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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product	Ethanol Anhydrous 99.5% Min (USP/EP/BP/JP)	**Revision date**	2026-11-16
Version	1.0	**Brand**	Richest

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

Product name	Ethanol Anhydrous 99.5% Min (USP/EP/BP/JP)
Synonyms	Ethyl alcohol; Absolute ethanol; Anhydrous ethyl alcohol; Grain alcohol; Methyl carbinol
CAS No.	64-17-5
EC No.	200-578-6
Molecular formula	C2H6O
Molecular weight	46.07 g/mol
Relevant identified uses	General-purpose solvent for coatings, inks and cleaning formulations; Solvent and processing aid for pharmaceutical and personal-care manufacturing where the compendial grade is accepted; Laboratory reagent and analytical sample preparation; Chemical synthesis and extraction processes
Uses advised against	No specific uses advised against were identified in the reviewed sources.
Company	Richest Group
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SECTION 2: Hazards identification

GHS Classification	Flammable liquids, Category 2; Serious eye damage/eye irritation, Category 2 (Greenfield SDS)
Pictogram(s)	GHS02; GHS07
Signal word	Danger
Hazard statement(s)	H225 Highly flammable liquid and vapour; H319 Causes serious eye irritation
Precautionary statement(s)	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources; no smoking; P233 Keep container tightly closed; P240 Ground and bond container and receiving equipment; P241 Use explosion-proof electrical, ventilating and lighting equipment; P242 Use non-sparking tools; P243 Take action to prevent static discharges; P264 Wash thoroughly after handling; P280 Wear protective gloves, protective clothing and eye/face protection; P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing; rinse skin with water or 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; P337+P313 If eye irritation persists: Get medical advice/attention; P370+P378 In case of fire: Use appropriate media to extinguish; P403+P235 Store in a well-ventilated place; keep cool; P501 Dispose of contents/container in accordance with applicable regulations

SECTION 2: Hazards identification

Other hazards	Drinking alcoholic beverages is a known human carcinogen listed by the International Agency for Research in Cancer (IARC) and the National Toxicology Program (NTP). Alcohol consumption causes cancers of the oral cavity, pharynx, larynx, oesophagus, colorectum, liver (hepatocellular carcinoma) and female breast.

SECTION 3: Composition/information on ingredients

Component	Ethanol Anhydrous 99.5% Min (USP/EP/BP/JP)
CAS No.	64-17-5
EC No.	200-578-6
Classification	Flammable liquids, Category 2; Serious eye damage/eye irritation, Category 2 (Greenfield SDS)
Concentration	≥99.5% v/v; water ≤0.100% v/v

SECTION 4: First-aid measures

If inhaled	Inhalation: move to fresh air and call a physician if symptoms persist.
In case of skin contact	Skin/hair: remove contaminated clothing immediately and rinse with water or shower.
In case of eye contact	Eyes: flush for at least 15 minutes, remove contact lenses if present and easy, continue rinsing and obtain medical attention if irritation persists.
If swallowed	Ingestion: rinse mouth and obtain medical attention if symptoms occur.
Most important symptoms and effects	No data available
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to medical personnel.

SECTION 5: Fire-fighting measures

Suitable extinguishing media	Use water fog, alcohol-resistant foam, dry chemical powder or carbon dioxide; do not use a water jet. Vapors can form explosive mixtures and travel to remote ignition sources. Move containers if safe, avoid fumes, and use SCBA and full protective clothing.
Unsuitable extinguishing media	No data available
Special hazards arising from the chemical	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:
Advice for firefighters	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:

SECTION 6: Accidental release measures

Personal precautions and emergency procedures	Avoid contact with the material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Environmental precautions	Prevent uncontrolled release to drains, soil and watercourses.
Methods for containment and cleaning up	Keep personnel upwind, eliminate all ignition sources, ventilate and use non-sparking tools and antistatic precautions. Stop the flow if safe, dike large spills, absorb with vermiculite, sand or earth, place in suitable containers and avoid discharge to drains, soil or watercourses. Never return spilled material to the original container.

SECTION 7: Handling and storage

Precautions for safe handling	Keep away from flames, heat and ignition sources; do not smoke. Use explosion-proof general/local exhaust ventilation, grounded equipment and non-sparking tools. Avoid eye contact and prolonged exposure, wear suitable PPE and observe strict industrial hygiene.
Conditions for safe storage, including incompatibilities	Store tightly closed in a cool, dry, well-ventilated, fire-protected area away from direct sunlight, heat, sparks, open flames and strong oxidants. Ground and bond containers, prevent static accumulation, and use explosion-proof storage provisions.

SECTION 8: Exposure controls/personal protection

Occupational exposure limit values	380 mg/m³
Biological limit values	No biological limit values were identified in the reviewed sources.
Appropriate engineering controls	Greenfield SDS lists ACGIH STEL 1000 ppm and several Canadian OELs at 1000 ppm; apply the legally applicable local limit. Use explosion-proof ventilation, chemical goggles, suitable chemical-resistant gloves and protective clothing. Provide eyewash/shower and use an approved respirator selected by a qualified professional if airborne levels require it.
Eye/face protection	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:
Skin and body protection	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:
Respiratory protection	Use suitable respiratory protection if exposure limits may be exceeded or dust, mist or vapour is generated.
Thermal hazards	No specific thermal hazards were identified in the reviewed sources; see Sections 5 and 10.

SECTION 9: Physical and chemical properties

Physical state	Liquid
Colour	colorless
Odour	alcohol-like
Melting point / freezing point	−114°C
Boiling point / boiling range	78°C
Flammability	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:
Explosion / flammability limits	LEL: 3.3 % (NTP, 1992); UEL: 19 % (NTP, 1992)
Flash point	13°C closed cup
Auto-ignition temperature	400 °C
Decomposition temperature	No data available
pH	No data available
Viscosity	1.074 mPa.s at 25 °C
Solubility	1000 g/L at 20°C; completely miscible
Partition coefficient n-octanol/water	[-0.31]
Vapour pressure	VP: -73 °C at 1 Pa; -56 °C at 10 Pa; -34 °C at 100 Pa; -7 °C at 1 kPa (all extrapolated); 29.2 °C at 10 kPa; 78.0 °C at 100 kPa
Density and/or relative density	0.789 g/mL at 25°C (general ethanol SDS reference; not a specification for every candidate concentration)
Relative vapour density	1.59 (NTP, 1992) - Heavier than air; will sink (Relative to Air)

SECTION 9: Physical and chemical properties

Particle characteristics	Not applicable (liquid).
Appearance	Clear liquid; characteristic sweet, alcohol-like odor
Autoignition temperature	363 °C (Greenfield SDS)
Density at 20 °c	0.78816 kg/L
Water solubility	Completely soluble/miscible
Vapor pressure	59.5 hPa (Greenfield SDS)
Vapor density	1.6 (air = 1)
Flammable limits	3.3–19 vol% (Greenfield SDS)
Dynamic viscosity	0.5 mPa·s at 70 °C (Greenfield SDS)
Surface tension	21.97 mN/m at 25 °C
Refractive index	Index of refraction: 1.3611 at 20 °C/D

SECTION 10: Stability and reactivity

Reactivity	Highly flammable. Water soluble.
Chemical stability	Stable and non-reactive under normal use, storage and transport. Avoid heat, sparks, open flames, temperatures above the flash point and strong oxidizing agents. Hazardous combustion/decomposition products include carbon monoxide and carbon dioxide.
Possibility of hazardous reactions	Acetyl chloride reacts violently with ethanol or water, [Rose, (1961)]. Acetyl bromide reacts violently with alcohols or water, [Merck 11th ed., 1989]. Mixtures of alcohols with concentrated sulfuric acid and strong hydrogen peroxide can cause explosions.
Conditions to avoid	NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.
Incompatible materials	Incompatible materials: Alkali metals, oxidizing agents, peroxides.; Strong oxidizing agents such as chlorine, nitric acid, permanganate, or chromate in acid solution react, in some cases violently, with it to produce oxidation products.
Hazardous decomposition products	No data available

SECTION 11: Toxicological information

Toxicological summary	Greenfield SDS reports dermal LD50 >2000 mg/kg (rat), inhalation LC50 39 g/m³ for 4 hours (mouse) and oral LD50 7000–11000 mg/kg (rat). Causes serious eye irritation; prolonged skin contact may cause temporary irritation and prolonged inhalation may be harmful.
Serious eye damage irritation	GHS classification: supplier SDS additionally classifies serious eye irritation Category 2A
Acute toxicity	LD50 Mouse iv 2.0 g/L; LD50 Mouse sc 8.3 g/L; LD50 Mouse ip 0.9 g/L; LC50 Mouse inhalation 39 g/cu m/4 hr
Health effects	Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]:

SECTION 12: Ecological information

Environmental fate	The product is not classified as environmentally hazardous in the Greenfield SDS. Reported aquatic values include 96-hour LC50 13480 mg/L for Pimephales promelas and 48-hour LC50 5012 mg/L for Ceriodaphnia dubia. Large or frequent spills can still be harmful; avoid uncontrolled release.

SECTION 12: Ecological information

Ecotoxicity	Toxicity Threshold (Cell Multiplication Inhibition Test) Scenedesmus quadricauda (green algae) 5000 mg/L; Toxicity Threshold (Cell Multiplication Inhibition Test) Microcystis aeruginosa (algae) 1450 mg/L
Persistence degradability	ANAEROBIC: Anaerobic degradation (thermophilic digestion, 54 °C) of ethanol (5 mL of a 5% aqueous ethanol solution) produced approximately 1000 mL gas/g sample using seed which had been prepared in a synthetic medium(1).
Bioaccumulative potential	An estimated BCF of 3 was calculated in fish for ethanol(SRC), using a log Kow of -0.31(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).
Mobility in soil	A log Koc of 0.20 has been reported for ethanol(1). According to a classification scheme(2), this Koc value suggests that ethanol is expected to have very high mobility in soil. Transport was not retarded in an ethanol leaching test using a shallow sand and gravel test aquifer in Merrick Co, central Platte Valley, Nebraska(3).
Other adverse effects	The rate constant for the vapor-phase reaction of ethanol with photochemically-produced hydroxyl radicals is 3.27X10-12 cu cm/molecule-sec at 25 °C(1). This corresponds to an atmospheric half-life of about 5 days at an atmospheric concentration of 5X10+5 hydroxyl radicals per cu cm(2).

SECTION 13: Disposal considerations

Product disposal methods	Dispose of contents and container in accordance with local, regional, national and international regulations. Prevent discharge into drains, soil and watercourses, and manage absorbed spill material as chemical waste using an authorized facility.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with local regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	1170
UN Proper Shipping Name	ETHANOL
Transport hazard class(es)	3
Packing group	II
Environmental hazards / Marine pollutant	No; not a marine pollutant (Greenfield SDS: TDG, IATA and IMDG)
Special precautions for user	Read the SDS and emergency procedures before handling. IMDG EmS F-E, S-D; IATA ERG Code 3L. Use approved flammable-liquid packaging and observe current modal quantity limits and segregation rules.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	EC 200-578-6. Greenfield SDS lists ethanol on inventories including TSCA, AICIS, Canada DSL, China IECSC, EINECS, Japan ENCS, Korea ECL, New Zealand, PICCS and Taiwan TCSI. Denaturation, excise control and pharmaceutical use are separate jurisdiction- and application-specific matters.

SECTION 16: Other information

Full text of H-Statements	H225 Highly flammable liquid and vapour; H319 Causes serious eye irritation
Revision date	2026-11-16

SECTION 16: Other information	
Version	1.0
References	Supplier technical documents, public SDS/COA/TDS and regulatory sources reviewed. Public data citations are listed below. Public data sources: Ethyl Alcohol Anhydrous, P025EAAN — product, grade and packaging: https://greenfield.com/products?ProductID=PROD241 | QSPEC000240 Ethyl Alcohol Anhydrous Product Specification, Rev. 3: https://greenfield.com/Files/Product%20Assets/Specsheets/QSPEC000240_Spec%20Sheet%20-%20rev.%203%20Ethyl%20Alcohol%20Anhydrous%20(Lined%20Steel%20Pails).pdf | Ethyl Alcohol Anhydrous Safety Data Sheet, version 05, revision 20 March 2026: https://greenfield.com/Files/Product%20Assets/SDS/SDS_CDN_EN_EthylAlcoholANH.pdf | ICSC 0044 — Ethanol (Anhydrous): https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_card_id=0044&p_lang=en&p_version=1 | PubChem Ethanol (CID 702): https://pubchem.ncbi.nlm.nih.gov/compound/702
Abbreviations	CAS: Chemical Abstracts Service; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; SDS: Safety Data Sheet.
Disclaimer	The information in this SDS applies to the specified product and is provided in good faith based on information available to Richest Group at the date of issue. It describes health, safety and environmental requirements and does not constitute a guarantee of product properties. Users must assess suitability and comply with applicable regulations.