1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1-Pentanol
Product Number : 398268
Brand : Sigma-Aldrich
Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Target Organ Effect, Irritant

Target Organs
Central nervous system

Other hazards which do not result in classification
Lachrymator.

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Oral (Category 5)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3), Respiratory system

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H303 + H313 May be harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
- Health hazard: 2
- Chronic Health Hazard: *
- Flammability: 2
- Physical hazards: 0

NFPA Rating
- Health hazard: 2
- Fire: 2
- Reactivity Hazard: 0

Potential Health Effects
- Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes eye irritation.
- Ingestion: May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Synonyms       | n-Amyl alcohol  
|                | Pentyl alcohol  
| Formula        | C₅H₁₂O          
| Molecular Weight | 88.15 g/mol    

No ingredients are hazardous according to OSHA criteria.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information
Use water spray to cool unopened containers.
6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- **Full contact Material:** Nitrile rubber
  - Minimum layer thickness: 0.4 mm
  - Break through time: 480 min
  - Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

- **Splash contact Material:** Nitrile rubber
  - Minimum layer thickness: 0.2 mm
  - Break through time: 65 min
  - Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

**Eye protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
- Form: liquid
- Colour: colourless

Safety data
- pH: 7
- Melting point/freezing point: Melting point/range: -78 °C (-108 °F) - lit.
- Flash point: 49 °C (120 °F) - closed cup
- Ignition temperature: 300 °C (572 °F)
- Auto-ignition temperature: no data available
- Lower explosion limit: 1.2 %(V)
- Upper explosion limit: 10 %(V)
- Vapour pressure: 2.0 hPa (1.5 mmHg) at 20 °C (68 °F)
- Density: 0.811 g/cm3 at 25 °C (77 °F)
- Water solubility: 22.8 g/l at 25 °C (77 °F)
- Partition coefficient: n-octanol/water: log Pow: 1.51
- Relative vapour density: 3.04 - (Air = 1.0)
- Odour: characteristic
- Odour Threshold: no data available
- Evaporation rate: no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents, Alkali metals, Strong acids, Halides, Aldehydes

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
- Oral LD50
  LD50 Oral - mouse - 200 mg/kg
Remarks: Behavioral: General anesthetic.
LD50 Oral - rat - 3,670 mg/kg

**Inhalation LC50**
no data available

**Dermal LD50**
LD50 Dermal - rabbit - 2,306 mg/kg
Remarks: Liver: Other changes. Kidney, Ureter, Bladder: Other changes.

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Skin irritation - 24 h

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitisation**
Did not cause sensitisation on laboratory animals.

**Germ cell mutagenicity**
no data available

**Carcinogenicity**

**Reproductive toxicity**
no data available

**Teratogenicity**
no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**
Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

| Ingestion | May be harmful if swallowed. |
| Skin      | May be harmful if absorbed through skin. Causes skin irritation. |
| Eyes      | Causes eye irritation. |

**Signs and Symptoms of Exposure**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**
no data available

**Additional Information**
RTECS: SB9800000

### 12. ECOLOGICAL INFORMATION

**Toxicity**

| Toxicity to fish | LC50 - Oncorhynchus mykiss (rainbow trout) - 370 - 490 mg/l - 96 h |
| Toxicity to daphnia and other aquatic | EC50 - Daphnia magna (Water flea) - 341 mg/l - 48 h |
invertebrates

**Persistence and degradability**

- **Biodegradability**  
  - aerobic  
  - Result: 97% - Readily biodegradable.

**Bioaccumulative potential**
- no data available

**Mobility in soil**
- no data available

**PBT and vPvB assessment**
- no data available

**Other adverse effects**
- no data available

### 13. DISPOSAL CONSIDERATIONS

**Product**
- Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
- Dispose of as unused product.

### 14. TRANSPORT INFORMATION

**DOT (US)**
- UN number: 1105  
  - Class: 3  
  - Packing group: III  
  - Proper shipping name: Pentanols  
  - Reportable Quantity (RQ):  
  - Marine pollutant: No  
  - Poison Inhalation Hazard: No

**IMDG**
- UN number: 1105  
  - Class: 3  
  - Packing group: III  
  - Proper shipping name: PENTANOLS  
  - Marine pollutant: No  
  - EMS-No: F-E, S-D

**IATA**
- UN number: 1105  
  - Class: 3  
  - Packing group: III  
  - Proper shipping name: Pentanols

### 15. REGULATORY INFORMATION

**OSHA Hazards**
- Combustible Liquid, Target Organ Effect, Irritant

**SARA 302 Components**
- SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
- SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
- Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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16. OTHER INFORMATION

Further information
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