.

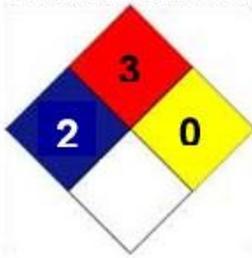
UNUSUAL FIRE AND EXPLOSION HAZARDS: (Define specific hazards arising from the chemical e.g., nature of any hazardous combustion products) Flames are invisible in daylight. Extremely flammable materials may release vapors that travel long distances, ignite, and flash back.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, aldehydes, and ketones

FLAMMABLE LIMITS IN AIR, UPPER: 19.0% (% BY VOLUME) LOWER: 3.3%

FLASH POINT: (C: 13 °C) METHOD USED: Closed Cup AUTOIGNITION TEMPERATURE: 685 °F 363 °C

NFPA HAZARD CLASSIFICATION:



HEALTH=2
FLAMMABILITY=3
REACTIVITY=0
OTHER=N/A

HMIS HAZARD CLASSIFICATION (0-4 scale):

Undenatured Fuel Ethanol	
HEALTH	1
FLAMMABILITY	3
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H
Splash goggles, gloves, chemical apron, vapor respirator	

6. Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: In case of a large spill, wear splash goggles, full suit, vapor respirator, boots, gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product.

ENVIRONMENTAL PRECAUTIONS: Keep run-offs out of municipal sewers and open bodies of water. Comply with local, state and national laws and regulations.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: For SMALL SPILL, dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. For LARGE SPILL, 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. Land-spill apply appropriate foam to diminish vapor and fire hazard. Water-spill use natural barriers or oil spill control booms to limit spill travel. Allow to aerate. Air-spill apply water spray or mist to knock down vapors.

7. Handling and Storage

PERSONAL PRECAUTION FOR SAFE HANDLING: Wear personal protective equipment. Ensure adequate ventilation. Use explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing.

CONDITIONS FOR SAFE STORAGE (any incompatibilities): Keep containers tightly closed in a dry, cool and well-ventilated area. Protect container against physical damage. Detached or outside storage is preferred. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. All ignition sources should be eliminated. NFPA 30, Flammable and Combustible Liquids Code, should be followed for all storage and handling. Consult local fire codes for additional storage information.

8. Exposure Control and Personal Protection

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

INGREDIENTS	ACGIH	NIOSH	OSHA-FINAL PELs
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m ³ TWA

ENGINEERING CONTROLS: VENTILATION: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT(PPE): RESPIRATORY PROTECTION: Follow the OSHA respirator regulations found in 29 CFR 1910.134, Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

EYE PROTECTION: Wear appropriate protective eyeglasses or chemical safety goggles.

SKIN PROTECTION: Wear appropriate protective gloves and clothing to prevent skin exposure.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: In case of large spill, splash goggles, chemical suit, vapor respirator, rubber boots, chemical-resistant gloves and 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).

9. Physiochemical Properties

APPEARANCE: Clear, Colorless

PHYSICAL STATE: Liquid

COLOR: Colorless

ODOR: Sweet

pH AS SUPPLIED: Neutral

FREEZING POINT: F: -174.0 °F C: -114.3 °C

BOILING POINT: F: 176 °F C: 79 °C

MELTING POINT: F: -173.4 °F (NTP, 1992) C: -114.1 °C

FLASH POINT: F: 55°F (NTP, 1992) C: 12.8 °C

EVAPORATION RATE (BASIS=1): Not Available.

FLAMMABILITY (by %volume): UPPER FLAMMABILITY LIMIT: 3.3% (NTP, 1992) LOWER FLAMMABILITY LIMIT: 19.0% (NTP, 1992)

VAPOR PRESSURE (mmHg): 59.3 mmHg @ 68°F 20 °C

VAPOR DENSITY (AIR = 1): 1.59 @ °F: Ambient air temperature C: Ambient air temperature

SOLUBILITY IN WATER: Easily soluble in cold water, hot water, methanol, diethyl ether. Soluble in acetone.

PARTITION COEFFICIENT n-octanol/water: -0.32 (logPow)

AUTO-IGNITION TEMPERATURE: 689 °F (USCG, 1999) 365 °C

DECOMPOSITION TEMPERATURE: No data available

SPECIFIC GRAVITY (H₂O = 1): 0.790 @ 68°F 20 °C

PERCENT SOLIDS BY WEIGHT: Not Available

PERCENT VOLATILE: BY WT/ BY VOL: Not Available C: Not Available

VOLATILE ORGANIC COMPOUNDS (VOC): WITH WATER: Not Available

LBS/GAL WITHOUT WATER: Not Available LBS/GAL

MOLECULAR WEIGHT: 46.0414

VISCOSITY: 1.200 cP @ 68 °F 0 °C

10. Stability and Reactivity

REACTIVITY:

Ethanol rapidly absorbs moisture from the air. Can react vigorously with oxidizers. The following oxidants have been demonstrated to undergo vigorous/explosive reaction with ethanol: barium perchlorate, bromine pentafluoride, calcium hypochlorite, chloryl perchlorate, chromium trioxide, chromyl chloride, dioxygen difluoride, disulfuryl difluoride, disulfuryl difluoride, fluorine nitrate, hydrogen peroxide, iodine heptafluoride, nitric acid nitrosyl perchlorate, perchloric acid permanganic acid, peroxodisulfuric acid, potassium dioxide, potassium perchlorate, potassium permanganate, ruthenium(VIII) oxide, silver perchlorate, silver peroxide, uranium hexafluoride, uranyl perchlorate. Ethanol reacts violently/explodes with the following compounds: acetyl bromide (evolves hydrogen bromide) acetyl chloride, aluminum, sesquibromide ethylate, ammonium hydroxide & silver oxide, chlorate, chromic anhydride, cyanuric acid + water, dichloromethane + sulfuric acid + nitrate (or) nitrite, hydrogen peroxide + sulfuric acid, iodine + methanol + mercuric oxide, manganese perchlorate + 2,2-dimethoxy propane, perchlorates, permanganates + sulfuric acid, potassium superoxide, potassium tert-butoxide, silver & nitric acid, silver perchlorate, sodium hydrazide, sulfuric acid + sodium dichromate, tetrachlorosilane + water. Ethanol is also incompatible with platinum, and sodium. No really safe conditions exist under which ethyl alcohol and chlorine oxides can be handled. Reacts vigorously with acetyl chloride.

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID (STABILITY): Incompatible materials. Heat, source of ignition.

POSSIBILITY OF HAZARDOUS REACTIONS:

Contact with Bromine pentafluoride is likely to cause fire or explosion. Ethanol ignites on contact with chromyl chloride. Ethanol ignites on contact with iodine heptafluoride gas. It ignites then explodes upon contact with nitrosyl perchlorate. Addition of platinum black catalyst caused ignition (ethyl alcohol 200 proof). Ethanol has an explosive reaction with the oxidized coating around potassium metal. Ethanol ignites and then explodes on contact with acetic anhydride + sodium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous (III) oxide platinum, potassium-tert-butoxide + acids. Ethanol forms explosive products in reaction with the following compound: ammonia + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver fulminate) silver nitrate (forms ethyl nitrate) silver(I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas). Sodium Hydrazide + alcohol can produce an explosion. Alcohols should not be mixed with mercuric nitrate, as explosive mercuric fulminate may be formed. May form explosive mixture with manganese

perchlorate + 2,2-dimethoxypropane. Addition of alcohols to highly concentrate hydrogen peroxide forms powerful explosives. Explodes on contact with calcium hypochlorite Vapor may explode if ignited in an enclosed area. Containers may explode when heated or involved in a fire.

INCOMPATIBILITY MATERIAL: 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, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide.

11. Toxicological Information

TOXICOLOGICAL INFORMATION: The toxicity data of this product has not been determined by testing or research, but to our best knowledge, this product is minimally toxic. The toxicity data shown below is for reference only.

ROUTES OF EXPOSURE: Absorbed through skin. Eye contact. Inhalation. Ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: **CONTACT WITH EYES:** It can cause serious irritation to eyes and symptoms may include redness, tearing and soreness.

CONTACT WITH SKIN: Generally safe to skin. Repeated use can become irritant to skin. For long-time or repeated contact, it can cause skin dryness.

INHALATION: Under normal conditions of use and handling, no inhalation hazard is present. It may cause irritation to respiratory system if inhaling concentrated vapor of this liquid. Symptoms may include coughing, drowsiness, dizziness and tightness in chest.

INGESTION: Harmful by ingestion. May cause irritation to intestinal tract, stomach, liver and kidney. Symptoms may include nausea, vomiting, belly ache and diarrhea.

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE

SHORT-TERM EFFECTS: The substance irritates the eyes. Inhalation of high concentration of vapor may cause irritation of the eyes and respiratory tract. The substance may cause effects on central nervous system.

LONG-TERM EFFECTS: The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration. Chronic ingestion of ethanol may cause liver cirrhosis.

NUMERICAL MEASURES OF TOXICITY: LD50/LC50: CAS# 64-17-5: 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 = 7060 mg/kg; Oral, rat: LD50 = 9000 mg/kg;<BR.

IRRITATION DATA: Draize test, rabbit, eye: 500 mg Severe; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 20 mg/24H Moderate

CARCINOGENICITY: CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

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: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

REPRODUCTIVE EFFECTS: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

NEUROTOXICITY: No information available.

MUTAGENICITY: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).

CHROMATID EXCHANGE: Human, Lymphocyte = 500 ppm/72H (Continuous).

12. Ecological Information

ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE): Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test. When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

PERSISTENCE AND DEGRADABILITY: Biodegradation is expected to occur rapidly in the environment based on numerous screening tests using different types of inocula and incubation periods. Ethanol was degraded with half-lives on the order of a few days using microcosms constructed with a low organic sandy soil and groundwater, indicating it is unlikely to be persistent in the environment.

BIOACCUMULATIVE POTENTIAL: Bioaccumulation is not significant. This product is readily biodegradable.

MOBILITY IN SOIL: Very high mobility

OTHER ADVERSE EFFECTS: No information available.

13. Disposal Considerations

DISPOSAL METHOD: 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. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animals, aquatic, and plant life; and conformance with environmental and public health regulations.

RCRA HAZARD CLASS: RCRA P-Series-None listed. RCRA U-Series-None listed.

DESCRIPTION OF WASTE RESIDUES AND INFORMATION ON THEIR SAFE HANDLING AND METHODS OF DISPOSAL, INCLUDING ANY CONTAMINATED PACKAGING: Carbon dioxide, carbon monoxide, ethanol vapor can go through rapid photochemical reaction in atmosphere

14. Transport Information

U.N. GHS TRANSPORT REQUIREMENT UN NUMBER: UN 1170

PROPER SHIPPING NAME: Ethanol TRANSPORT HAZARD CLASS: 3 (Flammable Liquid)

PACKING GROUP: III

LABEL STATEMENT: None listed

MARINE POLLUTANT: This product is not designated as a marine pollutant by the Department of Transportation (49 CFR 172.101, Appendix B)

SPECIAL PRECAUTIONS FOR USER: Follow safe handling and storage procedures, Check atmosphere for explosiveness and oxygen deficiency.

15. regulatory Information

U.S. FEDERAL REGULATIONS TOXIC SUBSTANCE CONTROL ACT (TSCA): CAS# 64-17-5 is listed on the TSCA inventory. None of the chemicals in this material have a Significant New Use Rule (SNUR) under TSCA.

OCCUPATIONAL, SAFETY AND HEALTH ADMINISTRATION (OSHA): Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT (CERCLA): None of the chemicals in this material have an RQ.
CLEAN WATER ACT (CWA): This chemical is not listed as Hazardous Substances under the CWA. This chemical is not listed as Priority Pollutants under the CWA. This chemical is not listed as Toxic Pollutants under the CWA.

CLEAN AIR ACT (CAA): This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) CODES: CAS# 64-17-5: Immediate, delayed, fire

SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None of the chemicals in this product have a TPQ.

SARA 313 REPORTABLE INGREDIENTS: No chemicals are reportable under Section 313.

STATE REGULATIONS: CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts.

INTERNATIONAL REGULATIONS: European/International Regulations European Labeling in Accordance with EC Directives CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.

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