



# SAFETY DATA SHEET

## ISOPROPANOL

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

Product name: ISOPROPANOL

Recommended use: Chemical for industry.

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**  
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### 2. HAZARDS IDENTIFICATION

#### Label elements

Pictogram



Signal word

Danger

#### Hazard statement(s):

- 1.) Highly flammable liquid and vapour.
- 2.) Causes mild skin irritation.
- 3.) Causes serious eye irritation.
- 4.) May cause drowsiness or dizziness.
- 5.) May be harmful if swallowed.
- 6.) May be fatal if swallowed and enters airways.
- 7.) Suspected to damaging fertility or the unborn child.
- 8.) Causes damage to organs (Central Nervous System, Kidney, systemic toxicity.)



9.) May cause respiratory irritation.

10.) May cause damage to organs (blood vessel, liver, spleen) through prolonged or repeated exposure.

11.) May be harmful in contact with skin.

**Precautionary statement(s):**

- 1.) Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- 2.) Keep container tightly closed.
- 3.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 4.) Ground / bond container and receiving equipment.
- 5.) Use explosion-proof electrical ventilating, and lighting equipment.
- 6.) Use only non-sparking tools.
- 7.) Take precautionary measures against static discharge.
- 8.) Avoid breathing dust/fume/gas/mist/vapours/spray.
- 9.) Wash hands thoroughly after handling.
- 10.) Use only outdoors or in a well-ventilated area.
- 11.) Wear protective gloves and eye / face protection.
- 12.) If eye irritation persists. Get medical advice/ attention.
- 13.) IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- 14.) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 15.) IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 16.) Call a MEDICAL CENTER or doctor/physician if you feel unwell.
- 17.) Do NOT induce vomiting.
- 18.) In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish.
- 19.) Store in a well-ventilated place. Keep container tightly closed.
- 20.) Store in a well-ventilated place. Keep cool.
- 21.) Store locked up.
- 22.) Obtain special instructions before use.
- 23.) Do not handle until all safety precautions have been read and understood.
- 24.) Dispose of contents and container in accordance with local regulations.



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonym:** Isopropyl alcohol, Dimethyl carbinol, 2-Propanol, IPA, Rubbing alcohol, Dimethyl carbinol,

Sec-Propyl alcohol, Petrohol, Propan-2-ol, Propyl alcohol, Sec-Propanol, Sec-IPA

Ingredients	% (w/w)	CAS NO.
ISOPROPANOL	100	67-63-0

### 4. FIRST AID MEASURES

**General advice:**

Show this safety data sheet to the doctor in attendance.

**Inhalation:**

Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision.

**Skin contact:**

Remove contaminated clothing and wash affected skin with soap and water for at least 15 minutes. Obtain medical attention. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before re-use.

**Eye contact:**

If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.

**Ingestion:**

Rinse mouth. **Do not induce vomiting.** Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media :**

Extinguish with carbon dioxide, dry chemical, Water spray and Alcohol-resistant foam.

**Unsuitable Extinguishing Media:**

Do not use a Straight water stream as it may scatter and spread fire.

**Specific hazards arising from Chemicals:**

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

**Special protective equipment for fire-fighters :**

Wear self-contained breathing apparatus and protective suit.



## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive pressure supplied air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

**Environmental precautions:** Prevent liquid entering sewers, basements and work pits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

### Methods and Material for Containment and Clean Up:

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

## 7. HANDING AND STORAGE

### Precautions for Safe Handling & Product Transfer:

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

### Conditions for Safe Storage & Unsuitable Materials :

Keep tightly closed at room temperature in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible material. Store in original container. Electrical equipment should be protected to the appropriate standard.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits:** TWA/TLV: 200 - 400 ppm

TLV/STEL: 400 - 500 ppm

**Appropriate Engineering Controls:** The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.



### Individual Protection Measures

- Respiratory protection:** In case of insufficient ventilation, use suitable respiratory equipment with gas filter for organic gas. Wear air-supplied mask in confined areas.
- Hand protection:** Longer term protection: Natural rubber, Butyl rubber. Incidental contact/Splash protection: Neoprene rubber, PVC, Viton.
- Eye protection:** Tightly sealed goggles.
- Skin and body Protection:** Chemical resistant apron/flame retardant antistatic protective clothing, heavy duty work shoes.
- Hygiene measure:** 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

<b>Form, Color and Odor :</b> liquid, colourless, characteristic	<b>Evaporation rate :</b> 1.5 – 3.0 (n-Butyl Acetate=1)
<b>Melting Point :</b> (-88) – (-90) °C	<b>Specific gravity :</b> 0.782 - 0.787 g/cm <sup>3</sup> at 20 °C
<b>pH :</b> N/A	<b>Solubility in water :</b> Soluble
<b>Boiling point :</b> 82 – 83 °C	<b>Viscosity :</b> N/A
<b>Vapour pressure :</b> 4.1 – 4.4 kPa at 20 °C	<b>Vapour density :</b> 2.0 - 2.1 g/l
<b>Lower explosion limits :</b> 2 - 2.3 Vol%	<b>Upper explosive limit :</b> 12 - 12.7 Vol%
<b>Auto-ignition temperature :</b> 399 – 456 °C	<b>Flash point :</b> 11.7 – 12.8 °C
<b>Odour threshold :</b> N/A	<b>Flammability (solid, gas) :</b> N/A
<b>Decomposition temperature :</b> N/A	<b>Solubility in other solvents :</b> N/A
<b>n-octanol/water partition coefficient (log P<sub>ow</sub>) :</b> 0.05	

### 10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable under recommended storage conditions.
- Reactions:** May attack some forms of plastic, rubber and coating.
- Possibility of Hazardous Reactions:** Prolonged contact with air may cause formation of explosive peroxides.
- Conditions to avoid:** Heat, Flames and sparks.
- Materials to be avoided:** Alkali metals, alkaline earth metals, aluminum in powder form, oxidizing agents, perchlorates, CrO<sub>3</sub>, nitric acid, nitrogen oxides, hydrogen peroxide, organic nitro



compounds, aldehydes, amines, fuming sulfuric acid, phosgene, acid,  
Acetaldehyde, chlorine, Ethylene Oxide, Isocyanates, halogenated compounds,  
alkalis, caustics.

**Hazardous Decomposition Products:** Carbon monoxides, Carbon dioxides

## 11. TOXICOLOGICAL INFORMATION

- Acute toxicity:** LD50 (Oral, rat): 2000 - 5045 mg/kg  
LC50 (Inhalation – rat): 16000 ppm - 8h / 29512 ppm – 4h  
LD50 (Dermal, rabbit): 4059 - 12800 mg/kg
- Sensitization:** After inhalation of vapors; Irritation symptoms in the respiratory tract, drowsiness.  
After skin contact: Degreasing effect on the skin, possibly followed by secondary inflammation. After eyes contact: Irritations. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting) can result in a condition resembling pneumonia (chemical pneumonitis). After absorption: Headache, dizziness, inebriation unconsciousness, narcosis. After uptake of large quantities: respiratory paralysis, coma.
- Chronic toxicity:** Sensitization test (guinea pig) is negative. Noncarcinogenic in animal experiments.  
Mutagenicity (mammal cell test): Micronucleus negative. No impairment of reproductive performance in animal experiments. No teratogenic effect in animal experiments.
- Further toxicological information:** The product should be handled with the care usual when dealing with chemicals

## 12. ECOLOGICAL INFORMATION

### Toxicity

- Toxicity to fish: LC50 – Bluegill (*Lepomis macrochirus*): >1400 mg/l - 96h  
LC50 – Fish: 9640 mg/l - 96h
- Toxicity to daphnia and other aquatic invertebrates:  
EC50 – *Daphnia magna*: 5102 mg/l – 24h
- Toxicity to algae: LC/EC/IC50 >1000 mg/l
- Toxicity to bacteria: LC/EC/IC50 >1000 mg/l



Biodegradability remark:	Readily biodegradable meeting the 10 day window criterion. Oxidises rapidly by photo-chemical reaction in air.
Bioaccumulative potential:	Low
Mobility:	High
Affected in any other way:	No data available

### 13. DISPOSAL CONSIDERATIONS

**Material Disposal:** There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Container Disposal:** Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

### 14. TRANSPORT INFORMATION

#### ADR/RID

UN-No: 1219 Class: 3 Packing group: II

Proper shipping name: ISOPROPANOL

#### IMDG

UN-No: 1219 Class: 3 Packing group: II

Ems: F-E S-D

Proper shipping name: ISOPROPANOL

#### IATA

UN-No: 1219 Class: 3 Packing group: II

Proper shipping name: ISOPROPANOL



## 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.

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

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

AICS	: y	
DSL	: y	
INV (CN)	: y	
ENCs(JP)	: y	(2)-207
ISHL (JP)	: y	2-(8)-319
ISHL (JP)	: y	(2)-207
TSCA	: y	
EINECS	: y	200-661-7
KECI (KR)	: y	KE-29363
PICCS (PH)	: y	
NZ CLSC	: y	

### Regulations:

Isopropanol (CAS: 67-63-0) is found on the following regulatory lists: "China (Hong Kong) Fire Service Department - List of Dangerous Goods", "China (Hong Kong) Occupational Exposure Limits", "China Classification and Labelling of Dangerous Chemical Substances", "China Dangerous Chemicals Names List", "China First Imported Class Two Chemical List", "China Hygienic Standards for Uses of Food Additives (GB 2760-1996)- List of Flavourings Tentatively Permitted For Use", "China Inventory of Existing Chemical Substances", "China Occupational Exposure Limits for Hazardous Agents in the Workplace". This safety data sheet is in compliance with the following national standards: GB16483-2008, GB13690-2009, GB6944-2005, GB/T15098-2008, GB18218-2009, GB15258-2009, GB6944-2005, GB190-2009, GB191-2009, GB12268-2008, GAS7-1993, GB/T 15098-2008, GBZ 2-2007as well as the following national regulations: Dangerous Goods Transport Administrative Regulation, Dangerous Chemicals Safety Administrative Regulation, United Nations Regulations on the Transport of Dangerous Goods (UN RTDG)

### Inventory status

Country(s) or region	Inventory name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes





Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\* A "Yes" indicates that all components of this product comply with the inventory requirements administered d by the governing country(s)

#### Federal and State Regulations:

Connecticut hazardous material survey.: Isopropyl alcohol Illinois toxic substances disclosure to employee act: Isopropyl alcohol Rhode Island RTK hazardous substances: Isopropyl alcohol Pennsylvania RTK: Isopropyl alcohol Florida: Isopropyl alcohol Minnesota: Isopropyl alcohol Massachusetts RTK: Isopropyl alcohol New Jersey: Isopropyl alcohol New Jersey spill list: Isopropyl alcohol Director's list of Hazardous Substances: Isopropyl alcohol Tennessee: Isopropyl alcohol TSCA 8(b) inventory: Isopropyl alcohol TSCA 4(a) final testing order: Isopropyl alcohol TSCA 8(a) IUR: Isopropyl alcohol TSCA 8(d) H and and S data reporting: Isopropyl alcohol: Effective date: 12/15/86 Sunset Date: 12/15/96 TSCA 12(b) one time export: Isopropyl alcohol SARA 313 toxic chemical notification and release reporting: Isopropyl alcohol

#### Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

#### Other Classifications:

##### WHMIS (Canada):

CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects TOXIC)

##### DSCL (EEC):

R11- Highly flammable. R36-Irritating to eyes. S7- Keep container tightly closed. S16- Keep away from sources of ignition -No smoking. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

##### HMIS (U.S.A.)

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h



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#### **National Fire Protection Association (U.S.A.):**

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

#### **Protective Equipment:**

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

### **16. OTHER INFORMATION**

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