

2-METHYLPROPAN-1-OL

GHS Safety Data Sheet

Version No:2.0

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

ISOBUTANOL

OTHER NAMES

C₄-H₁₀-O, (CH₃)₂-CH-CH₂-OH, isopropylcarbinol, "2-methyl propanol", 2-methyl-1-propanol, "2-methyl propan-1-ol", "2-methylpropyl alcohol", "1-propanol, 2-methyl-", 1-hydroxymethylpropane, "isobutyl alcohol", IBA

PROPER SHIPPING NAME

ISOBUTANOL (ISOBUTYL ALCOHOL)

PRODUCT USE

As a solvent for varnish and paint removers, an intermediate for amino coating resins and as a substitute for n-butanol.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

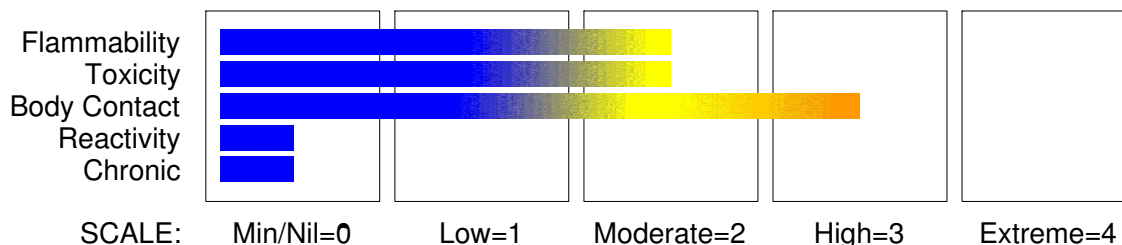
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Inhalation) Category 4

Acute Toxicity (Oral) Category 5

Flammable Liquid Category 3

Respiratory Irritation Category 3

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Section 2 - HAZARDS IDENTIFICATION

Serious Eye Damage Category 1

Skin Corrosion/Irritation Category 2

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EMERGENCY OVERVIEW

HAZARD

DANGER

Determined using GHS criteria:

H335 H226 H332 H303 H315 H318

May cause respiratory irritation

Flammable liquid and vapour

Harmful if inhaled

May be harmful if swallowed

Causes skin irritation

Causes serious eye damage

PRECAUTIONARY STATEMENTS

Prevention

Use only non-sparking tools.

Take precautionary measures against static discharge

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment

Keep away from heat/sparks/open flame - No smoking.

Use only outdoors or in a well ventilated area.

Wear protective gloves and eye/face protection.

Keep container tightly closed.

Response

Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Wear eye/face protection.

If eye irritation persists, get medical advice/attention.

If skin irritation occurs, seek medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Specific treatment: refer to Label or MSDS.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.

In case of fire, use foam for extinction.

Wash/Decontaminate removed clothing before reuse.

IF ON SKIN: Gently wash with plenty of soap and water.

Call a POISON CENTER or doctor/physician if you feel unwell.

Remove/Take off immediately all contaminated clothing

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Section 2 - HAZARDS IDENTIFICATION

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
isobutanol	78-83-1	>99

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
 - Transport to hospital or doctor without delay.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

- To treat poisoning by the higher aliphatic alcohols:
- Gastric lavage with copious amounts of water.
 - It may be beneficial to instill 60 ml of mineral oil into the stomach.
 - Oxygen and artificial respiration as needed.
 - Electrolyte balance: it may be useful to start 500 ml. M/6 sodium bicarbonate intravenously but maintain a cautious and conservative attitude toward electrolyte

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Section 4 - FIRST AID MEASURES

replacement unless shock or severe acidosis threatens.

- To protect the liver, maintain carbohydrate intake by intravenous infusions of glucose.
- Haemodialysis if coma is deep and persistent. [GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, Ed 5)

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for shock.
- Monitor and treat, where necessary, for pulmonary oedema.
- Anticipate and treat, where necessary, for seizures.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- If the patient is hypoglycaemic (decreased or loss of consciousness, tachycardia, pallor, dilated pupils, diaphoresis and/or dextrose strip or glucometer readings below 50 mg), give 50% dextrose.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Acidosis may respond to hyperventilation and bicarbonate therapy.
- Haemodialysis might be considered in patients with severe intoxication.
- Consult a toxicologist as necessary. BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.

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Section 5 - FIRE FIGHTING MEASURES

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.

Avoid spraying water onto liquid pools.

If safe to do so, switch off electrical equipment until vapour fire hazard is removed.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

Fight fire from a safe distance, with adequate cover.

Cool fire exposed containers with water spray from a protected location.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

FIRE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Personal Protective Equipment

Gloves, boots (chemical resistant).

Breathing apparatus.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

MAJOR SPILLS

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.

No smoking, naked lights or ignition sources. Increase ventilation.

absorb vapour., Contain spill with sand, earth or vermiculite.

Use only spark-free shovels and explosion proof equipment.

Collect recoverable product into labelled containers for recycling.

Absorb remaining product with sand, earth or vermiculite.

Collect residues and seal in labelled drums for disposal.

Wash area down with large quantity of water and prevent runoff into drains.,
up operations, decontaminate and launder all protective clothing and equipment before
storing and re-using.

If contamination of drains or waterways occurs, advise emergency services.

After clean

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Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

isobutanol 1600 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

isobutanol 250 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

isobutanol 150 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

isobutanol 100 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	$\geq 0.1\%$	Toxic (T)	$\geq 3.0\%$
R50	$\geq 0.25\%$	Corrosive (C)	$\geq 5.0\%$
R51	$\geq 2.5\%$		
else	$\geq 10\%$		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid generation of static electricity.
- DO NOT use plastic buckets.
- Earth all lines and equipment.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.

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Section 7 - HANDLING AND STORAGE

- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

- Packaging as recommended by manufacturer.
- Check that containers are clearly labelled.
- Glass container.
- Plastic container.
- Plastic drum.
- Store in metal drums or safety cans.

STORAGE INCOMPATIBILITY

- Avoid storage with oxidisers.

STORAGE REQUIREMENTS

- Observe manufacturer's storing and handling recommendations.
- Keep containers securely sealed.
- No smoking, naked lights, heat or ignition sources.
- Store in original containers in approved flammable liquid storage area.
- Store in a cool, dry place.
- Store in a well-ventilated area.
- Store away from incompatible materials.
- DO NOT use aluminium or galvanised containers.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Protect containers against physical damage.
- Check regularly for spills and leaks.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- isobutanol: CAS:78- 83- 1

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
isobutanol		1, 600

ODOUR SAFETY FACTOR (OSF)

OSF=31 (ISOBUTYL ALCOHOL)

MATERIAL DATA

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class A or B.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

		are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

Odour Threshold Value: 0.66-40 ppm (detection), 1.8-53 ppm (recognition)

Although there do not appear to be reports of isobutyl alcohol causing auditory impairment or vestibular damage in humans (as with n-butanol) the recommended TLV-TWA recognises the slightly greater acute toxic potential of isobutanol versus n-butanol. Exposure at or below this limit is thought to significantly reduce the risk of skin irritation.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

OTHER

- Overalls.
 - Eyewash unit.
 - Barrier cream.
 - Skin cleansing cream.
- Ensure there is ready access to a safety shower.

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

" Forsberg Clothing Performance Index" .

The effect(s) of the following substance(s) are taken into account in the

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

computer- generated selection: isobutanol

Protective Material CPI *.

BUTYL	A
BUTYL/NEOPRENE	A
NITRILE+PVC	A
VITON	A
NEOPRENE	A
NITRILE	A
NATURAL+NEOPRENE	B
PVC	C
NATURAL RUBBER	C

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS	-
1000	50	-	A- AUS
5000	50	Airline *	-
5000	100	-	A- 2
10000	100	-	A- 3
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult

your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions.

If risk of inhalation or overexposure exists, wear SAA approved respirator or work in fume hood.

Provide adequate ventilation in warehouse or closed storage areas.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear flammable liquid, does not mix with water. Strong, sweet and disagreeable odour. Mixes with alcohol, ether and acetone.

PHYSICAL PROPERTIES

Liquid.

Molecular Weight: 74.2

Melting Range (°C): - 108

Solubility in water (g/L): 4.5 % @ 20 C

pH (1% solution): Not available.

Volatile Component (%vol): 100 approx.

Relative Vapour Density (air=1): 2.55

Lower Explosive Limit (%): 1.2

Autoignition Temp (°C): 440

State: Liquid

Boiling Range (°C): 108

Specific Gravity (water=1): 0.80

pH (as supplied): Not applicable

Vapour Pressure (kPa): 1.17 @ 20 C

Evaporation Rate: 0.82 (BuAc=1)

Flash Point (°C): 28

Upper Explosive Limit (%): 10.9

Decomposition Temp (°C): Not available

Viscosity: Not available

log Kow (Prager 1995):

0.76

log Kow (Sangster 1997):

0.65

log Kow: 0.65-0.83

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of open flame.
- Presence of heat source and ignition source.
- Presence of incompatible materials.
- Stable under normal storage conditions.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Effects on the nervous system characterise over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination), confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhoea. In the absence of effective treatment, respiratory arrest is the most common cause of death in animals acutely poisoned by the higher alcohols. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration. As a general observation, alcohols are more powerful central nervous system depressants than their aliphatic analogues. In sequence of decreasing depressant potential, tertiary alcohols with multiple substituent OH groups are more potent than secondary alcohols, which, in turn,

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Section 11 - TOXICOLOGICAL INFORMATION

are more potent than primary alcohols. The potential for overall systemic toxicity increases with molecular weight, principally because the water solubility is diminished and lipophilicity is increased.

EYE

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

The vapour is discomforting.

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

INHALED

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.

Inhalation hazard is increased at higher temperatures.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination.

If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by inhalation of vapour and skin contact. Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

Three out of 19 rats dosed orally with 0.2 ml isobutyl alcohol developed either forestomach carcinomas, liver cell carcinoma or myelogenous leukaemia and benign tumours were more prevalent than those found in a control group of animals.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 2460 mg/kg.

Dermal (rabbit) LD50: 3400 mg/kg.

IRRITATION

Skin (rabbit): mg (open)- SEVERE

Eye (rabbit): 20 mg/24h- Moderate

Eye (rabbit): 2 mg/24h - SEVERE

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Section 12 - ECOLOGICAL INFORMATION

Fish LC50 (96hr.) (mg/l):	1.43E+06
Algae IC50 (72hr.) (mg/l):	290
log Kow (Prager 1995):	0.76
log Kow (Sangster 1997):	0.65
log Pow (Verschueren 1983):	0.65/0.83
BOD5:	60%
COD:	100%
ThOD:	2.6
Half- life Soil - High (hours):	173
Half- life Soil - Low (hours):	43
Half- life Air - High (hours):	99.6
Half- life Air - Low (hours):	9.96
Half- life Surface water - High (hours):	173
Half- life Surface water - Low (hours):	43
Half- life Ground water - High (hours):	346
Half- life Ground water - Low (hours):	86
Aqueous biodegradation - Aerobic - High (hours):	173
Aqueous biodegradation - Aerobic - Low (hours):	43
Aqueous biodegradation - Anaerobic - High (hours):	692
Aqueous biodegradation - Anaerobic - Low (hours):	172
Aqueous biodegradation - Removal secondary treatment - High (hours):	99%
Photooxidation half- life water - High (hours):	1.90E+05
Photooxidation half- life water - Low (hours):	4813
Photooxidation half- life air - High (hours):	99.6
Photooxidation half- life air - Low (hours):	9.96

log Kow: 0.65-0.83

Half-life (hr) H₂O surface water: 96

Henry's atm m³ /mol: 4.00E-04

BOD 5 if unstated: 0.07-1.66,64%

COD: 100%

ThOD: 2.6

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID
HAZCHEM: 3[Y]

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Section 14 - TRANSPORTATION INFORMATION

UNDG:

Dangerous Goods Class:	3	Subrisk:	None
UN Number:	1212	Packing Group:	III
Shipping Name: ISOBUTANOL (ISOBUTYL ALCOHOL)			

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1212	Packing Group:	III
ERG Code:	3L		
Shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)			

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1212	Packing Group:	III
EMS Number:	F- E, S- D		
Shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)			

Section 15 - REGULATORY INFORMATION

REGULATIONS

isobutanol (CAS: 78-83-1) is found on the following regulatory lists;
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals

Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 26-Mar-2018