

**SIGMA-ALDRICH****SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Version 3.0 Revision Date 21.01.2009

Print Date 16.06.2010

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Product name : Phenobarbital

Product Number : 04710  
Brand : Fluka

Company : Sigma-Aldrich (Shanghai) Trading Co.,Ltd  
22A-B Century Ba-Shi Building,  
398 Huai Hai Zhong Road  
200020 SHANGHAI  
CHINA

Telephone : +862161415566  
Fax : +862161415567  
Emergency Phone # : +8615921213336  
E-mail address : china@sial.com

**2. HAZARDS IDENTIFICATION****Risk advice to man and the environment**

May cause harm to the unborn child. Also toxic if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>12</sub>H<sub>12</sub>N<sub>2</sub>O<sub>3</sub>  
Molecular Weight : 232,24 g/mol

| CAS-No.              | EC-No.    | Index-No. | Classification           | Concentration |
|----------------------|-----------|-----------|--------------------------|---------------|
| <b>Phenobarbital</b> |           |           |                          |               |
| 50-06-6              | 200-007-0 | -         | T, R61 - R25 - R40 - R43 | -             |

**4. FIRST AID MEASURES****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### Methods for cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

### Handling

Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

### Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

#### Eye protection

Safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|        |       |
|--------|-------|
| Form   | solid |
| Colour | white |

**Safety data**

|                       |                   |
|-----------------------|-------------------|
| pH                    | no data available |
| Melting point         | 174 - 178 °C      |
| Boiling point         | no data available |
| Flash point           | no data available |
| Ignition temperature  | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Water solubility      | no data available |

**10. STABILITY AND REACTIVITY****Storage stability**

Stable under recommended storage conditions.

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

LD50 Oral - rat - 162 mg/kg

**Irritation and corrosion**

no data available

**Sensitisation**

May cause allergic skin reaction.

**Chronic exposure**

Carcinogenicity - mouse - Oral

Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Liver:Tumors.

Carcinogenicity - rat - Oral

Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors. Endocrine:Thyroid tumors.

Carcinogenicity - rat - Oral

Tumorigenic:Neoplastic by RTECS criteria. Endocrine:Thyroid tumors.

IARC: Group 2B - Possibly carcinogenic to humans (Phenobarbital)

Genotoxicity in vitro - Hamster - Lungs

Sister chromatid exchange

Genotoxicity in vitro - Hamster - Lungs

Cytogenetic analysis

Genotoxicity in vitro - Human - lymphocyte

Cytogenetic analysis

Genotoxicity in vitro - Human - lymphocyte

Mutation in mammalian somatic cells.

Genotoxicity in vitro - rat - Liver

DNA damage

Genotoxicity in vitro - rat - Liver  
Unscheduled DNA synthesis

Genotoxicity in vitro - rat - Liver  
DNA inhibition

Genotoxicity in vitro - mouse - Embryo  
Morphological transformation.

Genotoxicity in vivo - rat - Oral

Genotoxicity in vivo - rat - Oral  
Unscheduled DNA synthesis

Genotoxicity in vivo - rat - Intraperitoneal

Genotoxicity in vivo - mouse - Oral  
Unscheduled DNA synthesis

Genotoxicity in vivo - mouse - Oral  
Cytogenetic analysis

Genotoxicity in vivo - mouse - Oral  
Dominant lethal test

Developmental Toxicity - rabbit - Oral  
Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Developmental Toxicity - rabbit - Oral  
Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material). Effects on Newborn: Biochemical and metabolic.

Developmental Toxicity - rat - Intraperitoneal  
Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Other developmental abnormalities.

Developmental Toxicity - Human - female - Unreported  
Specific Developmental Abnormalities: Gastrointestinal system.

Developmental Toxicity - Human - female - Unreported  
Specific Developmental Abnormalities: Central nervous system.

Developmental Toxicity - rat - Oral  
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Developmental Toxicity - rat - Oral  
Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - rat - Intramuscular  
Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material). Specific Developmental Abnormalities: Central nervous system.

Developmental Toxicity - mouse - Oral  
Specific Developmental Abnormalities: Central nervous system.

Reproductive toxicity - rabbit - Oral  
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death. Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Reproductive toxicity - rabbit - Intramuscular  
Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - rat - Oral  
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Abortion.

Reproductive toxicity - rat - Oral  
Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Reproductive toxicity - rat - Oral

Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Behavioral.

Reproductive toxicity - rat - Subcutaneous

Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Reproductive toxicity - rat - Subcutaneous

Effects on Newborn: Physical. Effects on Newborn: Delayed effects.

Reproductive toxicity - mouse - Oral

Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - mouse - Oral

Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Behavioral.

Reproductive toxicity - mouse - Intraperitoneal

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - mouse - Intraperitoneal

Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - mouse - Parenteral

Maternal Effects: Uterus, cervix, vagina.

### Signs and Symptoms of Exposure

can lead to addiction, Exposure to and/or consumption of alcohol may increase toxic effects., respiratory difficulties, Constipation., Nausea, Anorexia., Vomiting, Headache, Drowsiness, depression, Skin disorders, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### Potential Health Effects

|                      |   |
|----------------------|---|
| <b>Inhalation</b>    | May be harmful if inhaled. May cause respiratory tract irritation.                          |
| <b>Skin</b>          | May be harmful if absorbed through skin. May cause skin irritation.                         |
| <b>Eyes</b>          | May cause eye irritation.   |
| <b>Ingestion</b>     | Toxic if swallowed.   |
| <b>Target Organs</b> | Heart, Liver, Kidney, Central nervous system, Heart, Liver, Kidney, Central nervous system, |

### Additional Information

RTECS: CQ6825000

## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

|  |   |
|--|---|
| Toxicity to fish                                     | LC50 - Pimephales promelas (fathead minnow) - 484 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates. | EC50 - Daphnia magna (Water flea) - 1.465,86 mg/l - 24 h      |

### Further information on ecology

no data available

## 13. DISPOSAL CONSIDERATIONS

**Product**

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****ADR/RID**

UN-Number: 2811 Class: 6.1 Packing group: III  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Phenobarbital)

**IMDG**

UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Phenobarbital)  
Marine pollutant: No

**IATA**

UN-Number: 2811 Class: 6.1 Packing group: III  
Proper shipping name: Toxic solid, organic n.o.s. (Phenobarbital)

**15. REGULATORY INFORMATION****Labelling according to EC Directives**

## Hazard symbols

T Toxic

## R-phrases

R61 May cause harm to the unborn child.  
R25 Also toxic if swallowed.  
R40 Limited evidence of a carcinogenic effect.  
R43 May cause sensitization by skin contact.

## S-phrases

S53 Avoid exposure - obtain special instructions before use.  
S36/37 Wear suitable protective clothing and gloves.  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Restricted to professional users.

**16. OTHER INFORMATION****Further information**

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