

N-Pentanol

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\*According to GHS (Tenth Revised Edition)

Part 1: Identification

Product identifier	
Product Name	N-Pentanol
CAS No.	71-41-0
EC No.	200-752-1
Molecular Formula	C <sub>5</sub> H <sub>12</sub> O
Recommended use of the product and restrictions on use	
Relevant identified uses	coating
Uses advised against	Please consult manufacturer.
Details of the supplier	
Applicant Name	Changde New Materials Technology Co., Ltd. Yueyang Yunxi Branch
Applicant Address	No. 03 Xihuan Road, Hunan Yueyang Green Chemical High-tech Industrial Development Zone, Yunxi Street, Yunxi District, Yueyang City, Hunan Province, P.R.China
Applicant Post Code	414009
Applicant Telephone	86-730-3062661
Applicant Fax	
Applicant E-mail	
Supplier Name	Changde New Materials Technology Co., Ltd. Yueyang Yunxi Branch
Supplier Address	No. 03 Xihuan Road, Hunan Yueyang Green Chemical High-tech Industrial Development Zone, Yunxi Street, Yunxi District, Yueyang City, Hunan Province, P.R.China
Supplier Post Code	414009
Supplier Telephone	86-730-3062661
Supplier Fax	
Supplier E-mail	
Emergency phone number	
Emergency phone number	86-532-83889090

Part 2: Hazard(s) identification

Hazard classification according to GHS	
Flammable Liquids	Category 3
Skin Corrosion/Irritation	Category 2
Acute Toxicity – Inhalation	Category 4
Specific target organ toxicity, single exposure; Respiratory tract irritation	Category 3



## GHS Label elements

Hazard pictograms	 
Signal word	<b>Warning</b>

## Hazard statements

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

## Precautionary statements

### Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P271	Use only outdoors or with adequate ventilation.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

### Response

P317	Get medical help.
P319	Get medical help if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P317	If skin irritation occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

### Storage

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

### Disposal

P501

Dispose of contents/container in accordance with local/regional/national/ international regulations.

**Hazard description**

## ◆ Physical and chemical hazards

Flammable liquids, its vapor and air mixture can form explosive mixture.

## ◆ Health hazards

**Inhaled** Cough. Headache. Nausea. Dizziness. Drowsiness.**Ingestion** Burning sensation. Vomiting(Further see Inhalation).**Skin Contact** MAY BE ABSORBED! Redness.**Eye** Pain. Redness. Possible corneal damage.

## ◆ Environmental hazards

Please refer to 12th chapter of SDS.

**Part 3: Composition/information on ingredients****Substance/mixture**

Substance

Component	CAS No.	EC No.	Concentration (weight percent, %)
N-Pentanol	71-41-0	200-752-1	99

**Part 4: First-aid measures****Description of first aid measures****General advice** Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.**Eye contact** First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.**Skin contact** Remove contaminated clothes. Rinse skin with plenty of water or shower.**Ingestion** Rinse mouth. Refer for medical attention.**Inhalation** Fresh air, rest. Refer for medical attention.**Protecting of first-aiders** Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.**Most important symptoms/effects, acute and delayed****1** Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.**Indication of any immediate medical attention and special treatment needed****1** Treat symptomatically.**2** Symptoms may be delayed.**Part 5: Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

Small fire: dry chemical, CO2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities

	of water until well after fire is out.
<b>Unsuitable extinguishing media</b>	Use of water spray when fighting fire may be inefficient.



### Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

### Special protective equipment and precautions for fire-fighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Part 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

1	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
2	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
3	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
4	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
5	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
6	Collect absorbent material using a clean, non-sparking tool.
7	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
8	Cover with anti-solvent foam to reduce evaporation.
9	Cut off the source of the leak as much as possible.
10	Keep leaks in a ventilated place.
11	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.

12	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
13	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

## Part 7: Handling and storage



### Precautions for safe handling

1	Avoid inhalation of vapors.
2	Use only non-sparking tools.
3	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4	Use explosion proof equipment.
5	Handling is performed in a well ventilated place.
6	Wear suitable protective equipment.
7	Avoid contact with skin and eyes.
8	Keep away from heat/sparks/open flames/ hot surfaces.

### Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

## Part 8: Exposure controls/personal protection

### Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
N-Pentanol	Germany (AGS)	20	71	40	146
	Germany (DFG)	20	73	40	146
	Austria	100	360	200	720
	Denmark	100	18	200	720
	Finland	100	370	150	550
	Latvia	-	10	-	-

#### ◆ Biological limit values

Biological limit values	No relevant regulations
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#### ◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 series standard Determination of toxic substances in workplace air.

### Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

### Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

Part 9: Physical and chemical properties

Physical and chemical properties

Physical state	Transparant liquid
Colour	Colorless
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-79
Initial boiling point and boiling range(°C)	138
Flash point(Closed cup,°C)	43
Evaporation rate	No information available
Flammability	Flammable
Upper/lower explosive limits[%(v/v)]	Upper limit: 10.5; Lower limit: 1.2
Vapor pressure	0.6kPa （20°C ）
Relative vapour density(Air=1)	3
Relative density(Water=1)	0.8
Solubility	22 g/L （20°C ）
n-octanol/water partition coefficient	1.51
Auto-ignition temperature(°C)	320
Decomposition temperature(°C)	No information available
Kinematic viscosity	5 mm²/s （20°C ）
Particle characteristics	Not applicable

Part 10: Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No information available.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	No information available.

<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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## Part 11: Toxicological information

### Acute toxicity

Component	LD <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation,4h)
N-Pentanol	4590mg/kg(Rat)	2300mg/kg(Rabbit)	No information available

### Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
N-Pentanol	Not Listed	Not Listed

### Others

N-Pentanol(Component)	
Skin corrosion/irritation	Causes skin irritation(Category 2)
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause respiratory irritation(Category 3)
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
Germ cell mutagenicity	Based on available data, the classification criteria are not met

## Part 12: Ecological information

### Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
N-Pentanol	LC <sub>50</sub> : 530mg/L (96h)(Fresh water fish)	EC <sub>50</sub> : 52.9mg/L (48h)(Daphnia magna)	No information available

### Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
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### Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
N-Pentanol	Low	Low

### Bioaccumulative potential

Component	Bioaccumulative potential	Comments
N-Pentanol	Low	BCF=1.74

### Mobility in soil

Component	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
N-Pentanol	Low	4.506

### Results of PBT and vPvB assessment



Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
N-Pentanol	Not PBT/vPvB


## Part 13: Disposal considerations

### Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

## Part 14: Transport information

### Label

Transporting Label	
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### IMDG-CODE

UN number	1105
UN proper shipping name	PENTANOLS
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	III
Marine pollutant (Yes or no)	No

### ICAO/IATA-DGR

UN number	1105
UN proper shipping name	PENTANOLS
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	III

### UN-ADR

UN number	1105
UN proper shipping name	PENTANOLS
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	III

### Special precautions for user

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### Transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code



	No information available
◆	Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code
	No information available
◆	Transport in bulk in accordance with the IGC Code
	No information available



Part 15: Regulatory information

International chemical inventory

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
N-Pentanol	✓	✓	✓	✓	✓	✓	✓	✓	✓

- 【EC inventory】European Inventory of Existing Commercial Chemical Substances
- 【TSCA】United States Toxic Substances Control Act Inventory
- 【DSL】Canadian Domestic Substances List
- 【IECSC】China Inventory of Existing Chemical Substances
- 【NZIoC】New Zealand Inventory of Chemicals
- 【PICCS】Philippines Inventory of Chemicals and Chemical Substances
- 【KECI】Korea Existing Chemicals Inventory
- 【AIICS】Australian. Inventory of Industrial Chemical (AIICS)
- 【ENCS】Japan Inventory of Existing & New Chemical Substances

Note:

“√” Indicates that the substance included in the regulations.

“×” No data or not included in the regulations.

Part 16: Other information

Information on revision

Creation Date	2024/08/20
Revision Date	2025/05/07
Reason for revision	-

Reference

- 【1】IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- 【2】IARC, website: <http://www.iarc.fr/>.
- 【3】OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- 【4】CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- 【5】NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- 【6】EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- 【7】U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- 【8】Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienist
LC <sub>50</sub>	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD <sub>50</sub>	Lethal Dose 50%	NTP	National Toxicology Program

EC <sub>50</sub>	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC <sub>X</sub>	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P <sub>OW</sub>	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor	G1	Carcinogenic to humans
G2A	Probably carcinogenic to humans	G2B	Possibly carcinogenic to humans
G3	Not yet classified as carcinogenic to humans	G4	Probably not carcinogenic to humans

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 10th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user’s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.