

## SIGMA-ALDRICH

## MATERIAL SAFETY DATA SHEET

Date Printed: 01/30/2004  
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Version 1.1

## Section 1 - Product and Company Information

Product Name ISOAMYL ALCOHOL, 98+%

Product Number W205702

Brand ALDRICH

Company Sigma-Aldrich

Street Address 3050 Spruce Street

City, State, Zip, Country SAINT LOUIS MO 63103 US

Technical Phone: 314 771 5765

Emergency Phone: 414 273 3850 Ext. 5996

Fax: 800 325 5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
3-METHYL-1-BUTANOL, GMP	123-51-3	No

Formula C5H12O

Synonyms Alcool amilico (Italian) \* Alcool isoamylique (French) \* Amylowy alkohol (Polish) \* Fermentation amyl alcohol \* Isoamyl alcohol (ACGIH) \* Isoamyl alcohol, primary (OSHA) \* Isoamyl alkohol (Czech) \* Iso-amylalkohol (German) \* Isoamylol \* Isobutylcarbinol \* Isopentanol \* Isopentyl alcohol \* 2-Methyl-4-butanol \* 3-Methyl butanol \* 3-Methylbutan-1-ol \* 3-Methyl-1-butanol \* 3-Metil-butanolo (Italian)

RTECS Number: EL5425000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Combustible (USA) Flammable (EU). Harmful.  
Harmful if swallowed. Risk of serious damage to eyes. Irritating to respiratory system and skin.  
Readily absorbed through skin. Target organ(s): Central nervous system. Liver.

## HMIS RATING

HEALTH: 2\*  
FLAMMABILITY: 2  
REACTIVITY: 0

## NFPA RATING

HEALTH: 2  
FLAMMABILITY: 2  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

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## Section 4 - First Aid Measures

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### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

### DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

### EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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## Section 5 - Fire Fighting Measures

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### FLAMMABLE HAZARDS

Flammable Hazards: Yes

### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back.

### FLASH POINT

109.4 °F    43 °C    Method: closed cup

### EXPLOSION LIMITS

Lower: 1.2 %    Upper: 9 %

### AUTOIGNITION TEMP

340 °C

### FLAMMABILITY

N/A

### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions. Vapor may travel considerable distance to source of ignition and flash back.

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## Section 6 - Accidental Release Measures

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### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for

disposal. Ventilate area and wash spill site after material pickup is complete.

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## Section 7 - Handling and Storage

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### HANDLING

User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Suitable: Keep tightly closed. Keep away from heat and open flame.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Mechanical exhaust required. Safety shower and eye bath.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	125 PPM
USA	ACGIH	TWA	100 PPM
USA	MSHA Standard-air	TWA	100 PPM (360 MG/M3)
USA	OSHA.	PEL	8H TWA 100 PPM (360 MG/M3)
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	100 PPM
		STEL	125 PPM

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## Section 9 - Physical/Chemical Properties

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Appearance                      Color: Colorless  
    Form: Clear liquid

Property	Value	At Temperature or Pressure
Molecular Weight	88.15 AMU	
pH	N/A	
BP/BP Range	131 - 132 °C	
MP/MP Range	-117 °C	
Freezing Point	N/A	
Vapor Pressure	2 mmHg	20 °C
Vapor Density	> 3 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.809 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.3 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	

Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	109.4 °F 43 °C	Method: closed cup
Explosion Limits	Lower: 1.2 % Upper: 9 %	
Flammability	N/A	
Autoignition Temp	340 °C	
Refractive Index	1.407	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents, Acid chlorides, Acid anhydrides.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Readily absorbed through skin. May be harmful if absorbed through the skin.

Eye Contact: Causes severe eye irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

### TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system. Liver. Kidneys.

### SIGNS AND SYMPTOMS OF EXPOSURE

Prolonged contact can cause: Dizziness. Narcotic effect. Nausea, headache, and vomiting. Coughing, chest pains, difficulty in breathing. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### TOXICITY DATA

Oral

Rat

1300 mg/kg

LD50

Remarks: Liver:Fatty liver degeneration. Kidney, Ureter, Bladder:Other changes. Blood:Other changes.

Intravenous

Mouse

234 MG/KG

LD50

Oral  
Rabbit  
3438 mg/kg  
LD50  
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Corneal damage. Cardiac:Pulse rate. Lungs, Thorax, or Respiration:Dyspnea.

Skin  
Rabbit  
3970 UL/KG  
LD50

#### IRRITATION DATA

Eyes  
Human  
150 ppm

Skin  
Rabbit  
20 mg  
24H  
Remarks: Moderate irritation effect

Eyes  
Rabbit  
20 mg  
24H  
Remarks: Moderate irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Species: Rat  
Route of Application: Oral  
Dose: 27 GM/KG  
Exposure Time: 75W  
Frequency: I  
Result: Tumorigenic:Carcinogenic by RTECS criteria.  
Liver:Tumors. Blood:Leukemia

Species: Rat  
Route of Application: Subcutaneous  
Dose: 3800 MG/KG  
Exposure Time: 85W  
Frequency: I  
Result: Tumorigenic:Carcinogenic by RTECS criteria.  
Liver:Tumors. Blood:Leukemia

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#### Section 12 - Ecological Information

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No data available.

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#### Section 13 - Disposal Considerations

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#### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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#### Section 14 - Transport Information

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DOT

Proper Shipping Name: PENTANOLS  
UN#: 1105  
Class: 3  
Packing Group: Packing Group III  
Hazard Label: Flammable liquid  
PIH: Not PIH

IATA

Proper Shipping Name: PENTANOLS  
IATA UN Number: 1105  
Hazard Class: 3  
Packing Group: III

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Section 15 - Regulatory Information

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EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 10 22 41 37/38  
Risk Statements: Flammable. Harmful if swallowed. Risk of serious damage to eyes. Irritating to respiratory system and skin.  
S: 16 26 36  
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Combustible (USA) Flammable (EU). Harmful.  
Risk Statements: Harmful if swallowed. Risk of serious damage to eyes. Irritating to respiratory system and skin.  
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. Do not breathe vapor.  
US Statements: Readily absorbed through skin. Target organ(s): Central nervous system. Liver.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No  
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

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Section 16 - Other Information

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DISCLAIMER

Caution: for manufacturing, processing, or repacking. This material is not sterile and has not been pyrogen-tested.