Table of Contents

1. Chemical Product  2
2. Composition and Information on Ingredients  2
3. Hazards Identification  2
4. First Aid Measures  3
5. Fire and Explosion Data  4
6. Accidental Release Measures  4
7. Handling and Storage  5
8. Exposure Controls/ Personal Protection  5
9. Physical and Chemical Properties  5
10. Stability and Reactivity Data  6
11. Toxicological Information  7
12. Ecological Information  7
13. Disposal Considerations  7
14. References  8
15. Appendices  8
16. Revision History  8
1. Chemical Product

**Product Name:** Ethanol 70%

**Chemical name:** Ethyl Alcohol (70%) and Water (30%)

**Synonyms:** Ethyl Alcohol; Ethyl Hydrate; Ethyl Hydroxide; Fermentation Alcohol; Grain Alcohol; Methylcarbinol; Molasses Alcohol; Spirits of Wine; Absolute ethanol; Anhydrous alcohol; Alcohol dehydrated; Algrain; Anhydrol; Cologne spirit; Duplicating fluid 100C; Potato alcohol; Sekundaspirit; Spirit; Synasol; Tecsol.

**Chemical Formula:** C₂H₅OH

2. Composition and Information on Ingredients

**Composition:** Ethyl Alcohol (70%) and Water (30%)

**Toxicological Data on Ingredients:**
- LD₅₀/LC₅₀:
  - LD 50 (oral, rat): 6 200 mg/kg⁻¹
  - LC 50 (inhalation, rat): > 8 000 mg/l/4 h
  - LD 50 (dermal, rabbit): > 20 000 mg/kg⁻¹
- Oral-CHD LDLO 2000 mgkg⁻¹
- Oral-Mouse LD50 3450 mgkg⁻¹
- Oral-Rat LD50 7060 mgkg⁻¹
- Oral-Rat LD50 7060 mgkg⁻¹
- Inhalation-Rat LC50 20000 ppm/10h

3. Hazards Identification

**Potential Acute Health Effects:** Vapours are irritating to the eyes, resulting in stinging, tearing, redness and pain. Consumption and inhalation of ethanol will also cause irritation, and may cause headaches and coughing. Skin irritation results through repeated contact.

**Potential Chronic Health Effects:** Alcoholism characterised by behaviour, memory, digestive and cardio-vascular problems due to chronic ingestion.

**CARCINOGENIC EFFECTS:** Not classified as carcinogenic but may increase risk of cancer
if chronically ingested.

**MUTAGENIC EFFECTS:** Increased risk of cancer if chronically ingested.

**TERATOGENIC EFFECTS:** Fetotoxicity has been shown to result in the embryo or foetus of laboratory animals during prenatal exposure to ethanol. “Fetal alcohol syndrome’’ is a distinct pattern of congenital malformations.

**DEVELOPMENTAL TOXICITY:** Liver cirrhosis

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### 4. First Aid Measures

**General measures:** Not applicable

**Skin contact:** Remove contaminated clothing and shoes, and wash skin with soap and plenty of water. If irritation occurs or persists, get medical attention. Wash clothing before reuse.

**Serious skin contact:** Not applicable

**Eye contact:** Immediately flush eyes with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

**Ingestion:** Remove patient to open air and wash out mouth with water. Seek medical attention immediately. Do NOT induce vomiting unless directed to do so by medical personnel and never give anything by mouth to an unconscious person.

**Serious ingestion:** If breathing stops or patient loses consciousness give artificial respiration/oxygen. If patient goes into a coma, send to hospital. Chronic ingestion of ethanol has been associated with an increased incidence of cancer, liver cirrhosis, and, if ingested during pregnancy, congenital malformations.

**Inhalation:** Remove to fresh air and keep patient at rest. Seek medical attention immediately.

**Serious inhalation:** If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
5. Fire and Explosion Data

Flammability of the Product: Flammable liquid and Vapour

Auto-Ignition Temperature: 363°C (685.40°F)

Flash points: 16.6°C (61.88°F)

Flammable limits: Lower 3.3 vol %; Upper 19.0 vol %

Products of Combustion: Carbon monoxide and carbon dioxide

Fire Hazards in Presence of Various Substances: Will burn if involved in a fire.

Explosion Hazards in Presence of Various Substances: Vapours may form an explosive mixture with air by travelling to a source of ignition and flash back.

Fire fighting media and Instructions: Wear a self-contained breathing apparatus in pressure-demand and full protective gear. Use water spray to keep fire-exposed containers cool but do not use straight streams of water to put down a fire since it may be ineffective.

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam.

Special Remarks on Fire Hazards: Highly flammable liquid. Flammable liquid and vapour. Vapours are heavier than air and may travel along surfaces to remote ignition sources and flash back.

Special Remarks on Explosion Hazards: Can release vapours that form explosive mixtures at temperatures above the flashpoint. Containers may explode in the heat of a fire.

6. Accidental Release Measures

NB: Wear appropriate protective equipment/clothing including gloves before removing any spills.

Spills: Collect the spill with absorbent material (e.g. vermiculite, sand or earth) and contain, if it is safe to do so, in an appropriately labelled, sealed container for disposal. Area of spill must be cleaned thoroughly. Care should be taken to avoid environmental release. Dispose of waste in the organic waste container. Do not dispose of in the sewage.
7. **Handling and Storage**

**Precautions:** Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Avoid aluminium packaging.

**Storage:** Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute.

8. **Exposure Controls/Personal Protection**

**Airborne Exposure Limits:**

ACGIH Threshold Limit Value (STEL): 1000ppm  
OSHA - Final PELS - TWAs: 1000ppm, 1900mg/m³

**Engineering Controls:** Should be used as the primary means to control exposures. General room ventilation is adequate unless the process generates dust, mist or fumes.

**Personal Protection:** Wear impervious gloves and safety glasses or goggles if eye contact is possible. For large quantities wear appropriate protective clothing to prevent skin exposure. Wear an appropriate respirator with a protection factor sufficient to control exposures where applicable.

9. **Physical and Chemical Properties**

**Physical state and appearance:** Clear, volatile, hygroscopic liquid.  
**Odour:** Fragrant, alcohol-like  
**Taste:** Bitter  
**Molecular Weight:** 46.0414g  
**pH (1% solution/water):** Not applicable  
**Boiling Point:** 78°C  
**Melting Point:** -114.1°C  
**Critical Temperature:** Not applicable  
**Specific Gravity (Water = 1):** 0.789  
**Vapour Pressure (mmHg):** 59.3 mmHg @ 20°C  
**Vapour Density:** 1.59  
**Volatility:** Not applicable
**Odour Threshold:** 0.52  
**Water/Oil Distribution Coefficient:** Not applicable  
**Ionicity (in Water):** Not applicable  
**Dispersion Properties:** Not applicable  
**Solubility:** Miscible

### 10. Stability and Reactivity Data

**Stability:** Stable under normal temperatures and pressures

**Corrosivity:** Not applicable

**Instability temperature:** Not applicable

**Conditions of Instability:** Keep away from heat, spark, flames and all other sources of ignition.

**Incompatibles:** Strong oxidizing agents and strong inorganic acids 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.

**Polymerization:** Will not occur
11. Toxicological Information

Toxicity to animals:

Rat Oral LD 50 7060 mg kg\(^{-1}\)
Mouse Oral LD 50 3450 mg kg\(^{-1}\)
Rat Inhalation LC 50 20000 ppm/10h
Mouse Inhalation LC 50 39 gm/m\(^3\)/4h

Effects on humans:

Acute potential health effects: Irritation of the eyes and skin, digestive mucous membranes when ingested, and respiratory tract when inhaled. Headaches, vertigo, drowsiness, unconsciousness/coma also occur during ingestion, with coughing during inhalation.

Chronic potential health effects:

MUTAGENIC EFFECTS: Increased incidence of cancer when chronically ingested

TERATOGENIC EFFECTS: When chronically ingested

DEVELOPMENTAL TOXICITY: Liver cirrhosis when chronically ingested

Other information: Not applicable

12. Ecological Information

Ecotoxicity: Even though this material is not expected to be toxic to aquatic life, its release in the environment should be avoided. It is expected to volatise and probably biodegrade when released into the water, and photodegrade in hours (polluted urban atmosphere) in the atmosphere but no data on the rates of these processes could be found.

13. Disposal Considerations

Waste Disposal: What is not recycled must be handled as hazardous waste and sent to an approved incinerator or disposed in an approved waste facility. Dispose in the container marked WATER SOLUBLE NON-HALOGENATED WASTE.
14. References


15. Appendices

Not applicable

16. Revision History

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<th>Amendments/ Reasons for change</th>
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