

## Chemical Safety Data Sheet MSDS / SDS

## Phenobarbital

Revision Date:2026-05-31 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Phenobarbital  
CBnumber : CB8450779  
CAS : 50-06-6  
EINECS Number : 200-007-0  
Synonyms : phenobarbital,Fenobarbital

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P333+P313 IF SKIN irritation or rash occurs: Get medical advice/attention.  
P321 Specific treatment (see ... on this label).  
P363 Wash contaminated clothing before reuse.  
P501 Dispose of contents/container to.....  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P281 Use personal protective equipment as required.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P405 Store locked up.  
P501 Dispose of contents/container to.....

P302+P352 IF ON SKIN: wash with plenty of soap and water.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P272 Contaminated work clothing should not be allowed out of the workplace.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

#### Hazard statements

H317 May cause an allergic skin reaction

H351 Suspected of causing cancer

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## SECTION 3: Composition/information on ingredients

### Substance

Product name : Phenobarbital  
Synonyms : phenobarbital,Fenobarbital  
CAS : 50-06-6  
EC number : 200-007-0  
MF : C12H12N2O3  
MW : 232.24

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## SECTION 4: First aid measures

### Description of first aid measures

#### General information

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### After inhalation

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly.

#### After eye contact

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

#### After swallowing

Do not induce vomiting; immediately call for medical help.

Most important symptoms and effects, both acute and delayed									
No further relevant information available.									
Indication of any immediate medical attention and special treatment needed									

## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing agents

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

#### Special hazards arising from the substance or mixture

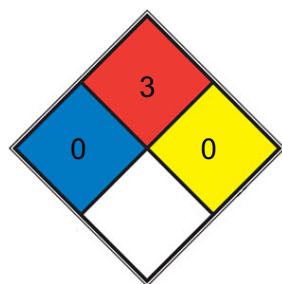
67-56-1 During heating or in case of fire poisonous gases are produced.

#### Advice for firefighters

#### Protective equipment

Mouth respiratory protective device.

#### NFPA 704



HEALTH 0 Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials

FIRE 3 Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions. Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

SPEC.

HAZ.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

### Environmental precautions

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

### **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 section 13.

Ensure adequate ventilation.

### **Protective Action Criteria for Chemicals**

#### **PAC-1**

67-56-1 Methanol 530 ppm

#### **PAC-2**

67-56-1 Methanol 2100 ppm

#### **PAC-3**

67-56-1 Methanol 7200 ppm

### **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.

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

### **Information about protection against explosions and fires**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

### **Conditions for safe storage, including any incompatibilities**

#### **Storage**

Store in accordance with information listed on the product insert.

### **Requirements to be met by storerooms and receptacles**

Store in a cool location.

### **Information about storage in one common storage facility**

Not required.

## Further information about storage conditions

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

## Specific end use(s)

No further relevant information available.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

Components with limit values that require monitoring at the workplace:

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

67-56-1 Methanol	
PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm
REL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
	Skin
	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm
TLV	Long-term value: 262 mg/m <sup>3</sup> , 200 ppm
	Skin; BEI

Ingredients with biological limit values:	
67-56-1 Methanol	
	15 mg/L
	Medium: urine
BEI	Time: end of shift
	Parameter: Methanol (background, nonspecific)

### Additional information

The lists that were valid during the creation were used as basis.

### Exposure controls

#### Appropriate engineering controls

No further data; see section 7.

#### Personal protective equipment

#### General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

### **Breathing equipment**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

### **Protection of hands**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

### **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

### **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

### **Eye protection**

Tightly sealed goggles

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## SECTION 9: Physical and chemical properties

### **Information on basic physicochemical properties**

#### **Physical State**

Liquid

#### **Color**

According to product specification

#### **Odor**

Alcohol-like

#### **Structural Formula**

C<sub>12</sub>H<sub>12</sub>N<sub>2</sub>O<sub>3</sub>

#### **Molecular Weight**

232.2 g/mol

#### **Storage Buffer**

**Odor Threshold**

Not determined.

**Formulation**

A 1 mg/ml solution in methanol

**Melting point/Melting range**

-98 °C (-144.4 °F)

**Boiling point/Boiling range**

64.7 °C (148.5 °F)

**Flammability**

Highly flammable.

**Explosion limits**

Lower: 5.5 Vol %

Upper: 44 Vol %

**Flash point**

9.7 °C (49.5 °F)

**Auto igniting**

455 °C (851 °F)

**Decomposition temperature**

Not determined.

**pH**

Not determined.

**Viscosity****Kinematic**

Not determined.

**SOLUBILITY**

Very slightly soluble in water, freely soluble in ethanol (96 per cent). It forms water-soluble compounds with alkali hydroxides, carbonates and ammonia.

**Dynamic**

Not determined.

**Solubility in / Miscibility with**

Very slightly soluble in water, freely soluble in ethanol (96 per cent). It forms water-soluble compounds with alkali hydroxides, carbonates and ammonia.

**Water at 20 °C (68 °F)**

1000 g/l

**Partition coefficient (n-octanol/water)**

Not determined.

**Vapor Pressure at 20 °C (68 °F)**

128 hPa (96 mm Hg)

**Density at 20 °C (68 °F)**

0.79 g/cm<sup>3</sup> (6.59255 lbs/gal)

**Relative Density**

1.2243 (rough estimate)

**Vapor Density**

Not determined.

**Particle characteristics**

Not applicable.

**Other information****Appearance****Form**

Liquid

**Important information on protection of health and environment, and on safety.****Ignition temperature**

Product is not selfigniting.

**Danger of explosion**

Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**Organic solvents**

99.9 %

**VOC content**

99.90 % 999.0 g/l / 8.34 lb/gal

**Solids content**

0.1 %

**Change in condition**

## Evaporation Rate

Not determined.

## Water solubility

<0.01 g/100 mL at 14 °C

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## SECTION 10: Stability and reactivity

### Reactivity

No further relevant information available.

### Chemical stability

### Thermal decomposition / conditions to be avoided

No decomposition if used according to specifications.

### Possibility of hazardous reactions

No dangerous reactions known.

### Conditions to avoid

No further relevant information available.

### Incompatible materials

oxidizing agents, reducing agents

### Hazardous decomposition products

carbon dioxide, carbon monoxide

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD/LC50 values that are relevant for classification:

Substance / Estimate	Route	Endpoint	Value
ATE (Acute Toxicity Estimate)	Oral	LD50	100 mg/kg (rat)
ATE (Acute Toxicity Estimate)	Dermal	LD50	300 mg/kg (rabbit)
ATE (Acute Toxicity Estimate)	Inhalative	LC50/4 h	3.08 mg/l (rat)
67-56-1 Methanol	Oral	LD50	100.1 mg/kg (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Nausea, Vomiting

67-56-1 Methanol	Dermal	LD50	300.1 mg/kg (rabbit) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
67-56-1 Methanol	Inhalative	LC50/4 h	3.1 mg/l (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Irritation symptoms in the respiratory tract.
50-06-6 Phenobarbital	Oral	LD50	162 mg/kg (rat)
50-06-6 Phenobarbital	Oral	LDLO	25,272 µg/kg/13D intermittent (woman)
50-06-6 Phenobarbital	Intraperitoneal	LD50	110 mg/kg (rat)
50-06-6 Phenobarbital	Subcutaneous	LD50	200 mg/kg (rat)

### Primary irritant effect

#### on the skin

No irritant effect.

#### on the eye

No irritating effect.

### Sensitization

Sensitization possible through skin contact.

### Additional toxicological information

The product shows the following dangers according to internally approved calculation methods for preparations

Toxic

Irritant

### Interactive effects

No interactive effects between components are known.

### Carcinogenic categories

#### IARC (International Agency for Research on Cancer)

50-06-6 Phenobarbital 2B

#### NTP (National Toxicology Program)

None of the ingredients is listed.

#### OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

### Alternative sources for toxicological information

No non-standard sources for toxicological information where used.

## SECTION 12: Ecological information

### Toxicity

#### Aquatic toxicity

No further relevant information available.

#### Persistence and degradability

No further relevant information available.

#### Bioaccumulative potential

No further relevant information available.

#### Mobility in soil

No further relevant information available.

### Results of PBT and vPvB assessment

#### PBT

Not applicable.

#### vPvB

Not applicable.

#### PBT:

Not applicable.

#### vPvB:

Not applicable.

### Other adverse effects

### Additional ecological information

#### General notes

Water hazard class 2 (Self-assessment) hazardous for water

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

Danger to drinking water if even small quantities leak into the ground.

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

## Uncleaned packagings

### Recommendation

Disposal must be made according to official regulations.

### Recommended cleansing agent

Water, if necessary with cleansing agents.

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## SECTION 14: Transport information

### UN-Number

DOT, IMDG, IATA UN1992

### UN proper shipping name

DOT Flammable liquids, toxic, n.o.s. (Methanol)

IMDG FLAMMABLE LIQUID, TOXIC, N.O.S. (Methanol)

IATA Flammable liquid, toxic, n.o.s. (Methanol)

### Transport hazard class(es)

#### DOT

Class: 3 Flammable liquids

Label: 3, 6.1

#### IMDG

Class: 3 Flammable liquids

Label: 3/6.1

#### IATA

Class: 3 Flammable liquids

Label: 3 (6.1)

### Packing group

DOT, IMDG, IATA II

### Environmental hazards

Not applicable.

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

### Transport/Additional information

DOT:

### Quantity limitations

On passenger aircraft/rail: 1 L

On cargo aircraft only: 60 L

**IMDG:**

**Limited quantities (LQ)**

1L

**Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

**IATA:**

**Remarks**

When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

**Special precautions for user**

Warning: Flammable liquids

**Hazard identification number (Kemler code)**

336

**EMS Number**

F-E, S-D

**Stowage Category**

B

**Stowage Code**

SW2 Clear of living quarters.

**UN "Model Regulation"**

UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S.

(METHANOL), 3 (6.1), II

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## SECTION 15: Regulatory information

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

No further relevant information available.

## Sara

Section 355 (extremely hazardous substances):	None of the ingredients is listed.
Section 313 (Specific toxic chemical listings):	67-56-1 Methanol
TSCA (Toxic Substances Control Act):	67-56-1 Methanol ACTIVE
Hazardous Air Pollutants 67-56-1 Methanol	
Chemicals known to cause cancer:	50-06-6 Phenobarbital
Chemicals known to cause reproductive toxicity for females:	None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for males:	None of the ingredients is listed.
Chemicals known to cause developmental toxicity:	67-56-1 Methanol

### Carcinogenic categories

EPA (Environmental Protection Agency):	None of the ingredients is listed.
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### TLV (Threshold Limit Value)

None of the ingredients is listed.

### NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

### Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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## SECTION 16: Other information

### Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flammable liquids 2: Flammable liquids – Category 2

Acute toxicity - oral 3: Acute toxicity – Category 3

Sensitization - skin 1: Skin sensitisation – Category 1

Carcinogenicity 2: Carcinogenicity – Category 2

Reproductive toxicity 1B: Reproductive toxicity – Category 1B

Specific target organ toxicity (single exposure) 1: Specific target organ toxicity (single exposure) – Category 1

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.