

MATERIAL SAFETY DATA SHEET

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Version 1.4

Section 1 - Product and Company Information

Product Name	PHENOBARBITAL, SODIUM—DEA SCHEDULE IV ITEM
Product Number	P5178
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
5-ETHYL-5-PHENYLBARBITURIC ACID SODIUM SALT	57-30-7	No

Ingredient Name	CAS #	Percent	SARA 313
THE FOLLOWING SUBSTANCES ARE PRESENT AS RESIDUAL COMPONENTS OF PRODUCTION.	None		
ETHYL ALCOHOL, NON-DENATURED, 200 PROOF	64-17-5	<= 2	No

Formula	C12H11N2NaO3
Synonyms	5-Ethyl-5-phenylbarbituric acid sodium salt * 5-Ethyl-5-phenyl-2,4,6-(1H,3H,5H)pyrimidinetrione monosodium salt * Gardenal sodium * Fenobarbital natrium (Polish) * Luminal sodium * PBS * Phenemalum * Phenobal sodium * Phenobarbital elixir * Phenobarbital Na * Phenobarbital sodium * Phenobarbital sodium salt * Phenobarbitone sodium * Phenobarbitone sodium salt * Phenyl-aethyl-barbitursaeure natrium (German) * Phenylethylbarbituric acid, sodium salt * 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-phenyl-, monosodium salt (9CI) * Sodium 5-ethyl-5-phenylbarbiturate * Sodium luminal * Sodium phenobarbital * Sodium phenobarbitone * Sodium phenylethylbarbiturate * Sodium phenylethylmalonylurea * Sol phenobarbital * Sol phenobarbitone * Soluble phenobarbital * Soluble phenobarbitone
RTECS Number:	CQ7000000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

Toxic if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

Possible Carcinogen (US). Calif. Prop. 65 carcinogen & developmental hazard. Target organ(s): Central nervous system. Heart.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

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

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	254.2 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	

Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents, Alkali metals, Ammonia, Peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS EXOTHERMIC REACTIONS

Hazardous Exothermic Reactions: Will not occur

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Toxic if swallowed.

SENSITIZATION

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Liver. Heart.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

150 mg/kg

LD50

Intraperitoneal

Rat

152 MG/KG

LD50

Subcutaneous
Rat
195 MG/KG
LD50

Intravenous
Rat
83 MG/KG
LD50

Oral
Mouse
200 mg/kg
LD50

Intraperitoneal
Mouse
123 MG/KG
LD50

Subcutaneous
Mouse
180 MG/KG
LD50

Intravenous
Mouse
226 MG/KG
LD50

Oral
Cat
175 mg/kg
LD50

Remarks: Behavioral:Excitement. Behavioral:General anesthetic.
Behavioral:Ataxia.

Oral
Rabbit
150 mg/kg
LD50

Intraperitoneal
Rabbit
150 MG/KG
LD50

Intravenous
Rabbit
40 MG/KG
LD50

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat
Route of Application: Oral
Dose: 25 GM/KG
Exposure Time: 2Y
Frequency: C

Result: Tumorigenic:Neoplastic by RTECS criteria. Liver:Tumors.
Blood:Lymphomas including Hodgkin's disease.

Species: Rat
Route of Application: Oral
Dose: 11650 MG/KG
Exposure Time: 33W
Frequency: C
Result: Liver:Tumors. Tumorigenic:Equivocal tumorigenic agent by
RTECS criteria.

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 3623 MG/KG
Route of Application: Oral
Exposure Time: (1-21D PREG)
Result: Specific Developmental Abnormalities: Craniofacial
(including nose and tongue). Specific Developmental
Abnormalities: Musculoskeletal system. Specific Developmental
Abnormalities: Homeostasis

Species: Rat
Dose: 256 MG/KG
Route of Application: Oral
Exposure Time: (7-14D PREG)
Result: Specific Developmental Abnormalities: Other
developmental abnormalities.

Species: Mouse
Dose: 660 MG/KG
Route of Application: Oral
Exposure Time: (6-16D PREG)
Result: Specific Developmental Abnormalities: Central nervous
system.

Species: Mouse
Dose: 1650 MG/KG
Route of Application: Oral
Exposure Time: (6-16D PREG)
Result: Specific Developmental Abnormalities: Craniofacial
(including nose and tongue).

Species: Mouse
Dose: 10320 MG/KG
Route of Application: Oral
Exposure Time: (3W PRE/1-22D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.
Specific Developmental Abnormalities: Craniofacial (including
nose and tongue).

Species: Mouse
Dose: 5160 MG/KG
Route of Application: Oral
Exposure Time: (3W PRE/1-22D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal
system.

Species: Domestic Animals
Dose: 4 MG/KG
Route of Application: Intravenous
Exposure Time: (18W PREG)

Result: Specific Developmental Abnormalities: Respiratory system. Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

CHRONIC EXPOSURE - MUTAGEN

Species: Rat
Route: Oral
Dose: 38 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Mouse
Route: Intraperitoneal
Dose: 140 MG/KG
Mutation test: DNA damage

Species: Mouse
Route: Oral
Dose: 50 MG/KG
Mutation test: Other mutation test systems

Species: Mouse
Route: Intraperitoneal
Dose: 20 GM/KG
Mutation test: DNA inhibition

Species: Mouse
Dose: 5 MMOL/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Rat
Dose: 3623 MG/KG
Route of Application: Oral
Exposure Time: (1-21D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).

Species: Rat
Dose: 624 MG/KG
Route of Application: Oral
Exposure Time: (7-14D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 160 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (9-21D PREG)
Result: Effects on Newborn: Biochemical and metabolic.

Species: Rat
Dose: 40800 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D PRE)

Result: Effects on Fertility: Other measures of fertility

Species: Rat

Dose: 2100 MG/KG

Route of Application: Subcutaneous

Exposure Time: (3W MALE)

Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat

Dose: 520 MG/KG

Route of Application: Subcutaneous

Exposure Time: (9-21D PREG)

Result: Effects on Newborn: Behavioral. Maternal Effects: Parturition.

Species: Rat

Dose: 1040 MG/KG

Route of Application: Subcutaneous

Exposure Time: (9-21D PREG)

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

Species: Rat

Dose: 520 MG/KG

Route of Application: Subcutaneous

Exposure Time: (9-21D PREG)

Result: Effects on Newborn: Behavioral. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Species: Rat

Dose: 640 MG/KG

Route of Application: Subcutaneous

Exposure Time: (5-20D PREG)

Result: Effects on Newborn: Delayed effects.

Species: Rat

Dose: 40 MG/KG

Route of Application: Intramuscular

Exposure Time: (18-20D PREG/5D POST)

Result: Effects on Newborn: Biochemical and metabolic.

Species: Mouse

Dose: 120 MG/KG

Route of Application: Subcutaneous

Exposure Time: (16-21D PREG)

Result: Effects on Newborn: Behavioral.

Species: Mouse

Dose: 240 MG/KG

Route of Application: Subcutaneous

Exposure Time: (16-21D PREG)

Result: Effects on Newborn: Biochemical and metabolic.

Species: Mouse

Dose: 200 MG/KG

Route of Application: Subcutaneous

Exposure Time: (4-8D PREG)

Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Mouse

Dose: 200 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-21D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Hamster
Dose: 120 MG/KG
Route of Application: Subcutaneous
Exposure Time: (9-14D PREG)
Result: Paternal Effects: Other effects on male. Maternal Effects: Menstrual cycle changes or disorders. Maternal Effects: Other effects.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact the Drug Enforcement Administration concerning the disposal of controlled substances. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Toxic solids, organic, n.o.s.
UN#: 2811
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Toxic substances.
PIH: Not PIH

IATA

Proper Shipping Name: Toxic solid, organic, n.o.s.
IATA UN Number: 2811
Hazard Class: 6.1
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.
R: 25-40-43
Risk Statements: Toxic if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
S: 22-36/37/39-45
Safety Statements: Do not breathe dust. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.
Risk Statements: Toxic if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

Safety Statements: Do not breathe dust. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Possible Carcinogen (US). Calif. Prop. 65 carcinogen & developmental hazard. Target organ(s): Central nervous system. Heart.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer. This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.