



# SAFETY DATA SHEET

## ISOBUTANOL

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

Product name: ISOBUTANOL

Recommended use: Chemical for industry.

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

#### Label elements

Pictogram



Signal word

Warning

#### Hazard statement(s):

- 1.) Flammable liquid and vapour.
- 2.) Harmful if swallowed.
- 3.) May cause mild skin irritation.
- 4.) Causes serious eye irritation.
- 5.) May be harmful if swallowed and enters airways.

#### Precautionary statement(s):

- 1.) Keep containers in a well-ventilated place.
- 2.) Keep away from sources of ignition - No smoking.
- 3.) Avoid contact with eyes.



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonym:** Isobutyl Alcohol, 2-Methyl-1-propanol, Isopropyl carbinol, IBA, 1-Hydroxymethylpropane.

Ingredients	% (w/w)	CAS NO.
ISOBUTANOL	100	78-83-1

### 4. FIRST AID MEASURES

- General advice:** No data available.
- Inhalation:** Remove to fresh air. Get medical attention immediately.
- Skin contact:** Wash skin with water for at least 5 minutes if irritation develops. Get medical attention if irritation develops or persists.
- Eye contact:** Immediately lift eyelids, flushing eyes with plenty of water for at least 20 minutes. Don't let that water contaminate other sites. Get medical attention immediately.
- Ingestion:** Never give anything by mouth to an unconscious person. Have victims gargle thoroughly with clear water. Don't induce vomiting. Have victim drink 240 – 300 ml of water to dilute material in stomach. If vomiting occurs, lean victim forward and repeat administering water. If breathing stops, have trained personnel administer artificial respiration. Administer cardiopulmonary resuscitation (CPR) immediately if the heart has stopped. Get medical attention immediately.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**

Extinguish with carbon dioxide, dry chemical, alcohol-type foam to ignite again.

**Unsuitable Extinguishing Media:**

No data available.

**Specific hazards arising from Chemicals:**

Stop leaks before extinguishing. Spilled vapors may form an explosive mixture with air.

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

Extinguishing staffs should wear an approved/certified respirator, splash goggles, and fire fighting coats.



## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions:

Restrain personnel from close to spilled areas before totally cleaning out.

Confirm the cleaning work be responsible by trained staffs. Wear appropriate personal protective equipments.

### Environmental precautions:

Supply adequate protective apparatus and ventilation equipments. Remove heat sources and flames. Report to governmental safety and hygiene institutes and related units.

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

Don't touch spilled material. Try to stop or reduce leaks with safety permission. Avoid leaks to flush to sewer or confined space. Use sand, soil, and inert absorbing agents to block leak.

**Small spill:** use the material, not react with spill, to absorb. Contaminated absorbing agents have same risk as spill. Place in covered and labeled containers. Spray water on spilled areas. Use plenty of water to dilute small spill.

**Large spill:** contact fire control, urgent handling units and suppliers to seek aid.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling & Product Transfer:

This material is flammable and toxic liquid. Engineering control should be applied and make the best use of use personal protective equipments when handling. Educate risk of this material and safety training of use. Remove all ignition sources away from heat and incompatible substances. There should be a "No smoking" sign in workspace. The liquids will accumulate the electric charge. Consider extra design to increase electric conductance. All barrels, containers, and pipelines must have earth connection and contact with naked metal. While transporting and operating, reduce velocity flow, increase operating time to elevate the time that the liquids stays in pipeline, or operate at low temperature. When the operation of allocation is not in the airtight system, insure allocating containers, received-transporting apparatus and containers connected with same electric potential. Empty tanks, containers, and pipelines may have risk residuals. Don't weld, cut, drill or do other heat work before clearing up. Barrels or storage containers can be filled with the inert gas to reduce fire and explosion. Use spark-resistant ventilation system in workplace. Apparatus should be the explosion-proof type. Keep sidewalks and exports unimpeded. Storage and large operating areas are considered to install fire



and spill detection system, and appropriate automatic fire-fighting system or enough and useful emergency apparatus. Avoid mist or vapors. Operate in well-ventilated assigned place and adopt the minimum consumption. Separate operation and storage areas. Wear appropriate personal protective equipments to avoid contacting with this chemical or contaminated apparatus if necessary. Don't use with incompatible substances to avoid increasing risk of fire and explosion. Use storage containers made of compatible substances. Package carefully to avoid spray out. Don't use air or inert gas to pressurize and transport liquids from containers. Unless allocation areas isolated with the fire-resistant structure, don't allocate and work in storage areas. Use approved storage containers of flammable liquids and allocating apparatus. Don't pour contaminated liquids back to original storage containers. Containers should be labeled, confined and prevented from damage while not using.

#### **Conditions for Safe Storage & Unsuitable Materials:**

Store in shady, cool, dry, and well-ventilated place that sunshine cannot directly illuminate, and keep away from heat, ignition sources, and incompatible substances. Storage apparatus should be constructed with the refractory materials. The floor should be constructed with the impermeable materials to avoid absorbing from the floor. Set slope, doorsill or dig grooves in an entrance to discharge spill to safe places. Storage areas should be labeled clearly with no barriers. Permit assigned or trained personnel to enter. Keep storage areas away from workspace, lifts, building, room exits, and main passages. Have appropriate fire extinguisher and leak cleaning apparatus near storage areas. Check containers regularly whether damage or leak. Check all new containers whether appropriately labeled and no damage. Limit storage. Store spill in containers made of compatible substances. Storage tanks have earth connection and connected with other apparatus by using same electric potential. Install depressurizing and vacuum releasing valves in all barrels stored flammable liquids. Store in accordance with the storage temperature suggested by chemical manufacturers or suppliers. Install warm-detecting sirens if necessary to alarm temperature is too high or too low. Avoid storing large amount in room. Store in fireproofing isolating building as possible. Install flame-extinguishing devices in storage exhaust pipes. Must be ground storage tanks. Seal whole area on the bottom to avoid seepage surrounded with liquids dikes, which can block the whole capacity.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits:** TWA 50 ppm

**Appropriate Engineering Controls:** Local exhaust or general ventilation systems. Use spark-resistant and earth-connection ventilation system separately. Direct outside exhaust vents. Supply adequate fresh air to replenish the exhausted air.



## Individual Protection Measures

- Respiratory protection:** Below 500 ppm: Chemical type with organic vapor filters or air-feed type respiratory protective equipments.
- Below 1,250 ppm: Stable flow, air-feed type or dynamical type with organic vapor filters respiratory protective equipments.
- Below 1,600 ppm: Chemical type with organic vapor filters, full-mask type with organic vapor filters, full-type (portable), or full-and air-feed type respiratory protective equipments.
- Hand protection:** Use seepage-proof gloves of butyl rubber, rubber-like, Viton, Responder, etc.
- Eye protection:** Chemical safety goggles and masks.
- Skin and body protection:** Above rubber coveralls, work boots.
- Hygiene measures:** Remove contaminated clothing quickly as possible after work. Clean clothing before reuse or abandon. Tell cleaning staffs the harmfulness. Forbid smoking or eating in workplace. After handling this material, wash hands thoroughly. Keep workplace clean.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form, Color and Odor :</b> liquid, colourless, sweet mold	<b>Evaporation rate :</b> 0.82 (n-butyl acetate=1)
<b>Melting Point :</b> -108 °C	<b>Specific gravity :</b> 0.802-0.804 g/cm <sup>3</sup> at 20 °C
<b>pH :</b> N/A	<b>Solubility in water :</b> 9.8 g/100 ml water
<b>Boiling point :</b> 108 °C	<b>Viscosity :</b> N/A
<b>Vapour pressure :</b> 8.8 mmHg at 20 °C	<b>Vapour density :</b> 2.6 (air=1)
<b>Lower explosive limits :</b> 1.7 %Vol at 51°C	<b>Upper explosive limits :</b> 10.6 %Vol at 94 °C
<b>Auto-ignition temperature :</b> 415 °C	<b>Flash Point :</b> 28 °C
<b>Odour threshold :</b> 0.66 – 40 ppm (monitor), 1.8 – 53ppm (censor), 100ppm (irritate)	<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 Kow):</b> 0.65	

## 10. STABILITY AND REACTIVITY

- Chemical stability:** Stable under ordinary conditions.
- Reactions:** No data available.



<b>Possibility of Hazardous Reactions:</b>	Oxidizing agents (nitrate, per chlorate, per oxidative substances): Increase fire and explosion risk. Chromium trioxide: Strong oxidation can cause fire. Barium permanganate, chlorine, ethylene glycol, isocyanate, hydrogen peroxide, sulfuric acid, hydrochloric acid, nitrogen teraoxide; Mixed explosion.
<b>Conditions to avoid:</b>	Static, spark, heat, naked lights, and ignition sources.
<b>Materials to avoid:</b>	Oxidizing agents, chromium trioxide, barium permanganate, chlorine, ethylene glycol, isocyanate, hydrogen peroxide, sulfuric acid, hydrochloric acid, nitrogen teraoxide.
<b>Hazardous decomposition products:</b>	No data available.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute toxicity:</b>	LD50 (Oral, rat): 2,460 mg/kg
<b>Sensitization:</b>	May be harmful if inhaled. The vapors will irritate the nose and throat. High concentration can irritate nose, throat, and respiratory tracts seriously, induce cough and dyspepsia, depress central nervous system, cause nausea, vomiting, headache, dizziness, even may lose consciousness. Ingestion May be harmful if swallowed. Depress central nervous system, and cause nausea, vomiting, stomachache, chest pain, headache, faintness, and dizziness. Exceeding dose may cause coma, even death. May damage liver and kidney. May be harmful if absorbed through skin. May cause skin Mild irritation. Eyes contact: High-level vapors may cause irritation.
<b>Chronic toxicity:</b>	Extreme long exposure will damage nervous system and cause symptoms of nausea, dizziness, and vomiting. Long-term contact with skin may induce skin rosy, dry, peeling, and cause dermatitis.
<b>Further toxicological information:</b>	No data available

## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish: LC50 - Fish: 143,000,000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates: No data available.



Toxicity to algae:	No data available.
Toxicity to bacteria:	No data available.
Biodegradability Remarks:	Monitor sewer water, silt or both of them mixed with soil and surface water in the lab, which degrade quickly. When released into the water, this material is expected to evaporate and biodegrade. When released into the air, this material is expected to being readily degraded by reaction with photochemically produced hydroxyl radicals.
Bioaccumulative potential:	Quickly to metabolize and eliminate via urine, not accumulate in the body.
Mobility:	When released into the soil, this material is expected to evaporate and permeate through soil.
Affected in any other way:	No data available.

### 13. DISPOSAL CONSIDERATIONS

<b>Material Disposal:</b>	Consult references to regulations. Waste must be disposed of in accordance with warehousing conditions. Adopt particular incineration or sanitary burying.
<b>Container Disposal:</b>	No data available.

### 14. TRANSPORT INFORMATION

#### ADR/RID

UN-No: 1212	Class: 3	Packing group: III
Proper shipping name: Isobutyl Alcohol		

#### IMDG

UN-No: 1212	Class: 3	Packing group: III
Marine pollutant: No		
Proper shipping name: Isobutyl Alcohol		

#### IATA

UN-No: 1212	Class: 3	Packing group: III
Proper shipping name: Isobutyl Alcohol		



## 15. REGULATORY INFORMATION

### Applicable Regulation:

1. Consult references to regulations.
2. Waste must be disposed of in accordance with warehousing conditions.
3. Adopt particular incineration or sanitary burying.

## 16. OTHER INFORMATION

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