

Material Safety Data Sheet

Section 1 Chemical Product and Company Identification

MSDS Name: 70% Ethanol Solution
Product Code: 40-1706-10
Synonyms: ethanol, grain alcohol, fermentation alcohol, alcohol, methylcarbinol, absolute alcohol, absolute ethanol, anhydrous alcohol, alcohol dehydrated, algrain, anhydrol, Cologne spirit, duplicating fluid 100C, ethyl hydrate, ethyl hydroxide, jaysol, jaysol s, molasses alcohol, potato alcohol, sekundasprit, spirits of wine, spirit, synasol, tecsol
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Section 2 - Composition, Information on Ingredients

CAS:	64-17-5	CAS:	7732-18-5
Chemical Name:	Ethanol	Chemical Name:	Water
%:	70	%:	30
EINECS:	200-578-6	EINECS:	None
Risk Phrases:	F - Highly Flammable Xn - Harmful, R11, R20, R21, R22, R36, R37, R38, R40.	Risk Phrases:	None

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOUR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Potential Health Effects

Eye: Vapours are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.
Skin: Skin irritation through repeated contact.
Ingestion: Consumption of industrial ethanol has the same effects as alcoholic drinks: headaches, vertigo, drowsiness, unconsciousness/coma, with irritation of digestive mucous membranes (aggravated in the case of pure alcohol which is a dehydrating agent).
Inhalation: Inhalation of vapours irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache
Chronic: Not available

Section 4 - First Aid Measures

Eye: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.
Skin: Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse.

- Ingestion: Remove patient to open air. If breathing stops give artificial respiration/oxygen. If patient loses consciousness, give oxygen. If coma, remove patient to hospital.
- Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Chronic: Seek medical attention immediately.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Fire: Flash point: 14oC CC

Autoignition temperature: 363oC

Flammable limits in air % by volume: lel: 3.3; uel: 19

Extremely Flammable Liquid and Vapour! Vapour may cause flash fire.

Explosion: If sealed containers heated above flash point there is chance of explosion. Explosive compounds evolved upon reaction with silver nitrate or mercury nitrate.

Extinguishing Media: Emulsifiers for polar solvents - Powder - CO2 - Water spray should be used for cooling and diluting. Do not use water jet.

Section 6 - Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapours, to protect personnel attempting to stop leak, and to flush spills away from exposures.

Section 7 - Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product. Avoid aluminium packaging.

Section 8 - Exposure Controls, Personal Protection

Airborne Exposure Limits:

Ethanol

OEL 5000ppm (9500 mg/m³)

OES 1000ppm (1900 mg/m³)

Ventilation System: In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear protective gloves and clean body-covering clothing.
Eye Protection: Safety glasses. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Physical State: Clear, volatile, hygroscopic liquid.
Colour: Colourless
Odour: Fragrant, alcohol-like
pH: Not available
Vapour Pressure: at 20° C : 5.85 kPa,
at 34.9° C : 13.3 kPa,
at 63.5° C : 53.3 kPa.
Vapour Density: 1.59
Evaporation Rate: Not available
Viscosity: Non-viscous
Boiling Point: 78oC @ 760 mm Hg
Freezing/Melting Point: -114oC
Decomposition Temperature: Not available
Solubility in water: Miscible in all proportions in water.
Specific Gravity/Density: 0.789
Molecular Formula: Not available
Molecular Weight: Not available
% Volatiles by volume @ 21°C: 70 (for solution)

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, dust generation, excess heat.
Incompatibilities with Other Materials: Strong reaction with powerful oxidizers such as nitro-chromics, sulpho-chromics, nitric acid, perchlorates, peroxides and generally all unstable organic compounds or minerals rich in oxygen. Reaction with alkaline metals produces a release of hydrogen and can be violent.
Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition. Controlled oxidization leads mainly to aldehyde and acetic acid and, depending on conditions, formic aldehyde.
Hazardous Polymerization will not occur.

Section 11 - Toxicological Information

Chemical name: Ethanol
CAS: 64-17-5
LD50/LC50: LD 50 (oral, rat): 6 200 mg/kg
LC 50 (inhalation, rat): > 8 000 mg/l/4 h
LD 50 (dermal, rabbit): > 20 000 mg/kg
Oral-CHD LDLO 2000 mg kg-1
Oral-Mouse LD50 3450 mg kg-1
Oral-Rat LD50 7060 mg kg-1
Oral-Rat LD50 7060 mg kg-1
Inhalation-Rat LC50 20000 ppm/10h
Carcinogenicity: Not classified as carcinogenic

Other: Chronic toxicity

By chronic ingestion:

Alcoholism characterised by behaviour, memory, digestive and cardio-vascular problems. In an industrial environment, risk of accidents due to problems of concentration and possible interaction with the toxic effects of other chemical products, notably chlorinated solvents, amides, oximes and thuirames. Through repeated inhalation of ethanol vapour: Irritation to eyes, upper respiratory tracts, headaches, fatigue, diminished concentration and awareness. Locally repeated cutaneous contact can lead to irritation.

Chemical name: Water

CAS: 7732-18-5

LD50/LC50: None

Carcinogenicity: Not carcinogenic

Other: Not available

Section 12 - Ecological Information

Environmental Fate:

This material is expected to be readily biodegradable.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

Persistence and Degradability:

This material is not expected to be persistent and is readily biodegradable.

Bioaccumulative Potential:

This material is not bioaccumulative.

Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved incinerator or disposed in an approved waste facility. Processing, use or contamination of this product may change the waste management options. District and local disposal regulations may differ from Governmental disposal regulations. Dispose of container and unused contents in accordance with Governmental, District and local requirements.

Section 14 - Transport Information

Shipping Name: ETHANOL SOLUTION

Hazard Class: 3

UN Number: UN1170 (for Ethanol)

Packing Group: II

Section 15 - Regulatory Information

European/International Regulations

European Labelling in Accordance with EC Directives

Hazard Symbols: F - Highly inflammable

Risk Phrases:

R11 Highly inflammable.

R20 Harmful by inhalation

R21 Harmful by contact with skin

R22 Harmful if swallowed

R36 Irritating to eyes

R37 Irritating to respiratory system

R38 Irritating to skin

R40 Limited evidence of carcinogenic effect

Safety Phrases:

S 2 Keep out of reach of children.
S 7 Keep receptacle firmly shut.
S16 Keep isolated from any source of ignition - Do not smoke.
S24 Avoid contact with skin.
S25 Avoid contact with eyes.
S36 Wear suitable protective clothing.
S37 Wear suitable gloves.
S39 Wear eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Section 16 - Other Information

MSDS Creation Date: 07/01/2009

Revision number: 1

Revision Date: 06/08/2009

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 the company 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 the company has been advised of the possibility of such damages.