Section 1. Chemical Product and Company Identification

Common Name/Trade Name: Phenobarbital

Catalog Number(s): PH118

CAS#: 50-06-6

RTECS: CQ6825000

TSCA: TSCA 8(b) inventory: No products were found.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300
CALL (310) 516-8000

Section 2. Composition and Information on Ingredients

Name | CAS # | TWA (mg/m³) | STEL (mg/m³) | CEIL (mg/m³) | % by Weight
--- | --- | --- | --- | --- | ---
1) Phenobarbital | 50-06-6 | | | | 

Toxicological Data on Ingredients

Phenobarbital:

ORAL (LD50): Acute: 162 mg/kg [rat].
Section 3. Hazards Identification

Potential Acute Health Effects  Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects  CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to kidneys, liver, central nervous system (CNS).
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact  Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention if irritation occurs.

Skin Contact  Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact  Not available.

Inhalation  If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation  Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion  If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion  Not available.

Section 5. Fire and Explosion Data

Flammability of the Product  May be combustible at high temperature.

Auto-Ignition Temperature  Not available.

Flash Points  Not available.

Flammable Limits  Not available.

Products of Combustion  These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances  Slightly flammable to flammable in presence of heat.

Explosion Hazards in Presence of Various Substances  Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions  SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards  When heated to decomposition it emits toxic fumes of nitrogen oxides.

Special Remarks on Explosion Hazards  Not available.
### Section 6. Accidental Release Measures

**Small Spill**
- Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill**
- Poisonous solid.
- Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dilute if needed. Eliminate all ignition sources. Call for assistance on disposal.

### Section 7. Handling and Storage

**Precautions**
- Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.

**Storage**
- Keep container tightly closed. Keep container in a cool, well-ventilated area.

### Section 8. Exposure Controls/Personal Protection

**Engineering Controls**
- Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection**
- Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill**
- Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**
- Not available.

### Section 9. Physical and Chemical Properties

**Physical state and appearance**
- Solid. (Crystalline solid. Crystalline powder.)

**Molecular Weight**
- 232.23 g/mole

**pH (1% soln/water)**
- Not available.

**Boiling Point**
- Not available.

**Melting Point**
- 174°C (345.2°F) - 178°C

**Critical Temperature**
- Not available.

**Specific Gravity**
- Not available.

**Vapor Pressure**
- Not applicable.

**Vapor Density**
- Not available.

**Volatility**
- Not available.

**Odor Threshold**
- Not available.

**Water/Oil Dist. Coeff.**
- The product is more soluble in oil; log(oil/water) = 1.5

**Ionicity (in Water)**
- Amphoteric.

**Dispersion Properties**
- See solubility in water, diethyl ether.

*Continued on Next Page*
Phenobarbital

Solubility
Soluble in diethyl ether.
Very slightly soluble in cold water.
Solubility in Water: 1 gram is soluble in about 1 liter of water.
Solubility in Alcohol: 1 gram is soluble in 8 ml of alcohol.
Solubility in Benzene: 1 gram is soluble in 700 ml Benzene.
Solubility in Ether: 1 gram is soluble in 13 ml Ether.
Soluble in alkali hydroxides, and carbonates.

Section 10. Stability and Reactivity Data

<table>
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<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
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<tbody>
<tr>
<td>Instability Temperature</td>
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<tr>
<td>Conditions of Instability</td>
<td>Excess heat, incompatible materials</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Reactive with oxidizing agents</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Special Remarks on Reactivity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Not available</td>
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<tr>
<td>Polymerization</td>
<td>Will not occur</td>
</tr>
</tbody>
</table>

Section 11. Toxicological Information

Routes of Entry
Inhalation. Ingestion.

Toxicity to Animals
Acute oral toxicity (LD50): 162 mg/kg [Rat].

Chronic Effects on Humans
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

Other Toxic Effects on Humans
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals
Not available.

Special Remarks on Chronic Effects on Humans
May affect genetic material (mutagenic).
May cause adverse reproductive effects and birth defects (teratogenic).
May cause cancer.
Excreted in maternal milk in human.

Special Remarks on other Toxic Effects on Humans
Acute Potential Health Effects:
Skin: May cause skin irritation.
Eyes: May cause eye irritation.
Inhalation: May cause respiratory tract irritation.
Ingestion: Harmful if swallowed. It is acutely toxic. Phenobarbital is a central nervous system (CNS) depressant. Moderate overdoses may resemble alcohol intoxication. It may cause loss of appetite, nausea, vomiting, diarrhea and/or constipation. It may cloud perception and distort judgement, induce drowsiness, somnolence, muscle contraction or spasticity, lethargy, dizziness, headache, nervousness, insomnia, memory problems, hallucinations, irritability, slurred speech, confusion, ataxia, sleep, nightmares and night terrors, depressed reflexes, and anesthesia. It may also cause respiratory depression (slow or rapid, shallow breathing), pulmonary edema, hypotension, hypothermia, coma, shock, and death from respiratory failure. Respiratory depression may lead to metabolic acidosis and hypoxia. Pupils may also be constricted and reactive to light with rapid involuntary movement (nystagmus), and in the late stages may be dilated due to hypoxia. It may also affect the kidneys (renal tubular transport). It may also cause fever or allergic reaction (dermatitis, and skin rashes). Chronic Potential Health Effects:
Skin: Phenobarbital can be addictive and is a drug of abuse. Prolonged and repeated ingestion may cause loss of appetite/weight loss, hypocalcemia, and produce central nervous system effects similar to that of acute ingestion. It may also produce variable pupillary responses, most often with miosis or with mydriasis in cases of severe intoxication. It may also affect the bones (osteomalacia), thyroid, kidneys, blood (anemia, leukopenia,
Phenobarbital

agranulocytosis, macrocytosis, methemoglobinemia), brain (degenerative changes), liver and cause liver damage. It may also cause allergic reaction. Medical Conditions Aggravated by Exposure: Hypersensitivity to material or other barbiturates; liver or kidney disease; alcoholism/use of alcohol; use with other CNS depressants.

Section 12. Ecological Information

Ecotoxicity
   Not available.

BOD5 and COD
   Not available.

Products of Biodegradation
   Possbly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
   The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation
   Not available.

Section 13. Disposal Considerations

Waste Disposal
   Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
   CLASS 6.1: Poisonous material.

Identification
   UNNA: 2811 : Toxic solid, organic, n.o.s. (Phenobarbital)   PG: III

Special Provisions for Transport
   Not available.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
   California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Phenobarbital
   California prop. 65 (no significant risk level): Phenobarbital: 0.002 mg/day (value)
   California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Phenobarbital
   Minnesota: Phenobarbital
   Massachusetts RTK: Phenobarbital
   California Director's List of Hazardous Substances: Phenobarbital

California Proposition 65 Warnings
   California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Phenobarbital
   California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

Continued on Next Page
P henobarbital

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 200-007-0).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Not listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

<table>
<thead>
<tr>
<th>WHMIS (Canada)</th>
<th>CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSCL (EEC)</td>
<td>CLASS D-2A: Material causing other toxic effects (VERY TOXIC).</td>
</tr>
<tr>
<td>R25- Toxic if swallowed.</td>
<td></td>
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<tr>
<td>R40- Limited evidence of a carcinogenic effect.</td>
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<tr>
<td>S36/37- Wear suitable protective clothing and gloves</td>
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</tr>
<tr>
<td>S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
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</tbody>
</table>

HMIS (U.S.A.)

| Health Hazard | 2 |
| Fire Hazard   | 1 |
| Reactivity    | 0 |
| Personal Protection | E |

National Fire Protection Association (U.S.A.)

| Flammability | 1 |
| Reactivity   | 0 |
| Specific hazard | |

WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

- Gloves.
- Lab coat.
- Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Safety glasses.
**Section 16. Other Information**

<table>
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<tr>
<th>MSDS Code</th>
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<tr>
<td>References</td>
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<tr>
<td>Other Special Considerations</td>
<td>Major Use: Medication</td>
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</table>

Validated by Sonia Owen on 1/27/2009.  
Verified by Sonia Owen.  

CALL (310) 516-8000

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. The Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.