1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name: EUTHASOL® Euthanasia Solution
Product Description: For euthanasia of dogs
Manufacturer/Supplier: Virbac AH, Inc.
Address: P.O. Box 162059
Fort Worth, Texas 76161
Phone Number: (800) 338-3659
Chemtrec Number (24 hour): (800) 424-9300
Other Emergency Numbers:
Poison Control Center: 1-800-222-1222
MSDS Revision Date: March 31, 2012
Supersedes MSDS Dated: March 19, 2009

Material Safety Data Sheet in compliance with OSHA’s Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

Emergency Overview
DANGER!
Harmful if ingested.
Poison: Keep out of reach of children.
Avoid contact with eyes, skin or clothing.

Routes of Entry
Eye contact - Skin contact - Ingestion - Inhalation

Carcinogenic Status
Contains an ingredient considered carcinogenic by NTP.

Target Organs
Eye - Skin - Respiratory Tract - Gastrointestinal Tract - Cardiovascular - Central Nervous System –
Liver - Reproductive - Heart

Health Effects - Eyes
Contact may cause severe eye irritation.

Health Effects - Skin
Contact with skin may cause irritation.

Health Effects - Ingestion
Ingestion of this material causes adverse gastrointestinal, cardiovascular, liver, central nervous system
and reproductive effects. Symptoms include drowsiness, headache, mental depression, dizziness,
confusion, lack of muscular control, impaired judgement and sedation. In cases of severe overdoses,
this material can cause respiratory and cardiovascular suppression, coma and death due to respiratory
and circulatory failure. Ingestion of 2 to 3 grams of pentobarbital sodium can be fatal.

Health Effects - Inhalation
Inhalation may cause irritation of respiratory tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Pentobarbital</td>
<td>57-33-0</td>
<td>31% (390mg/ml)</td>
</tr>
<tr>
<td>Phenytoin Sodium</td>
<td>630-93-3</td>
<td>4.72% (50mg/ml)</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet
EUTHASOL® Euthanasia Solution
Product Code: 710101

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Alcohol</td>
<td>64-17-5</td>
<td>1 - 10%</td>
</tr>
<tr>
<td>Benzyl Alcohol</td>
<td>100-51-6</td>
<td>1 – 10%</td>
</tr>
<tr>
<td>Rhodamine B</td>
<td>81-88-9</td>
<td>0.1- &lt;1.0%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention.

Skin
Wash skin thoroughly with soap and water. Obtain medical attention if redness or soreness persists.

Ingestion
Obtain medical attention immediately. Do not induce vomiting, unless directed to do so by a physician. Never give anything by mouth to an unconscious person.

Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Advice to Physicians
The rate of onset of effects from this material is relatively short compared to other barbiturates. Treatment is mainly supportive.

Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
Use extinguishing media appropriate for surrounding materials.

Unusual Fire and Explosion Hazards
None known.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate protective clothing. Wipe up and transfer into suitable containers for recovery or disposal. Prevent the material from entering drains or watercourses. Notify authorities if spill has entered watercourse or sewer or has contaminated soil or vegetation. Dispose in accordance with federal, state and local regulations for DEA Schedule II controlled substances.

7. HANDLING AND STORAGE

Store between 59°F and 86°F (15°C and 30°C) in original containers. Keep out of sunlight. Keep container tightly closed in a cool dry place. Avoid contact with skin, eyes and clothing. Wash hands after dispensing and before eating, drinking or smoking. Keep away from children.

Special precautions to be taken when administering product: Wear gloves, gowns and protective eyewear. Do not recap used needles by hand. Place used disposable syringes and needles in puncture resistant containers for disposal.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Exposure limits are listed below, if they exist.

Pentobarbital Sodium
ACGIH: TLV 10 mg/m³ TWA 8h
OSHA: PEL 5 mg/m³, respirable fraction
OSHA: PEL 15 mg/m³, total dust

Ethyl Alcohol
ACGIH: 1000 ppm 15-min STEL
OSHA: PEL 1000 ppm (1900 mg/m³) 8h TWA

Phenytoin Sodium
None established.

Benzyl Alcohol
None

Engineering Control Measures
No specific measures necessary. Good general room ventilation is expected to be adequate to control airborne levels.

Respiratory Protection
Not required when used according to label directions.

Hand Protection
Rubber gloves

Eye Protection
Glasses or goggles

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Clear pink</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>12 - 13</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.105</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Explosion Limits (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Heat - contact with incompatible materials
10. STABILITY AND REACTIVITY

Materials to Avoid
Acids - oxidizing agents
Hazardous Polymerization
Will not occur.
Hazardous Decomposition Products
Oxides of carbon – organic compounds – toxic fumes of nitrogen oxides and sodium oxide - benzaldehyde

11. TOXICOLOGICAL INFORMATION

See product insert and/or packaging for additional information.

Acute Toxicity
Pentobarbital sodium: Oral LD50 (rat) 118 mg/kg
Ethyl Alcohol: Oral LD50 (rat) 7060 mg/kg
Phenytoin Sodium: Oral LD50 (rat) 1530 mg/kg
Benzy1 Alcohol: Oral LD50 (rat) 1230 mg/kg
Dermal LD50 (rabbit) 2000 mg/kg
Inhalation LC50 (rat) 74.187 mg/l, 4h

Specific Target Organ Systemic Toxicity (single and repeat)
Pentobarbital sodium: Causes central nervous system effects similar to alcohol inebriation and adverse liver effects. Ingestion can cause respiratory and cardiovascular depression, coma and death. The potentially fatal dose is 2-3 grams.
Ethyl Alcohol: Chronic exposure can result in adverse liver, heart and central nervous system effects.
Benzy1 alcohol: Causes adverse central nervous system effects.

Serious Eye damage/Eye Irritation
Ethyl Alcohol: Causes severe eye irritation.
Benzy1 Alcohol: Causes moderate to severe eye irritation.

Skin Corrosion/Irritation
Ethyl alcohol: Mildly irritating.
Benzy1 Alcohol: Causes mild to moderate skin irritation.

Respiratory or Skin Sensitization
No relevant studies identified.

Carcinogenicity
Phenytoin Sodium: Reasonably anticipated to be human carcinogen (NTP).

Germ Cell Mutagenicity
Pentobarbitone (free acid) was positive in multiple assays.
Benzy1 Alcohol: Ames testing showed no mutagenic activity and mixed results both positive and negative were observed from other in-vitro genotoxicity assays. Benzy1 alcohol showed no genotoxicity during in-vivo testing. The weight of the evidence indicates this material is not mutagenic or clastogenic.

Toxicity to Reproduction
Pentobarbital sodium: Based on animal studies on pentobarbitone (free acid) and studies for other barbiturates, pentobarbital sodium may affect the developing fetus. The placental transfer of this material in humans has been documented. Neonates from mothers exposed therapeutically to barbiturates have shown blood coagulation disorders and drug withdrawal symptoms. Doses of 600 – 750 mg administered intravenously to mothers before delivery caused moderate to severe neonatal depression in 40% of the infants with a delay in the establishment of normal respiration. Doses up to 300 mg showed no appreciable effects.
Ethyl Alcohol: Ingestion of ethyl alcohol during pregnancy has caused adverse reproductive effects (fetal alcohol syndrome) but only at doses that are maternally toxic.
12. ECOLOGICAL INFORMATION

This product is toxic to wildlife. Birds and mammals feeding on treated animals may be killed.

**Mobility**
No relevant studies identified.

**Persistence/Degradability**
No relevant studies identified.

**Bio-accumulation**
No relevant studies identified.

**Ecotoxicity**
- Pentobarbital sodium: LC50 Fathead minnow 49mg/l (4 day)
- Benzyl alcohol: Bluegill sunfish LC50:10 mg/l 96hr
- Daphnia Magna EC50: 15.2 mg/l 48 hr
- Chlorella pyrenoidosa (Algae) EC50:95 mg/l 3hr

13. DISPOSAL CONSIDERATIONS

Euthanized animals: must be properly disposed of by deep burial, incineration, or other method in compliance with state and local laws, to prevent consumption of carcass material by scavenging wildlife.

Waste Disposal: Dispose of in a manner approved for US DEA Schedule II controlled substances.

Empty Container Disposal: Empty containers must be triple rinsed prior to disposal and may be disposed of according to local regulations.

14. TRANSPORT INFORMATION

Contact supplier for transport information.

15. REGULATORY INFORMATION

**US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS**

**TSCA Listing**
This product contains ingredients that are exempt from listing on the EPA Toxic Substance Control Act Chemical Inventory.

**DSL (Canadian) Listing**
This product contains ingredients that have been verified for listing on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

**WHMIS Classification**
D1B.D2A
This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

**MA Right To Know Law**
This product contains the following chemicals on the Massachusetts Right to Know Law: Ethyl alcohol – Benzyl alcohol

**PA Right To Know Law**
This product contains the following chemicals on the Pennsylvania Hazardous Substance List: Ethyl alcohol - Rhodamine B

**NJ Right To Know Law**
This product contains the following chemicals on the New Jersey Workplace Hazardous Substance List: Pentobarbital Sodium - Ethyl alcohol - Benzyl alcohol
15. REGULATORY INFORMATION

California Proposition 65
This product contains the following materials which the State of California has found to cause cancer, birth defects or other reproductive harm: Pentobarbital Sodium – Phenytoin Sodium – Rhodamine B

SARA Title III Sect. 311/312 Categorization
Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

SARA Title III Sect. 313
This product contains the following chemicals that are listed in Section 313 at or above de minimis concentrations: Pentobarbital Sodium

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Flammability - 1
NFPA Code for Health - 2
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – 0

HMIS Ratings
HMIS Code for Flammability - 1
HMIS Code for Health - 3*
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8
(* - Chronic health hazard)

Abbreviations
ACGIH: American Conference of Governmental Industrial Hygienists
BOD: Biological Oxygen Demand
CAS#: Chemical Abstracts Service Number
FIFRA: Federal Insecticide, Fungicide and Rodenticide Act
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

For further Information call: (800) 338-3650
Prepared By: EnviroNet LLC

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