

according to Regulation (EC) No 1907/2006

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 1 of 9

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

1-Pentanol

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Use as laboratory reagent

**1.3. Details of the supplier of the safety data sheet**

Company name: Waldeck GmbH & Co KG  
Street: Havixbecker Str. 62  
Place: D-48161 Münster  
Post-office box: 410180  
D-48065 Münster  
Telephone: +49(0)180/2247662      Telefax: +49(0)180/1247662  
Responsible Department: Labor  
Mo. – Do.: 08.00 – 17.00 Uhr, Fr.: 08.00 – 15.00 Uhr  
+49(0)180/2247662

**1.4. Emergency telephone number:****SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Flammable liquid: Flam. Liq. 3

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

Flammable liquid and vapour.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

Pentan-1-ol

**Signal word:** Warning**Pictograms:****Hazard statements**

H226 Flammable liquid and vapour.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.

according to Regulation (EC) No 1907/2006

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 2 of 9

**Precautionary statements**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
71-41-0	Pentan-1-ol			100 %
	200-752-1			
	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H226 H332 H315 H319 H335			

Full text of H and EUH statements: see section 16.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**After inhalation**

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

**After contact with skin**

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

**After ingestion**

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 3 of 9

**5.2. Special hazards arising from the substance or mixture**

Flammable. Vapours can form explosive mixtures with air. In case of fire may be liberated: Hazardous combustion products.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

**6.3. Methods and material for containment and cleaning up**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

**Advice on protection against fire and explosion**

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Advice on storage compatibility**

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

**Further information on storage conditions**

storage temperature: at room temperature

**7.3. Specific end use(s)**

Use as laboratory reagent

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****8.2. Exposure controls**

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 4 of 9

**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

**Protective and hygiene measures**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Wear suitable protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	colourless
Odour:	characteristic

**Test method**

pH-Value (at 20 °C):	not determined
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**Changes in the physical state**

Melting point:	-78 °C
Initial boiling point and boiling range:	138 °C
Flash point:	47 °C

**Flammability**

Solid:	not applicable
Gas:	not applicable

Lower explosion limits:	1,6 vol. %
Upper explosion limits:	8 vol. %
Ignition temperature:	300 °C DIN 51794

**Auto-ignition temperature**

Solid:	not applicable
Gas:	not applicable

Decomposition temperature:	not determined
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**Oxidizing properties**

Not oxidizing.

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 5 of 9

Vapour pressure: 2,6 hPa  
(at 20 °C)

Density (at 20 °C): 0,815 g/cm<sup>3</sup>

Water solubility: 22 g/L  
(at 20 °C)

**Solubility in other solvents**

not determined

Partition coefficient: 1,51

Viscosity / dynamic: 4 mPa·s  
(at 20 °C)

Vapour density: 3,0  
(at 20 °C)

Evaporation rate: not determined

**9.2. Other information**

Solid content: not determined

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Flammable.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Violent reaction with: Oxidising agent, Alkali metals, Alkaline earth metal, Acid chlorides, inorganic, Isocyanate, Acid

**10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

**10.5. Incompatible materials**

No information available.

**10.6. Hazardous decomposition products**

No known hazardous decomposition products.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute toxicity**

Harmful if inhaled.

**ATEmix calculated**

ATE (inhalative vapour) 11,00 mg/l; ATE (inhalative aerosol) 1,500 mg/l

according to Regulation (EC) No 1907/2006

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 6 of 9

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
71-41-0	Pentan-1-ol				
	oral	LD50 mg/kg	3670	Rat	
	dermal	LD50 mg/kg	2306	Rabbit	
	inhalative vapour	ATE	11 mg/l		
	inhalative aerosol	ATE	1,5 mg/l		

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (Pentan-1-ol)

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP].

**SECTION 12: Ecological information****12.1. Toxicity**

The product is not: Ecotoxic.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
71-41-0	Pentan-1-ol					
	Acute crustacea toxicity	EC50	341 mg/l	48 h	Daphnia magna (Big water flea)	

**12.2. Persistence and degradability**

The product has not been tested.

CAS No	Chemical name				
	Method	Value	d	Source	
	Evaluation				
71-41-0	Pentan-1-ol				
	Biodegradation	80-90 %	28		
	Readily biodegradable (according to OECD criteria).				

**12.3. Bioaccumulative potential**

The product has not been tested.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
71-41-0	Pentan-1-ol	1,51

according to Regulation (EC) No 1907/2006

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 7 of 9

**12.4. Mobility in soil**

The product has not been tested.

**12.5. Results of PBT and vPvB assessment**

The product has not been tested.

**12.6. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled.

**SECTION 14: Transport information****Land transport (ADR/RID)**

<b>14.1. UN number:</b>	UN 1105
<b>14.2. UN proper shipping name:</b>	PENTANOLS
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	III
Hazard label:	3



Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

**Inland waterways transport (ADN)**

<b>14.1. UN number:</b>	UN 1105
<b>14.2. UN proper shipping name:</b>	PENTANOLS
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	III
Hazard label:	3



Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1

**Marine transport (IMDG)**

<b>14.1. UN number:</b>	UN 1105
<b>14.2. UN proper shipping name:</b>	PENTANOLS

according to Regulation (EC) No 1907/2006

**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 8 of 9

**14.3. Transport hazard class(es):**

3

**14.4. Packing group:**

III

Hazard label:

3



Special Provisions:

223

Limited quantity:

5 L

Excepted quantity:

E1

EmS:

F-E, S-D

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number:**

UN 1105

**14.2. UN proper shipping name:**

PENTANOLS

**14.3. Transport hazard class(es):**

3

**14.4. Packing group:**

III

Hazard label:

3



Special Provisions:

A3

Limited quantity Passenger:

10 L

Passenger LQ:

Y344

Excepted quantity:

E1

IATA-packing instructions - Passenger:

355

IATA-max. quantity - Passenger:

60 L

IATA-packing instructions - Cargo:

366

IATA-max. quantity - Cargo:

220 L

**14.6. Special precautions for user**

Warning: Combustible liquid.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

2010/75/EU (VOC):

100 % (815 g/l)

2004/42/EC (VOC):

100 % (815 g/l)

**Additional information**

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D):

1 - slightly water contaminating



**1-Pentanol**

Revision date: 30.05.2017

Product code: A101

Page 9 of 9

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****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 IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

**Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]**

Classification	Classification procedure
Flam. Liq. 3; H226	
Acute Tox. 4; H332	
Skin Irrit. 2; H315	
Eye Irrit. 2; H319	
STOT SE 3; H335	

**Relevant H and EUH statements (number and full text)**

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

**Further Information**

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*