



THE ANDHRA PETROCHEMICALS LIMITED, VISAKHAPATNAM.
MATERIAL SAFETY DATA SHEET (MSDS)
I-BUTANOL

SECTION-1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:

Material Name:	I-BUTANOL
Chemical formula:	(CH ₃) ₂ CHCH ₂ OH
CAS. No:	78-83-1
Trade Name & synonyms:	I-Butyl alcohol, I-Butanol, I-Hydroxy butane, Isopropylcarbinol, 2methyl propanol.
Product Use:	Solvent in manufacture of butyl acetate, melamine resins, antibiotics, plasticizers, lacquers, as a flavouring agent in butter, cola, fruit, liquor, rum, and whisky, for derivative esters, as mobil phase in thin layer chromatography, etc

Manufacturer's details:

Name:	The Andhra Petrochemicals Limited
Street:	P.B.No.1401, Opp: Naval Dockyard
City:	Visakhapatnam.
State:	Andhra Pradesh
Postal Code:	530 014
Emergency Tel.Nos:	+91-0891-2891500/2891495/414/411/412
Fax No.:	0891-2577751
E-Mail:	info.vskp@andhrapetrochemicals.com

Supplier's details:

Name:	The Andhra Petrochemicals Limited
Street:	No.202-A, 2 nd floor, My Home Sarovar Plaza, Secretariat Road, Saifabad
City:	Hyderabad
State:	Telangana
Postal Code:	500063
Emergency Tel.Nos:	040-23420666/23420667
Fax No.:	040-23420665
E-Mail:	info.hyd@andhrapetrochemicals.com

Date MSDS prepared: 14. Sept. 2015

MSDS prepared by: Technical Services, APL

SECTION-2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

I-BuOH purity:	99.5% (wt min)
Color, APHA:	10 (max)
Water:	0.2 % (wt max)
Acidity as acetic acid:	0.01% (wt max)



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Aldehyde (as butyraldehydes):	0.1% (wt max)
SECTION-3: HAZARDS IDENTIFICATION	
Hazardous Ingredients:	Nil
U.N.Number:	1212 (3.0.0)(0)II
Haz Chem Code:	3YE
HMIS hazard ratings:	Health: 1, Flammability: 3, Stability/Reactivity: 0
OSHA Specified Hazards:	Not applicable
Interdictions:	Do not drink or eat in working area; Do not smoke in or near working area; The use of open flame in working areas is prohibited.
Hazardous Statements:	Causes skin irritation.
	May cause drowsiness or dizziness.
	May cause respiratory irritation.
	Causes serious eye damage.
	Flammable liquid and vapor.
Precautionary Statement:	
Prevention:	Keep container tightly closed.
	Use explosion-proof electrical/ventilating/lighting/equipment.
	Take precautionary measures against static discharge.
	Wash hands thoroughly after handling.
	Use only outdoors or in a well-ventilated area.
	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	Avoid breathing dust/fume/gas/mist/vapors/spray.
	Wear protective gloves/protective clothing/eye protection/face protection.
	Use only non-sparking tools.
	Ground/bond container and receiving equipment.
Response:	If on skin (or) hair, take off immediately all contaminated clothing. Rinse skin with water/shower.
	If inhaled: Remove person to fresh air and keep comfortable for breathing.
	if you ingested/feel unwell, consult immediately doctor.
	If irritation occurs: Get medical advice/attention.
	In case of fire: Use water spray, CO2, dry chemical or foam for extinction.
Disposal:	Dispose of contents/ container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

SECTION-4: FIRST AID MEASURES



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First Aid Measure:	Flush the affected portion with plenty of water for atleast 15 minutes. Remove contaminated clothing & provide fresh air.
Doctor's Advise:	Give artificial respiration if required.
Sources Used:	First Aid Centres, Private Hospitals etc.
Additional information:	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Treat symptomatically.

SECTION-5: FIRE FIGHTING MEASURES

Flammability:	Yes
If yes, under what conditions:	At its Flash point 27.8°C & auto ignition Temp.427°C
Means of Extention:	Use Dry chemical powder, CO2 extinguishers, foam, water spray.
Special Procedures:	Use Alcohol resistant foam AGFFF for bulk liquid fire. Use water fog for cooling.
Flash Point & Method:	27.8°C & Closed cup
Lower explosive limit:	1.7% at 100°C
Upper explosive limit:	10.9% at 100°C
Auto-ignition Temperature:	427°C
Hazardous Combustion Products:	Acrid Smoke and Fumes
General fire hazards:	Combustible liquid and vapor. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Material will float and may ignite on surface of water.
Advice for fire-fighters:	Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION-6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Wear appropriate personal protective equipment.
Environmental Precautions:	Avoid release to the environment.
Methods and material for containment and cleaning up:	Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.
Notification Procedures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SECTION-7: HANDLING AND STORAGE

Handling procedures and equipment:	Use Metal buckets and collect in drums or pump back to a container. Ground/bond container and receiving equipment.
Storage Requirements:	Store in a well-ventilated place. Keep cool; Keep container tightly closed.Can use MS or C.I. Containers.

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Precaution for safe handling:	Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.
<u>SECTION-8: EXPOSURE CONTROL / PERSONAL PROTECTION</u>	
Gloves:	PVC Gloves
Respiratory:	Breathing Apparatus
Eyes /face protection:	PVC Goggles, Face Shield
Footwear:	PVC (Shoe)
Clothing:	PVC Suit
Leak and Spill procedures:	Contain the leak, keep away from Heat or Flame and in-compatible materials use sand to soak the leaked material.
General information:	Maintain eye bath, washing facilities, Safety shower in work area.
Engineering controls:	Maintain good ventilation
<u>SECTION-9: PHYSICAL AND CHEMICAL PROPERTIES</u>	
Physical State:	Liquid
Odour and Appearance:	Sweet odour, Clear liquid
Molecular weight:	74.12
Relative density:	Liquid (Water = 1.0): 0.805 vapor (Air = 1.0): 2.55
Vapour Pressure:	20°C at 5.5mmHg
Evaporation Rate:	No data available
Boiling point:	107.9°C
Freezing Point:	-108°C
Solubility in water:	Partial 5% W/w, Miscible with ethanol, ether, many other organic solvents.
pH	Not pertinent
Flash point:	27.8°C
Auto-ignition:	427°C
<u>SECTION-10: STABILITY AND REACTIVITY</u>	
Chemical Stability:	Stable under normal conditions
Incompatibility to other substances:	Aluminium, Chromium trioxide, oxidisers
Hazardous Decomposition Products:	When heated to decomposition, it emits acrid smoke.
Conditions to avoid:	Heat, sparks, flames.
Possibility of Hazardous Reactions:	On long term storage, materials containing similar functional groups form peroxides of unknown stability.
<u>SECTION-11: TOXICOLOGICAL INFORMATION</u>	

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Route of Entry:	Inhalation, skin absorption, skin contact.
Acute Exposure Hazards:	INHALATION HAZARD: Yes; INGESTION HAZARD: Yes, if swallowed; SKIN CONTACT HAZARD: Yes; EYE CONTACT HAZARD: Yes & it causes irritation.
Chronic Exposure Hazards:	Yes, Repeated or prolonged exposure may cause dermatitis and defatting of skin.
Animal Toxicity:	Draize test, rabbit, eye: 2 mg/24H Severe; Draize test, rabbit, skin: 20 mg/24 hr Moderate; Oral, mouse: LD50 = 100 mg/kg; Oral, rabbit: LD50 = 3400 mg/kg;
Carcinogenicity:	Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology:	No information available.
Teratogenicity:	No information available.
Reproductive Effects:	No information available.
Mutagenicity:	No information available.
Neurotoxicity:	No information available.

SECTION-12: ECOLOGICAL INFORMATION

Chronic hazards to the aquatic environment:	Fish Product: Yes (1510-1730 mg/liter, 96 hours)
	Aquatic Invertebrates Product: Yes (2817-3710 mg/liter, 48 hours)
Persistence and Degradability:	BOD/COD Ratio Product: No data available.
Bio-accumulative Potential :	No data available.
Mobility in Soil:	No data available.
Other Adverse Effects:	No data available.

SECTION-13: DISPOSAL CONSIDERATIONS

Waste treatment methods:	
General information:	The generation of waste should be avoided or minimized wherever possible. Dispose of waste and residues in accordance with local authority requirements.
Disposal methods:	Dispose of waste and residues in accordance with local authority requirements. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION-14: TRANSPORT INFORMATION

General information:	Shipping descriptions may vary based on mode of transport, quantities, package size, origin and destination with safety instructions.
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SECTION-15: REGULATORY INFORMATION

OSHA:	Hazardous
WHMIS Status & classification (Canada):	Controlled & Class B/2: Combustible liquid/vapor
US EPCRA:	None



I-BUTANOL

Pictograms & Symbols:



Harmful



Irritant

SECTION-16: OTHER INFORMATION

Information contained in this Material Safety Data Sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy. Suitability for a particular application or results to be obtained from them. It is upto the User / Distributor to ensure that the information contained in the Material Safety Data Sheet is relevant to the product manufactured / handled or sold by him as the case may be APL makes no warranties, expressed or implied, in respect of the adequacy of this document for any particular purpose.