

## 1-PENTANOL

## Material Safety Data Sheet

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Emergency Telephone Number  
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## PRODUCT IDENTIFICATION:

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 Synonyms: n-amyl alcohol; pentyl alcohol; n-butyl carbinol

Formula CAS No.: 71-41-0

Molecular Weight: 88.15

Hazardous Ingredients: 1-Pentanol

Chemical Formula: C<sub>5</sub>H<sub>11</sub>OH

## PRECAUTIONARY MEASURES

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 WARNING! FLAMMABLE LIQUID. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Keep away from heat, sparks and flame.  
 Keep container closed.  
 Use with adequate ventilation.  
 Avoid breathing vapor.  
 Avoid contact with eyes, skin and clothing.  
 Wash thoroughly after handling.

## EMERGENCY FIRST AID

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 If swallowed and if patient is conscious, give two glasses of water. Do not induce vomiting. Call a physician. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. In all cases call a physician.  
 SEE SECTION 5.

## Physical Data

## SECTION 1

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 Appearance: Clear, colorless liquid.

Odor: Characteristic odor.

Solubility: 2.7gm/100gm water @ 22 C (71.6 F).

Boiling Point: 134-138 C (273-280 F) Vapor Density (Air=1): 3.04

Melting Point: -79 C (-110 F) Vapor Pressure (mm Hg): 1 @ 13.6 C (54 F).

Specific Gravity: 0.81

Evaporation Rate: (BuAc=1) 0.18

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

## Fire and Explosion

## SECTION 2

## Information

## Fire:

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 Flammable. Flashpoint 91 F (33 C) closed cup.  
 Autoignition 572 F (300 C). Explosive limit in air, % by volume : lel : 1.2uel : 10 @ 100 C (212 F)

## Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Fire Extinguishing Media: Dry chemical, foam or carbon dioxide. 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.

Reactivity Data

SECTION 3

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Stability:

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Stable at room temperature in sealed containers.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. Can form aldehydes burning in limited air.

Hazardous Polymerization: This substance does not polymerize.

Incompatibilities: Strong oxidizers. Strong inorganic acids. Heat and sources of ignition.

Leak/Spill Disposal Information

SECTION 4

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Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Contain and recover liquid when possible. Collect as hazardous waste and atomize in a suitable RCRA approved combustion chamber, or absorb with vermiculite, dry sand, earth or similar material for disposal as hazardous waste in a RCRA approved facility. Do not flush to sewer!

Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

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A. Exposure/Health Effects

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Inhalation: Inhalation of vapors can irritate the nose, throat, and upper respiratory passages. Higher concentrations have a narcotic effect and may cause headache, nausea, vomiting, dizziness, double vision, shortness of breath, and delirium.

Ingestion: Moderately toxic by ingestion, can cause headache, nausea, delirium and methemoglobin formation in the blood. Other symptoms may parallel those from inhalation exposure. Vomiting may cause aspiration into lungs and result in chemical pneumonia.

Skin Contact: Brief contact is not irritating. Prolonged contact may cause severe irritation with pain, redness, swelling, and possible tissue damage. Suspected to be a systemic poison by absorption through skin; systemic effects paralleling ingestion may occur.

Eye Contact: Can be a severe irritant from vapors or liquid. Symptoms may include tearing, pain, redness, swelling, chemical burns.

Chronic Exposure: Repeated inhalation of aerosols may result in lung and kidney injury.

Aggravation of

Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems, or impaired kidney or respiratory

function may be more susceptible to the effects of the substance.

B. FIRST AID

- Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- Ingestion: If patient is conscious, give two glasses of water. Do not induce vomiting. Call a physician.
- Skin Exposure: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician.
- Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY (RTECS, 1993)

Oral rat LD50: 2200 mg/kg; skin rabbit LD50: 3600 mg/kg; irritation skin rabbit: 3200 mg/kg/24H severe; eye rabbit: 81 mg/24H severe; investigated as a mutagen.

Occupational Control Measures SECTION 6

Airborne Exposure Limits: -ACGIH Threshold Limit Value (TLV): Isoamyl alcohol has a TLV of 100 ppm (TWA), 125 ppm (STEL) which may be used as a model.

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 TLV is exceeded a full facepiece chemical cartridge respirator may be worn up to the maximum use concentration specified by the respirator supplier. Alternatively, a supplied air full facepiece respirator or airlined hood may be worn.

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. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information SECTION 7

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 oxidizing materials. 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.

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

Hazard Categories for SARA  
 Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
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X	X	X		

Product or Components of Product:	SARA EHS		SARA Sec. 313 Chemicals		CERCLA	RCRA
	Sec. 302 RQ	TPQ	Name List	Chemical Category	Sec.103 RQ lbs	Sec. 261.33
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1-PENTANOL (71-41-0)	No	No	No	No	No	No

SARA Section 302 EHS RQ:  
 Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:  
 Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:  
 Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:  
 Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:  
 Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33

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