

 <p>CHEMLABS Quality Our Forte</p>	<p>LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI</p> <p>(CODE) SECTION : WI/SM</p> <p>(DATE) : 01.04.2010</p>	 <p>Issue : 02</p> <p>Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ISO-BUTANOL</p>			<p>1 Page of 1</p>

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name:
Iso-Butanol

Catalog Numbers:
B127, B063

Synonyms:
2-Methylpropan-1-ol; Iso-Butyl Alcohol

Company Information:
LEONID CHEMICALS Pvt Ltd,
62/A-2, 1st Stage,
Yeshvanthpur Industrial Suburb,
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Ph- +91-80-23378354
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SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	: 78-83-1
Chemical Name	: Isobutanol
%	: Min 99% (AR), (LR)
EINECS#	: Unlisted.
Hazard Symbols	: Unlisted.
Risk Phrases	: Unlisted.

SECTION 3- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! Flammable liquid and vapor. Harmful if swallowed, inhaled or absorbed through skin. Affects central nervous system. Causes irritation to skin, eyes and respiratory tract.

Potential Health Effects

Skin Contact:

Skin contact causes irritation, redness, and pain. May be absorbed through the skin; symptoms of absorption may be similar to those from ingestion exposure.

Eye Contact:

Vapors cause irritation, redness, and blurred vision. Splashes may cause severe irritation or eye damage.

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Inhalation:

Causes irritation to respiratory tract. Effects from overexposure include headache, dizziness, muscle weakness, drowsiness, in coordination, confusion, and coma. High concentrations can cause central nervous system damage, pulmonary edema, and liver damage. Death may occur from respiratory failure.

Ingestion:

Ingestion may cause nausea, vomiting, and diarrhea. Large doses may cause central nervous system damage, pulmonary edema, and liver damage. Death may occur from respiratory failure.

Chronic Exposure:

Prolonged or repeated skin exposure may cause dermatitis.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance

SECTION 4 -FIRST AID MEASURES

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact:

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Wash clothes before reuse. Get medical attention if irritation develops or persists.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

SECTION 5- FIRE FIGHTING MEASURES

Fire Extinguishing Media:

Dry chemical, foam or carbon dioxide. Do not use a solid stream of water, since the stream will scatter and spread the fire. Water spray may be used to keep fire exposed containers cool.

Special 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. Vapors can flow along surfaces to distant ignition source and flash back.

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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! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

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 (vapors, liquid); observe all warnings and precautions listed for the product.

SECTION 8 -EXPOSURE CONTROLS, PERSONAL PROTECTION

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Clear, colorless solution.
Odor	: Sweet-musty odor
Solubility	: 9.5g/100ml water @ 20C (68F).
Specific Gravity	: 0.803
pH	: No information available.
% Volatiles by volume @ 21C (70F)	: 100
Boiling Point	: 108C (226F)
Melting Point	: -108C (-162F)
Vapor Density (Air=1)	: 2.6
Vapor Pressure (mm Hg)	: 8.8 @ 20C (68F)
Evaporation Rate (BuAc=1)	: 0.8
Molecular Weight	: 74.12
Chemical Formula	: (CH ₃) ₂ CHCH ₂ OH

SECTION 10 -STABILITY AND REACTIVITY

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Burning may produce carbon monoxide, carbon dioxide and isobutylene.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Oxidizing agents, inorganic acids, Aldehydes, isocyanates.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

SECTION 11 -TOXICOLOGICAL INFORMATION

Isobutyl alcohol: Oral rat LD50: 2460 mg/kg. Skin rabbit LD50: 3400 mg/kg. Irritation data: Skin rabbit 500 mg/24H moderate. Eye, open, rabbit 2mg severe; Investigated as a tumorigen and a mutagen.

SECTION 12 - ECOLOGICAL INFORMATION

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

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is

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expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. When released to water, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photo chemically produced hydroxyl radicals.

SECTION 13 -DISPOSAL CONSIDERATIONS

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

SECTION 14 - TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name : ISOBUTANOL
Hazard Class : 3
UN/NA : UN1212
Packing Group : III
Information reported for product/size : 20L

International (Water, I.M.O.)

Proper Shipping Name : ISOBUTANOL
Hazard Class : 3
UN/NA : UN1212
Packing Group : III
Information reported for product/size : 20L

SECTION 15 -Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:

No information available.

Risk Phrases:

No information available.

Safety Phrases:

No information available.

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WGK (Water Danger/Protection)

No information available.

Canada

No information available.

Exposure Limits

No information available.

US Federal

TCSA

No information available.

SECTION 16 - ADDITIONAL INFORMATION

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 Leonid Chemicals 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 Leonid Chemicals has been advised of the possibility of such damages.

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Specification For Iso-Butanol

C₄H₁₀O

MW: 74.12

CAS No : 78-83-1

Product : ISO-BUTANOL LR Grade

Description : Colourless liquid

Cat No : B063

Prepared Date : 07.03.2005

Approved Date : 07.03.2005

REVISION HISTORY				
Issue/Rev	Description of Change		Author	Effective Date
01/00	Initial Release		S. Paul Joshua	07.03.2005
02/00	Reviewed no changes		S. Paul Joshua	01.04.2010
Next Review Due :		02.04.2015		
To be reviewed by :		Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay (GC)	≥ 99.5%
2	Boiling point	107 - 108°C
3	Density	0.801 g/ml

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance

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