ISO-BUTANOL FOR SYNTHESIS MSDS

CAS No: 78-83-1 MSDS



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification of the substance/mixture and of the company/undertaking		
1.1. Product identifier		
Product form	: Substance	
	:	
EC index no	: 603-108-00-1	
EC no	: 201-148-0	
CAS No	: 78-83-1	
Product code	: 00057	
Formula	: C4H10O	
Chemical structure	H ₃ C OH	
Synonyms	: Isobutyl alcohol / 2-Methyl-1-propanol	
1.2. Relevant identified uses of the	substance or mixture and uses advised against	
1.2.1.Relevant identified uses Use of the substance/mixture	: Laboratory chemicals, Manufacture of substances	

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

SPAN LAB UNIT NO. 14,SKY INDUSTRIAL ESTATE,WALIV, VASAI (E) 401208 Mumbai - INDIA PH: +91 9820509929 info@spanlab.in www.spanlab.in

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye	H318
irritation, Category 1	
Flammable liquids,	H226
Category 3	
Skin corrosion/irritation,	H315
Category 2	
Specific target organ	H335
toxicity — Single	

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exposure, Category 3, Respiratory tract irritation Specific target organ H336 toxicity — Single exposure, Category 3, Narcosis

Full text of classification categories and H statements : see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Xi; R41 Xi; R37/38 R10 R67 Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements	
Labelling according to Regulation (EC)	No. 1272/2008 [CLP]
Hazard pictograms (CLP)	
	GHS05 GHS08 GHS02
Signal word (CLP)	: Danger
Hazard statements (CLP)	 H226 - Flammable liquid and vapour H315 - Causes skin irritation H318 - Causes serious eye damage H335 - May cause respiratory irritation H336 - May cause drowsiness or dizziness
Precautionary statements (CLP)	 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray P280 - Wear protective gloves/protective clothing/eye protection/face protection P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients		
3.1.	Substance	
Name		: iso-BUTANOL For Synthesis
CAS N	D	: 78-83-1
EC no		: 201-148-0

Safety Data Sheet

EC index no

: 603-108-00-1

Full text of R- and H-phrases: see section 16

3.2.	Mixture)	
Not ap	plicable		

4.1 Description of first aid measures First-aid measures after inhelation : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before ruse. If skin initiation occurs: Get medical advice/attention. Specific treatment (see on this label). First-aid measures after eve contact : Reinove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before ruse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see on this label). First-aid measures after eve contact : Rinse caluously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. First-aid measures after ingestion : Rinse amouth out with water. If you feel unwell, seek medical advice. 4.2. Most important symptoms and effects, both acute and delayed Symptoms/injuries after inhalation : May cause respiratory irritation. May cause drowsiness or dizziness. Symptoms/injuries after eve contact : Causes serious eve damage. 4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically. Sector of streat fightling measures 5.1. Extinguishing media : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2). Unsuitable extinguishing media	SECTIC	N 4: First aid measures		
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. First-aid measures after skin contact : Remove/Rake off immediately all contaminated clothing, Rines skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Cent medical advice/attention. Specific treatment (see on this label). First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. First-aid measures after inhalation : Rinse mouth out with water. If you feel unwell, seek medical advice. 42. Most important symptoms and effects, both acute and delayed Symptoms/injuries after inhalation : May cause respiratory irritation. May cause drowsiness or dizziness. Symptoms/injuries after inhalation : May cause respiratory irritation. Symptoms/injuries after eye contact : Causes skin irritation. Symptoms/injuries after eye contact : Causes serious eye damage. 4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically. : Section 5: Firefighting measures : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2). Unsuitable extinguishing media :				
Call a POISON CENTER or doctor/physician if you feel unwell. First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of scap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Cet medical advice/attention. Specific treatment (see on this label). First-aid measures after eye contact : Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. First-aid measures after ingestion : Rinse mouth out with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Symptoms/injuries after inhalation : May cause respiratory irritation. May cause drowsiness or dizziness. Symptoms/injuries after eye contact : Causes skin irritation and special treatment needed Treat symptomalically. Section 5 : Firefighting measures 51. Extinguishing media : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2). Unsuitable extinguishing media : Do not use a heavy water stream. 52. Special hazards arising from the substance or mixture Fire hazard : Flammable liquid and vapour. Explosion hazard : Do not attempt to take action without suitable protective equipment. SECTION 6: Accidental rolease measures	4.1.	Description of first aid measures	S	
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Emergency procedures : Evacuate unnecessary personnel. 6.1.2. For emergency responders	6.1.1.	For non-emergency personnel		
	Emerge		:	Evacuate unnecessary personnel.
	6.1.2.	For emergency responders		
			:	Avoid breathing dust/fume/gas/mist/vapours/spray.
6.2. Environmental precautions	6.2.	Environmental precautions		

Avoid release to the environment.

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6.3. Methods and material for contain	nment and cleaning up
Methods for cleaning up	: Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.
6.4. Reference to other sections	
No additional information available	
SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling	: No naked lights. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Wash thoroughly after handling.
7.2. Conditions for safe storage, incl	uding any incompatibilities
Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/ equipment.
Storage conditions	: Keep container tightly closed. Store in original container. Store in a dry place.
Incompatible materials	: Heat sources.
7.3. Specific end use(s)	
No additional information available	
SECTION 8: Exposure controls/personal	protection
8.1. Control parameters	

No additional information available

8.2. Exposure controls	
Hand protection	: protective gloves
Eye protection	: Chemical goggles or safety glasses
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.1. Information on basic physical a	nd chemical properties
Physical state	: Liquid
Molecular mass	: 74.12 g/mol
Colour	: Clear Colorless.
Odour	: sweet-musty odor.
Odour threshold	: 40 ppm
рН	: No data available
Relative evaporation rate (butylacetate=1)	: 0.8

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Melting point	: -108 °C
Freezing point	: No data available
Boiling point	: 108 °C
Flash point	: 280 °C
Critical temperature Auto-ignition temperature	: 274.6 °C : 4150 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable Flammable liquid and vapour
Vapour pressure	: 1.2 kPa (at 20°C)
Relative vapour density at 20 °C	: 2.56
Relative density	: No data available
Density Solubility	: 0.806 g/cm³ : Water: 9.5 g/100ml @ 20°C
Log Pow	: 0.8
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.017 - 0.106 vol %

9.2. Other information

No additional information available

10.1. Reactivity

No additional information available

10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

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SECTION 11: Toxicological information	l
11.1. Information on toxicological e	ffects
Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation. May cause drowsiness or dizziness.
oxpool of	
Specific target organ toxicity (repeated	: Not classified
exposure)	
Aspiration hazard	: Not classified

SECTI	ON 12: Ecological information
12.1.	Toxicity
No add	litional information available

12.2. Persistence and degradability

No additional information available

12.3.	12.3. Bioaccumulative potential	
iso-B	iso-BUTANOL For Synthesis (78-83-1)	
Log F	Pow	0.8

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations		
13.1. Waste treatment methods		
Product/Packaging disposal recommendations	: Dispose of contents/container to	
Additional information	: Handle empty containers with care because residual vapours are flammable.	
SECTION 14: Transport information		

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number	
UN-No. (ADR)	: 1212
UN-No. (IMDG)	: 1212
UN-No.(IATA)	: 1212
UN-No.(ADN)	: 1212
UN-No. (RID)	: 1212
	. 1212
14.2. UN proper shipping name	
Proper Shipping Name (ADR)	: ISOBUTANOL (ISOBUTYL ALCOHOL)
Proper Shipping Name (IMDG)	: ISOBUTANOL (ISOBUTYL ALCOHOL)
Proper Shipping Name (IATA)	: ISOBUTANOL
Proper Shipping Name (ADN)	: ISOBUTANOL (ISOBUTYL ALCOHOL)
Proper Shipping Name (RID)	: ISOBUTANOL (ISOBUTYL ALCOHOL)
Transport document description (ADR)	: UN 1212 ISOBUTANOL (ISOBUTYL ALCOHOL), 3, III, (D/E)
Transport document description (IMDG)	: UN 1212 ISOBUTANOL (ISOBUTYL ALCOHOL), 3, III (28°C c.c.)
Transport document description (IATA)	: UN 1212 ISOBUTANOL, 3, III
Transport document description (ADN)	: UN 1212 ISOBUTANOL (ISOBUTYL ALCOHOL), 3, III
Transport document description (RID)	: UN 1212 ISOBUTANOL (ISOBUTYL ALCOHOL), 3, III
14.3. Transport hazard class(es)	
ADR	
Transport hazard class(es) (ADR)	: 3
Danger labels (ADR)	: 3
	3
IMDG	
Transport hazard class(es) (IMDG)	: 3
Danger labels (IMDG)	: 3
	:
ΙΑΤΑ	
Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3

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ADN

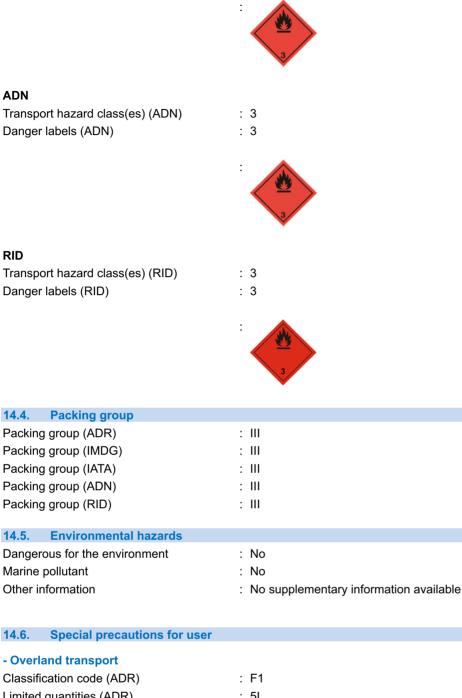
RID

14.4.

14.5.

14.6.

Marine pollutant



()		
Limited quantities (ADR)	:	5L
Excepted quantities (ADR)	:	E1
Packing instructions (ADR)	:	P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	:	MP19
Portable tank and bulk container instructions (ADR)	:	Т2
Portable tank and bulk container special provisions (ADR)	:	TP1
Tank code (ADR)	:	LGBF
Vehicle for tank carriage	:	FL
Transport category (ADR)	:	3
Special provisions for carriage - Packages (ADR)	:	V12
Special provisions for carriage - Operation (ADR)	:	S2

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Hazard identification number (RID) : 30

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

iso-BUTANOL For Synthesis is not on the REACH Candidate List iso-BUTANOL For Synthesis is not on the REACH Annex XIV List

15.1.2. National regulations

Germany	
AwSV/VwVwS Annex reference	: Water hazard class (WGK) 1, slightly hazardous to water (Classification according to VwVwS, Annex 2; WGK No 131)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	: Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)

Denmark

Recommendations Danish Regulation	: Young people below the age of 18 years are not allowed to use the product
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15.2. Chemical safety assessment No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Eye Dam. 1	Pe Dam. 1 Serious eye damage/eye irritation, Category 1	
Flam. Liq. 3	Flammable liquids, Category 3	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis	
H226	Flammable liquid and vapour	
H315	Causes skin irritation	
H318	Causes serious eye damage	
H335	May cause respiratory irritation	
H336	May cause drowsiness or dizziness	
R10	Flammable	

iso-BUTANOL For Synthesis Safety Data Sheet

Hazard identification number (Kemler No.): 30Orange plates: 30Itunnel restriction code (ADR): D/EEAC code: •3Y- Transport by sea:Limited quantities (IMDG): 5 LExcepted quantities (IMDG): 12Packing instructions (IMDG): 18C03Tank instructions (IMDG): 18C03Tank instructions (IMDG): T2Tank special provisions (IMDG): F-EEmS-No. (Spillage): S-DStowage category (IMDG): 28°C c.c.MFAG-No: 129- Air transportPCA Excepted quantities (IATA): Y344PCA limited quantities (IATA): 355PCA max net quantity (IATA): 366CAO max net quantity (IATA): 366CAO max net quantity (IATA): 366CAO max net quantity (IATA): 31L- Inland waterway transportClassification code (ADN): F1Limited quantities (ADN): 5 LExcepted quantities (RID): 5 LExcepted quantities (RID): 5 LExcepted quantities (RID): 5 LExcepted quantities (RID): 5 LExcepted quantities (RID) <t< th=""><th></th><th></th></t<>		
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- Inland waterway transportClassification code (ADN): F1Limited quantities (ADN): 5 LExcepted quantities (ADN): E1Carriage permitted (ADN): TEquipment required (ADN): PP, EX, AVentilation (ADN): VE01Number of blue cones/lights (ADN): 0- Rail transportClassification code (RID): F1Limited quantities (RID): 5LExcepted quantities (RID): 5LExcepted quantities (RID): E1Packing instructions (RID): P001, IBC03, LP01, R001Mixed packing provisions (RID): MP19Portable tank and bulk container instructions (RID): TP1 provisions (RID)Portable tank and bulk container special provisions (RID): TP1 ransport category (RID)Tank codes for RID tanks (RID): LGBF rransport category (RID)Transport category (RID): 3Special provisions for carriage – Packages: W12 (RID)	CAO max net quantity (IATA)	: 220L
Classification code (ADN): F1Limited quantities (ADN): 5 LExcepted quantities (ADN): E1Carriage permitted (ADN): TEquipment required (ADN): PP, EX, AVentilation (ADN): VE01Number of blue cones/lights (ADN): 0- Rail transportClassification code (RID): F1Limited quantities (RID): 5LExcepted quantities (RID): 5LExcepted quantities (RID): E1Packing instructions (RID): P001, IBC03, LP01, R001Mixed packing provisions (RID): MP19Portable tank and bulk container instructions (RID): TP1Portable tank and bulk container special provisions (RID): TP1Tank codes for RID tanks (RID): LGBFTransport category (RID): 3Special provisions for carriage – Packages: W12(RID): M12	ERG code (IATA)	: 3L
Classification code (ADN): F1Limited quantities (ADN): 5 LExcepted quantities (ADN): E1Carriage permitted (ADN): TEquipment required (ADN): PP, EX, AVentilation (ADN): VE01Number of blue cones/lights (ADN): 0- Rail transportClassification code (RID): F1Limited quantities (RID): 5LExcepted quantities (RID): 5LExcepted quantities (RID): E1Packing instructions (RID): P001, IBC03, LP01, R001Mixed packing provisions (RID): MP19Portable tank and bulk container instructions (RID): TP1Portable tank and bulk container special provisions (RID): TP1Tank codes for RID tanks (RID): LGBFTransport category (RID): 3Special provisions for carriage – Packages: W12(RID): M12	- Inland waterway transport	
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Special provisions for carriage – Packages : W12 (RID)		
(RID)		
Colis express (express parcels) (RID) : CE4	(RID)	
	Colis express (express parcels) (RID)	: CE4

Safety Data Sheet

R37/38	Irritating to respiratory system and skin
R41	Risk of serious damage to eyes
R67	Vapours may cause drowsiness and dizziness
Xi	Irritant

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product