

Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 02.02.2024

Version: 6.0

Product: **PENTANOL MIXTURE**

(ID no. 30036714/SDS_GEN_00/EN)

Date of print 16.10.2025

1. Identification

Product identifier

PENTANOL MIXTURE

Chemical name: pentanol, branched and linear

CAS Number: 94624-12-1

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

Relevant identified uses: Chemical

Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Petrochemicals

Telephone: +49 621 60-42151

E-mail address: sds-petrochemicals@basf.com

Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 3

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Acute Tox. 5 (oral)
 Acute Tox. 4 (Inhalation - mist)
 Acute Tox. 5 (dermal)
 Skin Corr./Irrit. 2
 Eye Dam./Irrit. 1
 STOT SE 3 (irritating to respiratory system)

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:



Signal Word:

Danger

Hazard Statement:

H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection or face protection.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist or vapour.
P243	Take action to prevent static discharges.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P264	Wash contaminated body parts thoroughly after handling.
P240	Ground and bond container and receiving equipment.
P242	Use non-sparking tools.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

Precautionary Statements (Storage):

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P233 Keep container tightly closed.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Labeling of special preparations (GHS):

Repeated exposure may cause skin dryness or cracking.

According to UN GHS criteria

Hazard determining component(s) for labelling: Pentanol, branched and linear

Other hazardsAccording to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

See section 12 - Results of PBT and vPvB assessment.

3. Composition/Information on Ingredients**Substances**Chemical nature

Pentanol, branched and linear (Content (W/W): $\geq 99\%$)

CAS Number: 94624-12-1

EC-Number: 305-536-1

INDEX-Number: 603-006-00-7

Hazardous ingredients (GHS)

According to UN GHS criteria

Pentan-1-ol

Content (W/W): $\geq 60\%$ - $\leq 73\%$	Flam. Liq. 3
CAS Number: 71-41-0	Acute Tox. 5 (oral)
EC-Number: 200-752-1	Acute Tox. 5 (dermal)
INDEX-Number: 603-200-00-1	Skin Corr./Irrit. 2
	Eye Dam./Irrit. 1
	STOT SE 3 (irr. to respiratory syst.)
	Aquatic Chronic 2
	H226, H318, H315, H335, H303 + H313, H411

2-Methylbutan-1-ol

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Content (W/W): $\geq 25\%$ - $\leq 34\%$	Flam. Liq. 3
CAS Number: 137-32-6	Acute Tox. 5 (oral)
EC-Number: 205-289-9	Acute Tox. 5 (dermal)
INDEX-Number: 603-006-00-7	Skin Corr./Irrit. 2
	Eye Dam./Irrit. 1
	STOT SE 3 (irr. to respiratory syst.)
	H226, H318, H315, H335, H303 + H313
	EUH066

3-Methylbutan-1-ol

Content (W/W): $\geq 0\%$ - $\leq 5\%$	Flam. Liq. 3
CAS Number: 123-51-3	Acute Tox. 5 (dermal)
EC-Number: 204-633-5	Skin Corr./Irrit. 2
	Eye Dam./Irrit. 1
	STOT SE 3 (irr. to respiratory syst.)
	H226, H318, H315, H313, H335
	EUH066

For the classifications not written out in full in this section the full text can be found in section 16.

Mixtures

Not applicable

4. First-Aid Measures**Description of first aid measures**

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures**Extinguishing media**

Suitable extinguishing media:

dry powder, water spray, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons:

water jet

Additional information:

Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

Flammable liquid Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:

Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools.

Environmental precautions

Discharge into the environment must be avoided.

Methods and material for containment and cleaning up

Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage**Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection**Control parameters**Components with occupational exposure limits

71-41-0: Pentan-1-ol

123-51-3: 3-Methylbutan-1-ol

137-32-6: 2-Methylbutan-1-ol

Exposure controlsPersonal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

nitrile rubber (NBR) - 0.4 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

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Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Avoid inhalation of vapour. Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless	
Odour:	sweetish	
Odour threshold:		
	not determined	
pH value:	7,3 (25 °C)	(internal method)
glass transition temperature:	approx. -138 °C	(measured)
Boiling point:	134,3 °C (1.013,25 hPa)	(measured)
Flash point:	46 °C	(ISO 13736, closed cup)
Evaporation rate:		
	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	Flammable.	(derived from flash point)
Lower explosion limit:	1,4 %(V) (45,1 °C) The lower explosion point of the substance/mixture has been determined. The explosion point describes the temperature of a flammable liquid at which the concentration of the saturated vapour mixed with air equals the lower explosion limit.	(air)
Upper explosion limit:		
	For liquids not relevant for classification and labelling.	
Ignition temperature:	300 °C	(DIN 51794)
Vapour pressure:	4,14 hPa (20 °C)	(OECD Guideline 104)
	static	
Density:	0,8155 g/cm ³ (20 °C)	(other)
Relative density:	0,8155 (20 °C)	
Relative vapour density (air):	> 1 (20 °C) Heavier than air.	(estimated)

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Solubility in water:	22,6 g/l (25 °C)	(other)
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	1,29 - 1,51 By analogy with a product of similar composition	(other)
Information on: <i>Pentan-1-ol</i>		
Partitioning coefficient n-octanol/water (log Kow):	1,51 (25 °C) <i>Literature data.</i>	(measured)
Information on: <i>2-Methylbutan-1-ol</i>		
Partitioning coefficient n-octanol/water (log Kow):	1,29 <i>Literature data.</i>	(measured)
Information on: <i>3-Methylbutan-1-ol</i>		
Partitioning coefficient n-octanol/water (log Kow):	1,35 (23 °C; pH value: approx. 6,5)	(measured)
Self ignition:	not self-igniting	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	4,39 mPa.s (20 °C)	
Viscosity, kinematic:	5,38 mm ² /s (20 °C)	(measured)
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	(other)

Other information

Self heating ability:	not applicable, the product is a liquid	
SADT:	Not a substance/mixture liable to self-decomposition according to GHS.	
pKA:	not applicable, The substance does not dissociate.	
Adsorption/water - soil:	KOC: <= 6,33; log KOC: <= 0,8	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution:	Test substance	The substance / product is marketed or used in a non solid or granular form.
Molar mass:	88,15 g/mol	

10. Stability and Reactivity**Reactivity**

| When heated can give off ignitable vapours.

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Corrosion to metals:	Corrosive effects to metal are not anticipated.
Formation of flammable gases:	Remarks: Forms no flammable gases in the presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

No special precautions other than good housekeeping of chemicals.

Incompatible materialsSubstances to avoid:
strong oxidizing agents**Hazardous decomposition products**

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information**Information on toxicological effects**Acute toxicity

Assessment of acute toxicity:

Of low toxicity after short-term skin contact. Of low toxicity after single ingestion. Virtually nontoxic by inhalation. The European Union (EU) has classified this substance as 'harmful' after inhalation.

Experimental/calculated data:

LD50 rat (oral): 2.690 mg/kg (other)

LC50 rat (by inhalation): > 14 mg/l 6 h (other)

The European Union (EU) has classified this substance as 'harmful'. An aerosol was tested.

LD50 rabbit (dermal): 3.662 mg/kg (other)

Irritation

Assessment of irritating effects:

May cause severe damage to the eyes. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (FHSA Guideline)

The product has not been tested. The statement has been derived from the properties of the individual components.

Skin corrosion/irritation rabbit: Irritant. (BASF-Test)

The product has not been tested. The statement has been derived from the properties of the individual components.

Serious eye damage/irritation rabbit: irreversible damage (BASF-Test)

The product has not been tested. The statement has been derived from the properties of the individual components.

Respiratory/Skin sensitization

Assessment of sensitization:

The substance did not cause skin sensitization in humans.

Experimental/calculated data:

Human Maximization Test human: Non-sensitizing. (Human patch test)

The product has not been tested. The statement has been derived from the properties of the individual components.

Germ cell mutagenicity

Assessment of mutagenicity:

No mutagenic effect was found in various tests with bacteria and mammalian cell culture.

Carcinogenicity

Assessment of carcinogenicity:

Study scientifically not justified.

Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422).

Developmental toxicity

Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from the properties of the individual components.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No adverse effects were observed after repeated oral exposure in animal studies. The product has not been tested. The statement has been derived from the properties of the individual components.

Aspiration hazard

not applicable

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 530 mg/l, *Brachydanio rerio* (OECD 203; ISO 7346; 84/449/EWG, C.1, static)

Nominal concentration. The product has not been tested. The statement has been derived from the properties of the individual components.

LC50 (96 h) 700 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (OECD 203; ISO 7346; 84/449/EWG, C.1, static)

Nominal concentration. The product has not been tested. The statement has been derived from the properties of the individual components.

LC50 (96 h) > 120 mg/l, *Brachydanio rerio* (OECD 203; ISO 7346; 92/69/EWG, C.1, semistatic)

Limit concentration test only (LIMIT test). No effects at the highest test concentration. Nominal concentration. The product has not been tested. The statement has been derived from the properties of the individual components.

Aquatic invertebrates:

EC50 (48 h) > 120 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

Nominal values (confirmed by concentration control analytics) Limit concentration test only (LIMIT test).

Aquatic plants:

EC50 (72 h) > 320 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201, static)

Nominal values (confirmed by concentration control analytics) No effects at the highest test concentration.

Microorganisms/Effect on activated sludge:

EC10 (180 min) 370 mg/l, activated sludge, domestic (OECD Guideline 209, aerobic)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish:

No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates:

No data available regarding toxicity to daphnids.

Assessment of terrestrial toxicity:

Toxic effects have been observed in studies with soil living organisms.

Soil living organisms:

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No observed effect concentration (56 d) 106,75 mg/kg, Eisenia foetida (OECD Guideline 222, artificial soil)

The product has not been tested. The statement has been derived from the properties of the individual components.

Terrestrial plants:

No data available.

Other terrestrial non-mammals:

No data available.

Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Readily biodegradable (according to OECD criteria).

Elimination information:

100 % TIC of the ThIC (18 d) (OECD Guideline 310) (aerobic, activated sludge, domestic)

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis):

No data available.

Bioaccumulative potential

Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential:

No data available.

Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will slowly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Other ecotoxicological advice:

Do not discharge product into the environment without control.

13. Disposal Considerations

Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

ADR

UN number or ID number: UN1105
UN proper shipping name: PENTANOLS MIXTURE

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Special precautions for user: Tunnel code: D/E

RID

UN number or ID number: UN1105
UN proper shipping name: PENTANOLS MIXTURE

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Special precautions for user: None known

Inland waterway transport

ADN

UN number or ID number: UN1105
UN proper shipping name: PENTANOLS MIXTURE

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Special precautions for user: None known

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Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

UN number or ID number: UN 1105
UN proper shipping name: PENTANOLS MIXTURE

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Marine pollutant: NO
Special precautions for user: EmS: F-E; S-D

Air transport

IATA/ICAO

UN number or ID number: UN 1105
UN proper shipping name: PENTANOLS MIXTURE

Transport hazard class(es): 3
Packing group: III
Environmental hazards: No Mark as dangerous for the environment is needed
Special precautions for user: None known

Maritime transport in bulk according to IMO instruments

Regulation: IBC-Code

Product name: Amyl alcohol, primary
Pollution category: Z
Ship Type: 3

15. Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT SE	Specific target organ toxicity — single exposure
Aquatic Chronic	Hazardous to the aquatic environment - chronic
H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.
H411	Toxic to aquatic life with long lasting effects.
H313	May be harmful in contact with skin.
EUH066	Repeated exposure may cause skin dryness or cracking.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.