

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifiers**Product name: **1-PENTANOL**CAS-No.: **71-41-0**Product Number: **A69875****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,

UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 Emergency telephone numberEmergency Phone #: **+44 (0)845 1200 506****2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

According to Regulation (EC) No1272/2008; Flammable liquids (Category 3), Acute toxicity, Inhalation (Category 4), Skin irritation (Category 2), Specific target organ toxicity - single exposure (Category 3)

According to European Directive 67/548/EEC as amended: Flammable. Harmful by inhalation. Irritating to respiratory system and skin. Repeated exposure may cause skin dryness or cracking.

2.2 Label elements

Pictogram



Signal word

Warning

Hazard statement(s): H226 Flammable liquid and vapour. H315 Causes skin irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation.

Precautionary statement(s): P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

**Hazard symbol(s):**

R-phrase(s): R10 Flammable. R20 Harmful by inhalation. R37/38 Irritating to respiratory system and skin. R66 Repeated exposure may cause skin dryness or cracking.

S-phrases(s): S46 If swallowed, seek medical advice immediately and show this container or label.

2.3 Other hazards – Lachrymator..

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Pentan-1-ol (Synonyms : n-Amyl alcohol; Pentyl alcohol)

Formula: **CH₃(CH₂)₄OH**

Molecular Weight: **88.15**

CAS-No.: **71-41-0**

EC-No.: **200-752-1**

Index-No.: **603-006-00-7**

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

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

In case of skin contact: Wash off with soap and plenty of water.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

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

4.2 Most important symptoms and effects, both acute and delayed: no data available

4.3 Indication of immediate medical attention and special treatment needed: no data available

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

5.2 Special hazards arising from the substance or mixture: no data available

5.3 Precautions for fire-fighters: Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information: Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions: Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections: For disposal see section 13.

7. HANDLING AND STORAGE

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses: no data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Face shield and safety glasses

Skin protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | | |
|---------------------------------------------|---------------------|----------------------------------------|
| a) Appearance: | Form: Liquid | Colour: Colourless |
| b) Odour: | characteristic | |
| c) Odour Threshold: | no data available | |
| d) pH: | pH 7 | |
| e) Melting/freezing point: | 78 °C | Melting point/range: no data available |
| f) Initial boiling point and boiling range: | 136 - 138 °C | |
| g) Flash point: | 49 °C - closed cup | |

- h) Evaporation rate: no data available
i) Flammability (solid, gas): no data available
j) Upper/lower flammability or explosive limits: 1.2 – 10% (V)
k) Vapour pressure: 2.0 hPa at 20 °C
l) Vapour density: 3.04 - (Air = 1.0)
m) Relative density: 0.811 g/cm³ at 25 °C
n) Water solubility: 22.8 g/l at 25 °C
o) Partition coefficient: n-octanol/water: 1.51
p) Autoignition temperature: 300 °C
q) Decomposition temperature: no data available
r) Viscosity: no data available
s) Explosive properties: no data available
t) Oxidizing properties: no data available
9.2 Other safety information: no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available

10.2 Chemical stability: Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions: no data available

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials: Strong oxidizing agents, Alkali metals, Strong acids, Halides, Aldehydes

10.6 Hazardous decomposition products: Formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: LD50 Oral - mouse - 200 mg/kg Remarks: Behavioural: General anaesthetic.

LD50 Oral - rat - 3,670 mg/kg.

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

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

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: Did not cause sensitization on laboratory animals.

Germ cell mutagenicity: no data available

Carcinogenicity: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Potential health effects

Inhalation Harmful if inhaled. Causes respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure: no data available

Additional Information: RTECS: SB9800000

12. ECOLOGICAL INFORMATION

12.1 Toxicity: Toxicity to fish LC50 - *Oncorhynchus mykiss* (rainbow trout) - 370 - 490 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 341 mg/l - 48 h

12.2 Persistence and degradability: Biodegradability aerobic
Result: 97 % - Readily biodegradable.

12.3 Bioaccumulative potential: no data available

12.4 Mobility in soil: no data available

12.5 Results of PBT and vPvB assessment: no data available

12.6 Other adverse effects: no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN-Number

ADR/RID: 1105 IMDG: 1105 IATA: 1105

14.2 UN proper shipping name

ADR/RID: PENTANOLS

IMDG: PENTANOLS

IATA: PENTANOLS

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for users: EMS-No: F-E, S-D

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture: no data available

15.2 Chemical Safety Assessment: no data available

16. OTHER INFORMATION

Acute Tox. Acute toxicity

Flam. Liq. Flammable liquids

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Skin Irrit. Skin irritation

STOT SE Specific target organ toxicity - single exposure

Xn Harmful

R10 Flammable.

R20 Harmful by inhalation.

R37/38 Irritating to respiratory system and skin.