

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

1 Identification**Product identifier****Product name:** 1-Pentanol**Stock number:** A13093, L05057**CAS Number:**

71-41-0

EC number:

200-752-1

Index number:

603-200-00-1

Relevant identified uses of the substance or mixture and uses advised against.

No further relevant information available.

Identified use: SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification**Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory irritation.

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

Xn; Harmful

R20: Harmful by inhalation.



Xi; Irritant

R37/38: Irritating to respiratory system and skin.

R10: Flammable.

Information concerning particular hazards for human and environment: Not applicable**Hazards not otherwise classified** No information known.**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms

GHS02



GHS07

Signal word Warning**Hazard statements**

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

(Contd. on page 2)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

Product name: 1-Pentanol

(Contd. of page 1)

H315 Causes skin irritation.
H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves / protective clothing.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P315 Get immediate medical advice/attention.

WHMIS classification

B3 - Combustible liquid
D2B - Toxic material causing other toxic effects

**Classification system**

HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

| | | |
|------------|---|----------------------------|
| HEALTH | 2 | Health (acute effects) = 2 |
| FIRE | 2 | Flammability = 2 |
| REACTIVITY | 1 | Physical Hazard = 1 |

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances**CAS# Description:**

71-41-0 1-Pentanol

Identification number(s):

EC number: 200-752-1

Index number: 603-200-00-1

4 First-aid measures

Description of first aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.

Information for doctor**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

- USA

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

Product name: 1-Pentanol

(Contd. of page 2)

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions:

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Prevention of secondary hazards: Keep away from ignition sources.**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Store away from oxidizing agents.**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.**8 Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters**Components with limit values that require monitoring at the workplace:**

71-41-0 1-Pentanol (100.0%)

WEEL (USA) Long-term value: 100 ppm

Additional information: No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.

USA

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

Product name: 1-Pentanol

(Contd. of page 3)

9 Physical and chemical properties**Information on basic physical and chemical properties****General Information****Appearance:**

Form: Liquid
Color: Colorless
Odor: Characteristic
Odor threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: -79 °C (-110 °F)
Boiling point/Boiling range: 136-138 °C (277-280 °F)
Sublimation temperature / start: Not determined

Flash point: 49 °C (120 °F)
Flammability (solid, gaseous) Not determined.
Ignition temperature: 300 °C (572 °F)
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

Explosion limits:

Lower: 1.6 Vol %
Upper: 8 Vol %
Vapor pressure at 20 °C (68 °F): 2.6 hPa (2 mm Hg)
Density at 20 °C (68 °F): 0.812 g/cm³ (6.776 lbs/gal)
Relative density Not determined.
Vapor density Not determined.
Evaporation rate Not determined.
Solubility in / Miscibility with
Water at 20 °C (68 °F): 22 g/l
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic at 20 °C (68 °F): 4 mPas
kinematic: Not determined.
Other information No further relevant information available.

10 Stability and reactivity

Reactivity No information known.

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions Reacts with strong oxidizing agents

Incompatible materials: Oxidizing agents

Hazardous decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information**Information on toxicological effects****Acute toxicity:**

Harmful if inhaled.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification:

| | | |
|--------|------|---------------------|
| Oral | LD50 | 4600 mg/kg (rat) |
| Dermal | LD50 | 2300 mg/kg (rabbit) |

Skin irritation or corrosion: Causes skin irritation.

Eye irritation or corrosion: May cause irritation

Sensitization: No sensitizing effects known.

Germ cell mutagenicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

(Contd. on page 5)
USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

Product name: 1-Pentanol

(Contd. of page 4)

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

Aspiration hazard: No effects known.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, ADR, IMDG, IATA UN1105

UN proper shipping name

DOT Pentanols
ADR 1105 Pentanols
IMDG, IATA PENTANOLS

Transport hazard class(es)

DOT



Class 3 Flammable liquids.

Label 3

ADR



Class 3 (F1) Flammable liquids

Label 3

IMDG, IATA



Class 3 Flammable liquids.

(Contd. on page 6)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 07/11/2013

Product name: 1-Pentanol

(Contd. of page 5)

| | |
|--|---|
| Label | 3 |
| Packing group DOT, ADR, IMDG, IATA | III |
| Environmental hazards: | Not applicable. |
| Special precautions for user Danger code (Kemler): EMS Number: | Warning: Flammable liquids 30 F-E,S-D |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| Transport/Additional information: DOT | |
| Marine Pollutant (DOT): | No |
| UN "Model Regulation": | UN1105, Pentanols, 3, III |

15 Regulatory information

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

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57

Substance is not listed.

REACH - Pre-registered substances Substance is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Health, Safety and Environmental Department.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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