



SAFETY DATA SHEET

DENATURED ETHANOL 100

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: DENATURED ETHANOL 100

Recommended use: Chemical for industrial

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**
82/80 Soi Ekamai 22 (Nuannoi), Sukhumvit 63,
Klong Tan Nuea, Watthana, Bangkok 10110

Telephone No: 0-2715-0897-9, 0-2392-3410-3

Fax No: 0-2715-0908-9, 0-2391-1571-2

Emergency Telephone No: 0-2715-0897-9, 0-2392-3410-3

2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s):

- 1.) Highly flammable liquid and vapour.
- 2.) Causes skin and eye irritation.
- 3.) May cause respiratory irritation.
- 4.) Causes serious eye irritation.

Precautionary statement(s):

- 1.) Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- 2.) Keep container tightly closed.
- 3.) Wear protective gloves and eye and face protection.
- 4.) Wash hands thoroughly after handling.



- 5.) Use only non-sparking tools.
- 6.) Use explosion-proof electrical/ventilating/lighting/equipment.
- 7.) Take precautionary measures against static discharge.
- 8.) Store in a well-ventilated place. Keep cool.
- 9.) In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
- 10.) IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
- 11.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.
- 12.) If eye irritation persists. Get medical advice/attention.
- 13.) Ground/bond container and receiving equipment.
- 14.) Keep container tightly closed. Store in a well-ventilated place.
- 15.) Dispose of contents and container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: Ethanol SDA 39C 200 proof, Ethanol SDA 39C / Denatured alcohol

Ingredients	% (w/w)	CAS NO.
DENATURED ETHANOL 100	100	64-17-5

4. FIRST AID MEASURES

General advice:

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye contact:

Irrigate with clear water and obtain immediate medical attention.

Skin contact:

Wash with soap and water and remove contaminated clothing.

Inhalation:

Remove person to fresh air. Keep warm and at rest. Apply artificial respiration if breathing has ceased or person shows signs of failing. Obtain immediate medical attention.

Ingestion:

Wash out mouth with water. Do not induce vomiting. Give milk or water. Obtain immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:



Use carbon dioxide, alcohol foam, dry chemical, sand, earth, water fog or water spray. Keep containers cool by spraying with water.

Unsuitable Extinguishing Media:

Do not use water jet.

Specific hazards arising from Chemicals:

Combustible. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air at ambient temperatures. Pay attention to flashback. Development of hazardous combustion gases or vapours possible in the event of fire. Carbon monoxide is expected to be the primary hazard. Hazardous decomposition products formed under fire conditions. – Carbon oxide.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus (SCBA) for firefighting if necessary. Keep unopened containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment. Avoid breathing vapors, mist or gas.

Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and Material for Containment and Clean Up:

Highly flammable liquid. Eliminate all sources of Ignition. All equipment used when handling this product must be grounded. A vapor suppressing foam may be used to reduce vapors. Do not touch or walk through spilled material. Contain spillage, and then collect with non-combustion absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations. Use clean non-sparking tools to collect absorbed material.

7. HANDING AND STORAGE

Precautions for Safe Handling & Product Transfer:



Avoid contact with skin and eyes. Avoid inhaling of vapours or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge. Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

Conditions for Safe Storage & Unsuitable Materials:

Keep container tightly closed in cool, dry and well-ventilated place. Container which are opened must be carefully resealed and kept upright to prevent leakage. Consult local fire codes for additional storage information.

Suitable: containers mild steel and stainless steel.

Unsuitable: aluminium, copper

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 1000 ppm

Appropriate Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Electrical equipment should be grounded and conform to applicable electrical code. Ensure that eyewash stations and safety showers are proximal to the work- station location.

Individual Protection Measures

Respiratory protection: 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).

Hand protection: 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.

Eye protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166(EN) Maintain eye wash fountain and quick-drench facilities in work area.



Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor: liquid, colourless, alcohol-like	Evaporation rate: 3.0-3.4 (Butyl Acetate)
Melting Point: -114°C	Specific gravity: 0.789 – 0.793 g/cm ³ at 20 °C
pH: 7.0 at 10 g/l 20°C	Solubility in water: Completely soluble
Boiling point: 78 - 78.5 °C	Viscosity: 1.2mPa-s, 1.52 cSt at 20 °C
Vapour pressure: 43 – 44.6 mmHg at 20°C	Vapour density: 1.59 -1.6 (air=1)
Lower explosion limits: 3.3-3.5 %Vol	Upper explosive limit: 15.0-19.0 %Vol
Auto-ignition temperature: 363 - 365°C	Flash point: 13 -17°C
Odour threshold: 0.1-5058.5 ppm	Flammability (solid, gas): Highly flammable
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): (-0.32) - (-0.31)	

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions.

Reactions: Will react with strong oxidising agents. Vapours may form explosive mixture with air.

Possibility of Hazardous Reactions: Vapours may form explosive mixture with air. Risk of ignition or formation of inflammable gases or vapours with: chromium (VI) oxide, hydrogen peroxide, uranium hexafluoride, nitrogen dioxide, nitric acid, oxides of phosphorus, permanganic acid, perchloric acid, conc. sulfuric acid, potassium permanganate, perchlorates, fluorine, ethylene oxide, chromyl chloride, halogen-halogen compounds, strong oxidizing agents, alkali oxides, alkaline earth metals and alkali metals.

Conditions to avoid: Heat, flames, sparks, direct sunlight and extreme temperature. Keep away from sources of ignition and warming



Materials to be avoided: Oxidizing agents, acids, alkali metals, ammonia, peroxides, strong inorganic acids, various plastics, rubber.

Hazardous Decomposition Products: Burning can produce the following combustion products; carbon dioxide in sufficient concentrations can act as asphyxiant and or carbon monoxide which is high toxic if inhaled.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: LD50 (Oral, rat): 6200-17800 mg/kg
LD50 (Dermal, rabbit): >20000 mg/kg
LC50 (Inhalation, rat): >8000 mg/l -4h, 20000 ppm -10h
LD50 (Inhalation, rat): 124.7 mg/l-4h
LDL0 (Oral, human): 1400 mg/kg

Sensitization: Inhalation of high concentrations of vapour may cause headache, irritation of nose, throat and respiration tract. Ingestion may cause vomiting loss of co-ordination, temporary or permanent, blindness, coma and death. It is unlikely to be irritation to the skin.

Chronic toxicity: Chronic toxicity: No convincing evidence of carcinogenic effects in animal studies. Prolonged exposure can cause liver, kidney and heart damage. Long term exposure can cause loss of appetite, weight loss, nervousness, memory loss, mental retardation.

Further toxicological information: No data available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: LC50 - Trout: 11400 mg/l-24h
LC50 - Fish: >10000 mg/l-96h
LC50 - Leuciscus idus (Golden orfe): 8140 mg/l - 48h

Toxicity to daphnia and other aquatic invertebrates:
EC5 - E. sulcatum: 65 mg/l -72h
EC50 - Daphnia magna (Water flea): 9268 - 14221 mg/l - 48h

Toxicity to algae: IC5 - Scenedesmus quadricauda (Green algae): 5000 mg/l - 7d

Toxicity to bacteria: EC50 - Pseudomonas putida: 6500 mg/l - 16h



Biodegradability remark:	This product is readily biodegradable.
Bioaccumulative potential:	This product is not expected to bioaccumulate through food chains in the environment.
Mobility:	This product is likely to volatilise rapidly into the air because its high vapour pressure. The product will dissolve rapidly in water and is poorly adsorbed onto soils or sediments.
Affected in any other way:	Not toxic.

13. DISPOSAL CONSIDERATIONS

Material Disposal:	If not recoverable, dispose of for incineration by a licensed operator.
Container Disposal:	No data available.

14. TRANSPORT INFORMATION

ADR/RID

UN-No: 1170	Class: 3	Packing group: II
Proper shipping name: ETHANOL		

IMDG

UN-No: 1170	Class: 3	Packing group: II
Ems: F-E, S-D	Marine pollutant: No	
Proper shipping name: ETHANOL		

IATA

UN-No: 1170	Class: 3	Packing group: II
Proper shipping name: ETHANOL		

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

OSHA Hazards.

Flammable liquid, irritant, Target Organ Effect.

All ingredients are on the following inventories or are exempted from listing



Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

Label requirements

Hazard Symbol(S)



Indication of danger

Highly flammable

Risk phrases

R11- Highly flammable.

Safety phrases

S2- Keep out of the reach of children.

S7- Keep container tightly closed.

S16- Keep away from sources of ignition – No smoking.

S46- If swallowed, seek medical advice immediately and show this container or label.

EU regulations

Classification and labeling have been performed according to EU directive 1999/45/EC and 67/548/EEC as amended and adapted.

Regulation information:

Classification: FLAMMABLE LIQUID

Symbols: F EEC No.603-002-00-5

Risk phrases: R11: Highly flammable

Safety phrases: S7: Keep container tightly closed.

S16: Keep away from sources of ignition – No smoking.

Safety, health and environment regulations/ legislation specific for the substance or mixture



National legislation Storage class 3

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out for EU REACH regulation No 1907/2006

16. OTHER INFORMATION

Modern Chemical Co.,Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

MODERN CHEMICAL CO., LTD. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MODERN CHEMICAL CO.,LTD. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.