We create chemistry

Safety data sheet

BASF Safety data sheet
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Product: **n-PENTANOL**

(30036709/SDS_GEN_TH/EN)
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1. Substance/preparation and manufacturer/supplier identification

Product name:
n-PENTANOL

Use: Chemical

Manufacturer/supplier:
BASF (Thai) Limited
23rd Floor, Emporium Tower, 622, Sukhumvit 24 Rd.,
Klongton, Klongtoey, Bangkok 10110, THAILAND
Telephone: +66 2624-1999
Telefax number: +66 2664-9254
E-mail address: Thailand-SDS-info@basf.com

Emergency information:
International emergency number:
Telephone: +49 180 2273-112

2. Hazard identification

Classification according to UN GHS 2009

Classification of the substance and mixture:
Flammable liquids: Cat.3
Acute toxicity: Cat.5 (oral)
Acute toxicity: Cat.5 (dermal)
Skin irritation: Cat.2
Serious eye damage: Cat.1
Specific target organ toxicity — single exposure: Cat.3 (irritating to respiratory system)
Hazardous to the aquatic environment - chronic: Cat.2

Label elements and precautionary statement:

Pictogram:

Signal Word:
Danger

Hazard Statement:

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.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P273	Avoid release to the environment.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing mist or vapour or spray.
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):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
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.
P391	Collect spillage.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction.

Precautionary Statements (Storage):

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.

Other hazards which do not result in classification:
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

Chemical nature

Substance nature: Substance

pentan-1-ol
CAS Number: 71-41-0

Hazardous ingredients

pentan-1-ol

Content (W/W): > 99 % - <= 100 %	Flam. Liq.: Cat. 3
CAS Number: 71-41-0	Acute Tox.: Cat. 5 (oral)
	Acute Tox.: Cat. 5 (dermal)
	Skin Irrit.: Cat. 2
	Eye Dam.: Cat. 1
	STOT SE: Cat. 3 (irr. to respiratory syst.)
	Aquatic Chronic: Cat. 2

4. First-Aid Measures

General advice:
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. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

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.

Note to physician:
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

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

5. Fire-Fighting Measures

Suitable extinguishing media:
dry powder, water spray, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:
water jet

Additional information:
Use extinguishing measures to suit surroundings.

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

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.

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

6. Accidental Release Measures

Personal precautions:
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 for cleaning up or taking 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.

Additional information: 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.

7. Handling and Storage

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.

Storage

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

8. Exposure controls and personal protection

Components with occupational exposure limits

No substance specific occupational exposure limits known.

Personal 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:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
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)

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

Form:	liquid	
Colour:	colourless	
Odour:	sweetish	
Odour threshold:	not determined	
pH value:	approx. 7	
Melting point:	-78.6 °C	(OECD Guideline 102)
Boiling point:	138 °C (1,013.25 hPa)	(other)
Flash point:	47 °C	(ISO 13736, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability (solid/gas):	Flammable.	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	300 °C	(DIN 51794)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Self heating ability:	not applicable, the product is a liquid	
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.	
Vapour pressure:	2.04 hPa (20 °C) dynamic	(measured)
Density:	0.81 g/cm3 (20 °C) Literature data.	
Relative density:	0.81 (20 °C) Literature data.	(other)

Relative vapour density (air):	3.03 (20 °C) Heavier than air.	(calculated)
Solubility in water:	19.4 g/l (20 °C)	
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Pow):	1.51 (25 °C) Literature data.	(measured)
Adsorption/water - soil:	KOC: 6.33; log KOC: 0.8	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Viscosity, dynamic:	3.441 mPa.s (24.9 °C) Literature data.	
Molar mass:	88.15 g/mol	

10. Stability and Reactivity

Conditions to avoid:
No special precautions other than good housekeeping of chemicals.

Substances to avoid:
strong oxidizing agents

Corrosion to metals: Corrosive effects to metal are not anticipated.

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

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

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

Reactivity:
When heated can give off ignitable vapours.

11. Toxicological Information

Routes of exposure

Acute oral toxicity

Experimental/calculated data:
LD50rat (oral): approx. 3,645 mg/kg (BASF-Test)

Acute inhalation toxicity

LC0 rat (by inhalation): 8.29 mg/l 8 h (IRT)
No mortality within the stated exposition time as shown in animal studies. The European Union (EU) has classified this substance as 'harmful'. The vapour was tested.

Acute dermal toxicity

LD50 rabbit (dermal): 2,292 mg/kg (similar to OECD guideline 402)

Assessment of acute toxicity

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact. In animal studies the substance is virtually nontoxic after short-term inhalation. The European Union (EU) has classified this substance as 'harmful' after inhalation.

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

Irritation

Assessment of irritating effects:
Skin contact causes irritation. May cause severe damage to the eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive. (BASF-Test)

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

Respiratory/Skin sensitization

Assessment of sensitization:
There is no evidence of a skin-sensitizing potential.

Experimental/calculated data:
In vitro assay: Non-sensitizing. (In vitro skin sensitization test battery)

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
A long-term carcinogenity study which does not meet the current requirements did not show a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Specific target organ toxicity (single exposure)

Causes temporary irritation of the respiratory tract.

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

Assessment of repeated dose toxicity:
Repeated oral uptake of the substance did not cause substance-related effects.

Aspiration hazard

Some authorities consider isobutyl alcohol, n-primary alcohols and ketones with C3-C13 as "May be harmful if swallowed and enters airways"

Other relevant toxicity information

Has a degreasing effect on skin.

12. Ecological Information

Ecotoxicity

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. Toxic to aquatic organisms based on long-term (chronic) toxicity study data.

Toxicity to fish:
LC50 (96 h) 530 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 84/449/EWG, C.1, static)
Nominal concentration.

Aquatic invertebrates:
EC50 (48 h) 341 mg/l, Daphnia magna (Directive 79/831/EEC, static)
Nominal concentration.

Aquatic plants:
Toxic limit concentration (8 d) 260 mg/l (growth rate), Scenedesmus quadricauda (Algal growth inhibition test, static)
Nominal concentration. Literature data.

Microorganisms/Effect on activated sludge:
EC10 (3 h) 370 mg/l, activated sludge, domestic (OECD Guideline 209, aerobic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to fish:
No observed effect concentration (35 d) 10 mg/l, Brachydanio rerio (OECD Guideline 210, Flow through.)
The statement of the toxic effect relates to the analytically determined concentration.

Chronic toxicity to aquatic invertebrates:
EC10 (21 d), 0.059 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
The statement of the toxic effect relates to the analytically determined concentration.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

Mobility

Assessment transport between environmental compartments:
The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Persistence and degradability

Elimination information:
100 % CO_2 formation relative to the theoretical value (18 d) (OECD Guideline 310) (aerobic, activated sludge, domestic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.

Bioaccumulation potential

Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:
No data available.

Other adverse effects

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

13. Disposal Considerations

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

Domestic transport:

UN number or ID number:	UN 1105
UN proper shipping name:	PENTANOLS
Transport hazard class(es):	3, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Sea transport
IMDG

UN number or ID number:	UN 1105
UN proper shipping name:	PENTANOLS
Transport hazard class(es):	3, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
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
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

15. Regulatory Information

Other regulations

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

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

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.