

SAFETY DATA SHEETS

This SDS packet was issued with item:

078069782

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

078697145

Identity: Tradename: FATAL-PLUS® C-II

NDC Number: 0298-9372-68/0298-9373-68

New MSDS Dated: 09/26/06 - Supersedes all previous MSDS.

Section I**Supplier:****Name:** Vortech Pharmaceuticals, Ltd.**Address:** 6851 Chase Rd**City:** Dearborn**State/ZIP:** MI 48126**Emergency Telephone:****Contact:** POISON CONTROL CENTER OR 911

Vortech Telephone: 800-521-4686/313-584-4088

Section II – Ingredients and Hazards

Ingredients/Hazards	OSHA PEL	ACGIH TLV	STEL	CAS#	%(opt.)
Pentobarbital Sodium	Not Applicable	Not Applicable	Not Applicable	57-33-0	390 mg/ml
Propylene Glycol	Not Applicable	Not Applicable	Not Applicable	57-55-6	0.01 ml/ml
Ethyl Alcohol	Not Applicable	Not Applicable	Not Applicable	64-17-5	0.29 ml/ml
Benzyl Alcohol	Not Applicable	Not Applicable	Not Applicable	100-51-6	0.02 ml/ml

NOTE: Pentobarbital Sodium is a physiologically active substance that is toxic when ingested.

Section III – Physical /Chemical Characteristics

Boiling Point:	Not Applicable
Specific Gravity (H ₂ O=1):	1.105
Vapor Pressure (AIR=1):	Not Applicable
Evaporation Rate (Butyl Acetate =1):	Not Applicable
Solubility in Water:	Complete
Appearance and Odor:	Clear Blue Liquid
pH:	9.6-11.0

Section IV – Fire and Explosion Hazard Data

Flash Point (Method Used):	Not Applicable
Flammable Limits:	LEL: Not Applicable UEL: Not Applicable
Extinguishing Media:	Water Spray, dry chemical, carbon dioxide, of foam suitable for the surrounding fire and materials.
Special Firefighting Procedures:	Wear self-containing breathing apparatus with full face piece and protective clothing.
Unusual fire and Explosion Hazards:	Not Applicable

Section V – Reactivity Data

Stability:	Stable
Incompatibility (Materials to Avoid):	None Known
Hazardous Decomposition or Byproducts:	Exposure to oxygen/air may cause decomposition. May produce CO and CO ₂
Hazardous Polymerization:	High temperatures and open flames.
Conditions to Avoid:	Exposure to oxygen/air may cause decomposition.

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Section VI – Health Hazard Data

Routes of Entry:	Inhalation? Yes	Skin? No	Ingestion? Yes
Health Hazards (Acute and Chronic):	None presently known		
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO

Signs and symptoms of Exposure: May be irritating to the skin, eyes and mucus membranes.
Can cause sleepiness; mental confusion; unsteadiness; coma with slow, shallow respiration; flaccid muscles; hypertension; cyanosis; hypothermia; and absent reflexes and death.

Medical Conditions Generally Aggravated by exposure:

Skin contact may aggravate existing skin disease;
Hypersensitivity to the material;
Dermatitis for susceptible individuals;
Caution should be exercised to avoid contact of this drug with open wounds or self-inflicted injection.

Emergency and First Aid Procedures

INGESTED: If swallowed, give abundant amounts of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center.

SKIN CONTACT: Remove contaminated clothing. Wash affected areas promptly and thoroughly with soap and water. Rinse thoroughly. If irritation occurs, get medical attention.

EYE CONTACT: Immediately rinse eyes with water for a minimum of 15 minutes and call a physician.

INHALATION: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician or Poison Control Center.

Note to Physician: This solution is toxic and has pH between 9.6-11.0.

Section VII – Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released and Spilled:

Contain and collect spillage with non-combustible absorbent materials. Avoid contact. Wear appropriate respiratory protection and protective clothing in spill area. Place spillage in appropriate container for waste disposal. Wash Spill site.

Wash Disposal Method: Material should be disposed of in the presence of a DEA representative in accordance with all applicable federal, state, and local laws.

Precaution to be Taken in Handling or Storage: Store between 15^o and 30^oC (59^o and 86^oF)

Other Precautions: Keep out of the reach of children.
Wash hands after using product.

Section VIII – Control Measures

Respiration Protection: No respiratory protection required when used according to label directions. Use only in a well ventilated area.

Ventilation: Local Exhaust: No special ventilation required when used according to label directions.

Special: Not Applicable.

Mechanical: Not Applicable.

Protective Gloves: Rubber gloves to prevent exposure.

Eye Protection: Glasses or goggles, if splashing may occur.

Other Protective Clothing or Equipment: None required.

Work/Hygienic Practices: Wash hands and forearms after using.

Read and follow directions on product label.

When using, do not eat, drink, or smoke.

Section VIII – Control Measures

Disclaimer or Expressed and Implied Warranties: This information is provided in good faith but without express or implied or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instructions.

SECTION 1. IDENTIFICATION OF SUBSTANCE AND CONTACT INFORMATION

PRODUCT NAME: FATAL-PLUS® SOLUTION

PRODUCT DESCRIPTION: Fatal-Plus is a euthanasia solution suitable for all animals, regardless of species. It is administered by intravenous injection.

MANUFACTURER: Vortech Pharmaceuticals, Ltd.

ADDRESS: 6851 Chase Road
Dearborn MI 48126

PHONE NUMBER: (800) 521-4686
(313) 584-4088

OTHER NUMBER: Poison Control Center : 1-800-222-1222

SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a controlled substance. The main health hazard associated with overexposure during normal occupational use and handling is irritation of contaminated tissues. This product may be toxic if swallowed or inhaled. This product is not flammable. When involved in a fire, this material may decompose and produce irritating vapors and toxic compounds (including e.g. carbon oxides, nitrogen oxides, and sodium oxides). This product is not reactive. Large quantities released to the aquatic and terrestrial environment may have an adverse effect.

Routes of Entry

By eye contact, skin contact, ingestion or inhalation

Carcinogenic Status

Ethyl Alcohol: IARC (International Agency for Research on Cancer) has classified Alcoholic beverages as Group 1 (indicating in their evaluation that the agent is carcinogenic to humans). However, occupational handling or manufacturer's specified use of this product is not expected to result in relevant exposures.

Target Organs

This product effects the, eyes, skin, respiratory tract, gastrointestinal tract, liver and cardiovascular, central nervous and reproductive systems.

Health Effects – Eyes

This product may cause eye irritation, if contact occurs.

Health Effects – Skin

This product may cause skin irritation after prolonged and repeated contact occurs.

MSDS Revision Date: May 28, 2015

Supersedes MSDS Dated: 09/26/96

Health Effects – Ingestion

Ingestion of this product may cause 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 product may cause respiratory and cardiovascular suppression, coma and death due to respiratory and circulatory failure.

Health Effects – Inhalation

This product may cause irritation to the respiratory tract if inhaled.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Use: Veterinary product

Chemical Formula: Mixture

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Pentobarbital Sodium	57-33-0	390 mg/ml
Propylene Glycol	57-55-6	0.01 ml/ml
Ethyl Alcohol	64-17-5	0.29 ml/ml
Benzyl Alcohol	100-51-6	0.02 ml/ml

This MSDS is written to provide health and safety information to individuals who will be handling the final product formulation during research, manufacturing, and distribution. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate MSDS for each ingredient.

SECTION 4. FIRST AID MEASURES**Eyes**

If this product comes into contact with the eyes, immediately wash the affected eye with water for at least fifteen minutes or until the irritation ceases. If irritation continues, seek medical attention.

Skin

If this product comes into contact with the skin, wash the affected area thoroughly with soap and water. If redness or soreness continues, seek medical attention.

Ingestion

If this product is ingested, **DO NOT** induce vomiting, unless directed to do so by a physician and **DO NOT** attempt to give anything by mouth to a seizing, drowsy or unconscious person. Seek medical attention **IMMEDIATELY**.

Inhalation

If this product is inhaled, move to an area of fresh air. If irritation occurs or persists, consult a physician. If person has any trouble breathing, get medical attention **IMMEDIATELY** or if person has stopped breathing administer CPR.

MSDS Revision Date: May 28, 2015

Supersedes MSDS Dated: 09/26/96

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media

Use extinguishing media appropriate for surrounding materials, carbon dioxide (CO₂), powder or water.

Unusual Fire and Explosion Hazards

None known

Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus (SCBA)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Wear appropriate protective clothing. Wipe up and transfer into suitable containers for recovery or disposal. This product **MUST NOT** enter drains or waterways. Notify authorities if spill has entered water ways or sewer system or has contaminated soil or vegetation. The product must be disposed of in accordance with federal, state and local regulations for DEA Schedule II controlled substances.

SECTION 7. HANDLING AND STORAGE

This product must be stored in original containers and in a cool dry place. The product must be stored in accordance with federal, state and local regulations for DEA Schedule II controlled substances. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after dispensing and before eating, or drinking.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Chemical Name	CAS#	Exposure Limits in Air									
		ACGIH-TLVS		OSHA-PELS		NIOSH-RELS		NIOSH	AIHA WEELS		OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	TWA mg/m ³	STEL mg/m ³	mg/m ³
Pentobarbital Sodium	57-33-0	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Propylene Glycol	57-55-6	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Ethyl Alcohol	64-17-5	1880	NE	1900	NE	1900	NE	8237 (based on LEL)	NE	NE	NE
Benzyl Alcohol	100-51-6	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

NE – Not Established

Respiratory Protection: A respirator is not required for routine use of this product.

MSDS Revision Date: May 28, 2015

Supercedes MSDS Dated: 09/26/96

Eye Protection: Eye protection is not needed during normal use. In case of situations in which excessive splashes or sprays may be generated, wear splash goggles.

Hand Protection: In case of prolonged skin contact wear rubber gloves, either natural rubber, neoprene or nitrile gloves.

Body Protection: Use of lightweight cotton gown or other medical attire is recommended.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Clear Blue
Odor	Unknown
pH	9.6-11.0
Boiling Point	Not Applicable
Specific Gravity (H ₂ O=1)	1.105
Vapor Pressure	Not Applicable
Solubility in Water	Soluble
Vapor Density	Not Applicable
Flash Point (PMCC)(°C/F)	Not Flammable
Melting Point (°C/F)	Not Applicable
Explosion Limits(%)	Not Applicable

SECTION 10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Incompatible Materials / Conditions to Avoid	Open flames and high temperatures.
Materials to Avoid	Oxidizing agents
Hazardous Polymerization	Will not occur
Hazardous Decomposition Products	Carbon oxides (CO _x)

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicological properties of this product have not been fully characterized in humans or animals. The information presented below pertains to the following individual ingredients in this formulation, unless indicated otherwise.

Acute Toxicity

Pentobarbital Sodium: Oral LD50 (rat) 118 mg/kg; (dog) 65 mg/kg
Propylene Glycol: Oral LD50 (rat) 21 to 33.7 g/kg; (dog) 10 to 20 g/kg
Dermal LD50 (rabbit) 20.8 g/kg

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Ethyl Alcohol: Oral LD50 (rat) 7060 mg/kg

Benzyl 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.

Propylene Glycol: Caused no adverse reactions in monkeys or rats after exposure to saturated atmospheres for prolonged periods of time.

Ethyl Alcohol: Chronic exposure can result in adverse liver, heart and central nervous system effects.

Benzyl Alcohol: Can cause adverse central nervous system effects.

Serious Eye Damage / Eye Irritation

Propylene Glycol: Causes slight eye irritation.

Ethyl Alcohol: Causes severe eye irritation.

Benzyl Alcohol: Causes moderate to severe eye irritation.

Skin Corrosion/Irritation

Propylene Glycol: Causes mild skin irritation.

Ethyl Alcohol: Causes mild skin irritation.

Benzyl Alcohol: Causes mild to moderate skin irritation.

Respiratory or Skin Sensitization

No relevant studies identified.

Carcinogenicity

This product has not been evaluated for carcinogenicity. Ethyl Alcohol: IARC (International Agency for Research on Cancer) has classified Alcoholic beverages as Group 1 (indicating in their evaluation that the agent is carcinogenic to humans). However, occupational handling or manufacturer's specified use of this product is not expected to result in relevant exposures.

Mutagenicity / Genotoxicity

Pentobarbital (base) was positive in the mouse micronucleus assay, mouse cell DNA inhibition test, hamster cytogenetic assay, and in the hamster dominant test.

Propylene Glycol was negative in a bacterial mutagenicity study (Ames).

Benzyl Alcohol in the Ames testing did not show mutagenic activity and mixed results both positive and negative were observed from other in-vitro genotoxicity assays. Benzyl Alcohol showed no genotoxicity during in-vivo testing. The weight of the evidence indicates that it is not mutagenic or clastogenic.

Reproductive / Developmental Toxicity

Pentobarbital Sodium: Pentobarbital (base) studies indicate that pentobarbital sodium may affect the developing fetus. Placental transfer in humans has been documented. Neonates from mothers exposed to therapeutic doses of 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 normal respiration. Doses up to 300 mg showed no appreciable effects.

Propylene Glycol: Caused decreased food consumption, retarded growth, smaller litters, changes in breeding patterns, and inhibited weaning in rats that were fed 30% propylene glycol through six generations; however, this may have been due to nutritional insufficiency. It was not teratogenic in rabbits, monkeys or chickens.

Ethyl Alcohol: Ingestion of ethyl alcohol during pregnancy has caused adverse reproductive effects (fetal alcohol syndrome) but only at doses that are maternally toxic.

SECTION 12. ECOLOGICAL INFORMATION

There is no data for this product or its formulation. The information provided is for the individual ingredients within the product. This product is toxic to wildlife. Birds and mammals feeding on animals treated with this product may be killed.

Mobility

No relevant studies found.

Persistence/Degradability

No relevant studies found.

Bio-accumulation

No relevant studies found.

Ecotoxicity

Pentobarbital Sodium: 96-hr LC50 (fathead minnow) 49.5mg/L

Propylene Glycol: 96-hr LC50 (sheepshead minnow) 23,800 mg/L

Propylene Glycol: 48-hr EC50 (daphnid) >43,500 mg/L

Propylene Glycol: 72-hr EC50 (green algae) >19,000 mg/L

Benzyl alcohol: 96-hr LC50 (Bluegill sunfish) 10mg/L

Benzyl alcohol: 48-hr EC50 (Daphnia Magna) 15.2 mg/L

Benzyl alcohol: 3-hr EC50 (Chlorella pyrenoidosa - Algae) 95 mg/L

SECTION 13. DISPOSAL CONSIDERATIONS

MATERIAL WASTE: Disposal must be in accordance with applicable federal, state and/ or local regulations concerning US DEA Schedule II controlled substances. Incineration is the preferred method of disposal, when appropriate.

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

EMPTY CONTAINER DISPOSAL: Empty containers must be triple rinsed prior to disposal and in accordance with applicable federal, state, and/or local regulations.

SECTION 14. TRANSPORTATION INFORMATION

This material is not subject to the transportation regulations of DOT, IATA, IMO, and the ADR.

SECTION 15. REGULATORY INFORMATION

TSCA LISTING

INGREDIENT	TSCA
Propylene Glycol	X
Ethyl Alcohol	X
Benzyl Alcohol	X

U.S. STATE REGULATIONS

INGREDIENT	CA PROP 65	CARTK	NJRTK	CTRTK	MARTK	PARTK	MNRTK	MIRTK	RIRTK
Pentobarbital Sodium	D		3726						
Propylene Glycol			3595			X	X		X
Ethyl Alcohol	C D	X	0844		X	X	X		X
Benzyl Alcohol					X	X	X		

SECTION 16. OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).