

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Product Identification: Absolute alcohol 0746Nr Ghs06 Div.01 sds Absolute alcohol

Date of issue: March 28, 2024

Date of Compilation : January 24, 2014

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Revision Number : 06

Version Number : 0746Nr Ghs06 Div.01 sds Absolute alcohol

Supersedes date : January 12, 2024

Supersedes version : 0746Nr Ghs05 Div.03 sds Absolute alcohol



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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

PRODUCT NAME Absolute alcohol

CAS RN 64-17-5

EC# 200-578-6

SYNONYMS Ethanol, Absolute alcohol, Alcohol, Ethyl alcohol,

SYSTEMATIC NAME Ethyl alcohol

MOLECULAR FORMULA C₂H₆O

STRUCTURAL FORMULA:

∕\oH

FACTORY OFFICE:

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1.3 Emergency telephone:

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) Call

Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India): 000-800-100-7141

Product Uses:

• Absolute alcohol is used as a motor fuel and fuel additive. It is the principal psychoactive constituent in alcoholic beverages. Absolute alcohol is an important industrial ingredient and has widespread use as a base chemical for other organic compounds. These include ethyl halides, ethyl esters, diethyl ether, acetic acid, ethyl amines, and, to a lesser extent, butadiene. Absolute alcohol is used in medical wipes and in most common antibacterial hand sanitizer gels at a concentration of about 62% v/v as an antiseptic. Absolute alcohol kills organisms by denaturing their proteins and dissolving their lipids and is effective against most bacteria and fungi, and many viruses, but is ineffective against bacterial spores Absolute alcohol is sometimes used to treat poisoning by other, more toxic alcohols, in particular methanol and ethylene glycol. Absolute



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alcohol competes with other alcohols for the alcohol dehydrogenase enzyme, lessening metabolism into toxic aldehyde and carboxylic acid derivatives, and reducing one of the more serious toxic effect of the glycols to crystallize in the kidneys. Absolute alcohol is miscible with water and is a good general purpose solvent. It is used in paints, tinctures, markers, and personal care products such as perfumes and deodorants etc.

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Flammable liquids: Category 2 Eye irritation: Category 2A

Hazard Pictogram: GHS 02, GHS 07

Signal Word: Danger!





HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H225: Highly flammable liquid and vapor.
- H319: Causes serious eye irritation.

PRECAUTIONARY STATEMENTS

Prevention

- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P242: Use only non-sparking tools.
- P243: Take action to prevent static discharges.
- P264: Wash hands thoroughly after handing.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do continue rinsing.
- P337+313: If eye irritation persists: Get medical advice/attention.

Storage

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

Disposal

• P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3:

COMPOSITION / INFORMATION ON INGERDIENTS

Sr.No.	Chemical	CAS#	EC#	Purity	
1	Absolute alcohol	64-17-5	200-578-6	Min 99 %(GC)	



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SECTION 4: FIRST AID MEASURES

Key symptoms

Acute effects:

• It causes serious eye irritation.

Chronic effects:

• Chronic effects of Absolute alcohol, presenting after a few days of "binge" drinking. They become acutely starved because of cessation in oral intake as a result of nausea, vomiting, abdominal pain from gastritis, hepatitis, pancreatitis, or a concurrent acute illness. The patient may appear acutely ill with dehydration, tachypnea, tachycardia, and hypotension. The patient may be hypothermic or have a mildly elevated temperature. Sepsis, meningitis, pyelonephritis, or pneumonia may be present, and delirium tremens may develop.

FIRST AID:

- Eyes: If in eyes rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek immediate medical attention.
- **Skin:** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
- Inhalation: Rest and medical observation are therefore essential. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell.
- **Ingestion**: If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek prompt/immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION 5: FIRE-FIGHTING MEASURES

Flash Point: 14.0 °C (57.2 °F) - closed cup Flammability: Highly flammable liquid and vapor

Extinguishing media:

Appropriate extinguishing media: Water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher. Use water spray to keep fire exposed containers cool. Do NOT use water jets. Major fires may be extinguished with flooding amounts of water from a distance. Water spray may be used to knock down vapors. Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use "alcohol" foam, dry chemical or carbon dioxide.

Special Protective Equipment and Precautions for Fire Fighter:

- Evacuate the area and fight fires from a safe distance.
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions or as per locally valid procedures.
- Fire fighters must wear Self Contained Breathing Apparatus (SCBA) and full protective clothing.
- Report any run-off of fire waters contaminated with this chemical as per local and federal procedures applicable.

Unusual fire and explosion hazard:

- Consider isolating the fire when it involves the material and permitting it to burn it self out. Move all personnel out of the fire area. Move away in event of any explosion. Keep at safe distance.
- Do not allow water to enter container, because of exothermic reaction.
- Flashback along vapor trail may occur. Closed container exposed to heat may explode. Irritating vapors and toxic fumes of cabon monoxide, carbon di-oxide, oxide of nitroge may be released in fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Minor Spills

• Clean up all spills immediately following relevant Standard Operating Procedures.

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- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Wipe up.
- Decontaminate all equipment.
- Use non-sparking tools.

Major Spill

- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Clear area of personnel and move upwind.
- Stop leaks if possible.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- Contain spill with sand, earth or vermiculite.
- Spread area with lime or absorbent material, and leave for at least 1 hour before washing.
- Clean up all tools and equipment.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.

SECTION 7: HANDLING AND STORAGE

Handling

- Do not breathe vapor or mist.
- Wear protective gloves/clothing and eye/face protection.
- Wash thoroughly after handling.
- Ground and secure containers when dispensing or pouring product.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Launder contaminated clothing before re-use.
- If on skin or hair, IMMEDIATELY remove all contaminated clothing and rinse/shower with plenty of water.
- Use in a well-ventilated place/Use protective clothing commensurate with exposure levels.

Storage

- Store at ambient temperature in a dry and well ventilated place.
- Store in a flame proof area.
- Store away from incompatible materials.
- Keep only in original container. Keep securely closed when not in use.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION



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Control parameters

Components	CAS-No.	Value	Control parameter	Basis
Absolute Alcohol	64-17-5	TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans.			
		TWA	1,000 ppm 1,900 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1,000 ppm 1,900 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		TWA	1,000 ppm 1,900 mg/m3	USA. NIOSH Recommended Exposure Limits

Exposure controls

- Appropriate Engineering Controls:
- Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is additionally to be used where exposure is possible Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection:

- Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained. Liquid is volatile and causes irritation on uncovered skin and it may be harmful if swallowed.
- **Eyes**: Safety goggles/ Chemical Safety glasses and Face shield. Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Hands: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact:

• Material: butyl-rubber

Minimum layer thickness: 0.3 mmBreak through time: 480 min

Splash contact:

Material: Nitrile-rubber.

• Minimum layer thickness: 0.2 mm

Break through time: 38 min

Clothing: Boots and clothing to prevent contact.

• **Skin and body protection:** Impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respirator: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).



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Hygiene measures

• Handle in accordance with good industrial hygiene and safety practice.

• Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

• Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value	
1.	Appearance	Clear colorless liquid.	
2.	Odor	Mild, rather pleasant; like wine or whiskey. Weak, ethereal, vinous odor	
3.	Odor Threshold	100 ppm 188 mg/m ³	
4.	Melting point	-114 °C (-173 °F)	
5.	Boiling point	78 °C (172 °F)	
6.	Flash point	13.0 °C (57.2 °F) - closed cup	
7.	Evaporation rate (n-BuAc=1)	2.4	
8.	Explosive limits	Upper explosion limit: 27,7 %(V) Lower explosion limit: 3,1 %(V)	
9.	Vapor pressure	59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F)	
10.	Vapor density (air=1)	1.6	
11.	Relative density/Density	0.7893 g/cu cm at 20 deg C	
12.	Solubility	Soluble in water, ether, acetone, chloroform, in oils/fats, methanol and in acids.	
13.	Log Kow (octonol/water)	-0.3 (Estimated)	
14.	Auto-ignition temperature	363.0 °C- 425.0 °C at 1.013 hPa	
15.	Decomposition temperature	Distillable in an undecomposed state at normal pressure	
16.	рН	7,0 at 10 g/l at 20 °C	
17.	Viscosity	1.074 mPa.s at 20 deg C	
18.	Molecular Weight	46.07	
19.	Flammable Material	Yes	
20.	Corrosive material	Not available	
21.	Explosive material	Not available	

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity**: Vapours may form explosive mixture with air.
- Stability: Stable under recommended storage condition. Hygroscopic.
- Possibility of Hazardous reactions: Risk of explosion/exothermic reaction with: hydrogen peroxide, perchlorates, perchloric acid, Nitric acid, mercury(II) nitrate, permanganic acid, Nitriles, peroxi compounds, Strong oxidizing agents, nitrosyl compounds Peroxides, sodium, Potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, Chlorine, Alkali metals, Alkaline earth metals, alkali oxides, Ethylene oxide, silver with Nitric acid, silver compounds with Ammonia, potassium permanganate with conc. sulfuric acid.



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Risk of ignition or formation of inflammable gases or vapours with: halogen-halogen compounds, chromium(VI) oxide, chromyl chloride, Fluorine, hydrides, Oxides of phosphorus, platinum, Nitric acid with potassium permanganate

- Conditions to avoid: Keep away from heat, sparks and flame. Keep away from sources of ignition. Containers may rupture or explode if exposed to heat. Keep away from incompatible chemicals.
- Incompatible chemicals: Alkali metals, Ammonia, Oxidizing agents, Peroxides. Strong acids. Strong bases. Strong oxidizers.
- **Hazardous decomposition:** Under Combustion: gives off irritating fumes, flammable gses and oxides of carbon. Vapors may form explosive mixture with air.

SECTION 11: TOXICOLOGICAL INFORMATION

(a) Acute Toxicity:

- It causes skin irritation and serious eye irritation. It is suspected of damaging fertility or the unborn child. It may cause respiratory irritation. It causes damage to organs. (Central nervous system, optic nerve)(Oral, Dermal).
- **RTECS** # : KQ6300000

No.	Parameter	Data	Reference
1	Acute Oral Toxicity	Oral LD50 Rat 7060 mg/kg	RTECS
2	Acute Oral Toxicity	Rat - male and female - 10470 mg/kg	(OECD Test Guideline 401)
3	Acute Skin Toxicity	No data is available	-
4	Acute Inhalation	Inhalation LC50 Rat 20000 ppm 10 h	RTECS
5	Acute Inhalation	Rat - male and female - 4 h - 124,7 mg/l - vapor	(OECD Test Guideline 403)

(b) Skin Corrosion/Irritation;

- Skin Rabbit
- Result: No skin irritation 24 h (OECD Test Guideline 404).

(c) Serious Eye Damage/Irritation;

- Eyes Rabbit
- Result: Causes serious eye irritation. (OECD Test Guideline 405).

(d) Respiratory or Skin Sensitization;

- Maximization Test Guinea pig Result: negative (OECD Test Guideline 406)
- Remarks: (in analogy to similar products) The value is given in analogy to the following substances: Methanol

(e) Germ Cell Mutagenicity;

• Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: dominant lethal test

Species: Mouse

Application Route: Oral



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Method: OECD Test Guideline 478

Result: Positive results were obtained in some in vivo tests.

(f) Carcinogenicity;

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- **OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a Carcinogen or potential carcinogen by OSHA.

(g) Reproductive Toxicity;

No effects observed.

(h) STOT-single exposure

• No data available

(i) STOT- repeated exposure

• No data available

(j) Aspiration Hazard.

No data available.

SECTION 12: ECOLOGICAL INFORMATION

(a) Ecotoxicity:

- Fish ChV: 250mg/l
- Absolute Alcohol is not chronically toxic to fish.

(b) Persistence and Degradability:

• It is expected to be biodegradable in aerobic and anaerobic conditions. Absolute Alcohol is estimated not to be persistent in the environment.

(c) Bio accumulative Potential (Predicted):

- BCF = 3
- Log Kow = -0.3 (Estimated)
- Ethanol is not expected to bioaccumulate in the food chain because it does not exceed the BCF criteria

(d) Mobility (Predicted):

- Koc: 2.75(Estimated). It is expected to have high mobility in soil.
- Henry's Law Constant: 5.0X10-6 atm-cu m/mole.
- Log Kow: -0.3(Estimated).

(e) Environment Fate:

Based on the environmental modeling, this material has classified as not chronically toxic to fish. It is expected to be
biodegradable in aerobic and anaerobic conditions and have high mobility in soil. Since this is an estimated result it is
recommended that the material should be disposed into the environment. The material should never be disposed into the
sewage.

SECTION 13:

DISPOSAL CONSIDERATIONS

Waste treatment methods

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- Exert extra care in igniting, as this material is Highly Flammable.



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 Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: TRANSPORT INFORMATION

• This substance is considered to be Hazardous for transport by Air/Rail/Road and Sea and thus regulated by IATA/ ICAO/ US DOT/IMO/IMDG.

S.No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land transport	US DOT	UN 1170	Ethanol	3	II
Maritime Transport	IMDG	UN 1170	ETHANOL	3	II
Air Transport	IATA	UN 1170	Ethanol	3	II

Hazard Label

Highly Flammable



Environmental hazards

• Marine pollutant: No.

SECTION 15: REGULATORY INFORMATION

Classification as per CLP Regulation 1272/2008:

• Hazards Class and Category: Flammable Liq. Cat.2; Eye irritation: Category 2A

• Hazard Statements: H225; H319

Chemical Inventory Lists:	Status
TSCA:	Present
EINECS:	200-578-6
Canada(DSL/NDSL):	Listed/DSL
Japan:	2-202
Korea:	KE=13217
Australia:	Listed
China: IECSC	Present

US information



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OSHA Hazards

• Flammable liquid, Target Organ Effect, Carcinogen.

SARA 302 Components

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

SARA 313 Components

• SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard.

California Prop. 65 Components

 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: OTHER INFORMATION

Compilation information of safety data sheet

Chemical: Absolute alcohol

CAS #: 64-17-5

File Name: 0746Nr Ghs06 Div.01 sds Absolute alcohol

Revision Number: 06

Date of Revision: March 28, 2024 **Revision Due Date:** February, 2027

(a) A key or legend to aberrations and acronyms used in the safety data sheet;

- PBT =Persistent Bio accumulative and Toxic.
- vPvB= Very Persistent and Very Bio accumulative.
- SCBA= Self Contained Breathing Apparatus.
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit.
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- IDLH= Immediately Dangerous to Life or Health.
- UEL= Upper Explosive Limit.
- LEL= Lower Explosive Limit.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Program.
- IARC= International Agency for Research on Cancer.
- EPA=Environmental Protection Agency.
- TSCA= Toxic Substances Control Act.
- CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act.
- SARA= Superfund Amendments and Reauthorization Act.
- NFPA= National Fire Protection Association.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- CSR=Chemical Safety Report.
- BCF = Bio Concentration Factor.
- DNEL = Derived No Effect Level.
- PNEC = Predicted No Effect Concentration.
- TLV = Threshold Limit Value.



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- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation .Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonized System.
- ADR = Accord European relative au transport international de merchandises.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- EmS = Emergency measures on Sea.
- ICAO = International Civil Aviation Organization.
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation.

(b) Key Literature reference and sources for data

Biographical reference and data sources

- Globally Harmonized System of Classification and Labelling of Chemicals.
- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 830/2015.

Internet

- RTECS
- Pubchem

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product (End of Safety Data Sheet)