



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: PZI VET® (Protamine Zinc Insulin)

Product No.: Not available

GHS Product Identifier: Not applicable

Synonyms: Beef/Pork Insulin Complexed with Protamine Sulfate

Molecular Formula: Mixture, not applicable

Molecular Weight: Not applicable

CAS Number: Mixture, not applicable

Chemical Family: Not applicable

Manufacturer:

AAI Pharm, Inc.

2320 Scientific Park Drive

Wilmington, NC 28405

Emergency Telephone:

Transportation Emergency: (800) 424-9300

Medical Emergency (24HR): (866) 638-2226

Intended Use: Recommended for the treatment of diabetes in cats. **Non-emergency Telephone:** (800) 821-7467

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Liquid Suspension

Color: Cloudy white

Odor: Faint odor of phenol



WARNING!

Feline use only.

Not for human use.

Precautionary Statements:

Accidental human injection can cause serious local reactions or anaphylactic reaction and systemic effects.

Keep only in original container.

Keep at a temperature between 2 - 8° C.

Do not freeze.

Fire-fighting: Use foam, carbon dioxide, dry powder and water fog or material appropriate for surrounding fire.

Avoid contact with eyes, skin and clothing.

Wash thoroughly with soap and water after handling.

Wear suitable gloves and eye/face protection.

Spills: Cover with absorbent or contain. Collect and incinerate.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

If swallowed, seek medical advice immediately and show this container or label.

This material and its container must be disposed of in a safe way.

Keep out of reach of children.

Keep away from food, drink, and animal feedstuffs.

Acute effect:

PZI VET® (Protamine Zinc Insulin) is indicated for the treatment of diabetes in cats and dogs.

Precautions/Contraindications:

Hypersensitivity to insulin or protamine.

Overdosage: Overdosage of insulin leads to hypoglycemia. Symptoms can include tremors, palpitations, sweating, blurred vision, confusion and anxiety.

ADVERSE REACTIONS TO PRODUCT: May cause skin or membrane irritation in sensitive individuals or animals. May lead to mild hypoglycemia.

Potential Health Effects

Inhalation: Not expected to be an inhalation hazard with prescribed use.

Eye Contact: Not expected to be a hazard to the eye with prescribed use. May cause slight eye irritation if exposed. Exposure may cause eye tearing, redness, and discomfort.

Skin Contact: Not expected to be a hazard to the skin with prescribed use. May cause slight skin irritation. Prolonged or repeated contact may cause itching, redness, and rash in some individuals or animals.

Ingestion: Not expected to be an ingestion hazard. Exposure may cause vomiting, nausea, diarrhea or hypoglycemia.

Chronic Health Effects: Prolonged hypoglycemia may cause irreversible damage to the brain. Prolonged or repeated exposure may cause damage to kidney and liver. Ingredients have been shown to be mutagenic or fetotoxic in animals. Little, if any effects from this product exposure are expected. Although insulin does not cross the placenta, abnormal glucose concentrations in pregnant women have caused adverse effects in the fetus.

Target Organ(s): Endocrine system, brain, liver, kidney

Potential Physical Effects: None known.

OSHA Regulatory Status: Hazardous

Environment: No data available

3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	EC No.	CAS- No.	Concentration	Classification	Notes
Zinc oxide	2152225	1314-13-2	proprietary	N; R50/53	----
Glycerin	2002895	56-81-5	proprietary	----	----
Phenol	2036327	108-95-2	proprietary	T, C; R23/24/25 R34 R48/20/21/22 R68	----
Insulin (beef)	2342912	11070-73-8	proprietary	----	----
Insulin (pork)	2357033	12584-58-6	proprietary	----	----
Protamine sulfate	----	9009-65-8	proprietary	----	----

The full texts for all R-Phrases are displayed in Section 16.

4 FIRST AID MEASURES

General: Animals or persons developing anaphylactic (life-threatening) reactions, such as difficulty in breathing or unconsciousness, must receive immediate medical attention.

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eye Contact: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention.

Skin Contact: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

Note to Physician: For feline use only. Not for human use.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with water spray, dry chemical, carbon dioxide, foam

Unsuitable Extinguishing Media: None known

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Unusual Fire & Explosion Hazards: None known.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, zinc oxides, sulfur oxides, nitrogen oxides

Flammability Class: IIIB [OSHA 1910.106(a) (18) (ii) (b)]

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate personal protective equipment. (See Section 8).

Spill Cleanup Methods: STEPS TO BE TAKEN IF SIGNIFICANT QUANTITIES OF LIQUID IS SPILLED: Wear an approved respirator, eye protection, personal protective coverings and gloves. Use HEPA filtered vacuum or wet sweeping to clean up spillage. Place spillage in appropriate container for waste disposal. Wash contaminated clothing before use.

Environmental Precautions: Prevent runoff from entering drains, sewers or streams. Dike for later disposal.

7 HANDLING AND STORAGE

Handling: HANDLING SIGNIFICANT QUANTITIES OF LIQUID: Avoid contact with eyes, skin or clothing. Absorb spilled liquid and collect for disposal. Wash hand thoroughly after handling.

Storage: Keep only in the original container. Reseal containers immediately after use. Store container upright at refrigerated temperatures between 2° and 8°C. Keep from freezing. Protect from light. Store away from foodstuffs.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Glycerin ,mist	ACGIH	8-HR TWA	10 mg/m ³	----
Glycerin mist, respirable fraction	OSHA Z-1	PEL	5 mg/m ³	----
Glycerin mist, total dust	OSHA Z-1	PEL	15 mg/m ³	----
Glycerin mist	Alberta	8-HR TWA	10 mg/m ³	----
Glycerin – mist	British Columbia	8-HR TWA	10 mg/m ³	----
Glycerin mist	Ontario	8-HR TWA	10 mg/m ³	----
Glycerin (mist)	Quebec	8-HR TWA	10 mg/m ³	----
Glycerina, niebla	Mexico	TWA	10 mg/m ³	----

Glycerin	Belgium	8-HR TWA	10 mg/m ³	----
Glycerin	Finland	8-HR Limit	20 mg/m ³	----
Glycerin	France	TWA	10 mg/m ³	----
Glycerin (anhydrous)	Greece	8-HR TWA	10 mg/m ³	----
Glycerol, mist	Ireland	8-hour TWA	10 mg/m ³	----
Glycerin mist	Italy	8-hour TWA	10 mg/m ³	----
Glycerol	Netherlands	MAC TWA	10 mg/m ³	----
Glycerin	Portugal	8-hr Exposure limit	10 mg/m ³	----
Glycerin	Spain	8-hr VLA-ED (Daily Exposure Limit)	10 mg/m ³	----
Glycerol, Mist	United Kingdom	TWA	10 mg/m ³	----
Zinc oxide, respirable fraction	ACGIH	TWA	2 mg/m ³	Metal fume fever
Zinc oxide, respirable fraction	OSHA Z-1	PEL	5 mg/m ³	----
Zinc oxide, total dust	OSHA Z-1	PEL	15 mg/m ³	----
Zinc oxide, dust	Alberta	TWA	10 mg/m ³	----
Zinc oxide, fume	Alberta	TWA	5 mg/m ³	----
Zinc oxide, respirable	British Columbia	TWA	2 mg/m ³	----
Zinc oxide, respirable	British Columbia	STEL	10 mg/m ³	----
Zinc oxide, respirable	Ontario	TWA	2 mg/m ³	----
Zinc oxide, respirable	Ontario	STEL	10 mg/m ³	----
Zinc oxide, fumes	Quebec	TWA	5 mg/m ³	----
Zinc oxide, fumes	Quebec	STEL	10 mg/m ³	----
Zinc oxide, total dust	Quebec	TWA	10 mg/m ³	----
Zinc oxide, respirable fraction	Austria	TWA	5 mg/m ³	----
Zinc oxide, total dust	Belgium	TWA	10 mg/m ³	----
Zinc oxide, fume	Belgium	TWA	5 mg/m ³	----
Zinc oxide, fume	Belgium	STEL	10 mg/m ³	----
Zinc oxide	Denmark	TWA	4 mg/m ³	----
Zinc oxide	Finland	TWA	2 mg/m ³	----
Zinc oxide	Finland	STEL	10 mg/m ³	----
Zinc oxide, fumes	France	TWA	5 mg/m ³	----
Zinc oxide, dust	France	TWA	10 mg/m ³	----
Zinc oxide fume (respirable fraction)	Germany	TWA	1 mg/m ³	----
Zinc oxide (fumes)	Greece	TWA	5 mg/m ³	----

Zinc oxide (fumes)	Greece	STEL	10 mg/m ³	----
Zinc oxide (fumes)	Iceland	TWA	4 mg/m ³	----
Zinc oxide (fumes)	Ireland	TWA	5 mg/m ³	----
Zinc oxide (fumes)	Ireland	STEL	10 mg/m ³	----
Zinc oxide, respirable fraction	Italy	TWA	2 mg/m ³	----
Zinc oxide, respirable fraction	Italy	STEL	10 mg/m ³	----
Zinc oxide	Netherlands	TWA	5 mg/m ³	----
Zinc oxide	Norway	TWA	5 mg/m ³	----
Zinc oxide (fumes)	Portugal	TWA	5 mg/m ³	----
Zinc oxide (fumes)	Portugal	STEL	10 mg/m ³	----
Zinc oxide (dust)	Portugal	TWA	10 mg/m ³	----
Zinc oxide (fumes)	Spain	TWA	5 mg/m ³	----
Zinc oxide (fumes)	Spain	STEL	10 mg/m ³	----
Zinc oxide (dust)	Spain	TWA	10 mg/m ³	----
Zinc oxide (dust)	Sweden	TWA	5 mg/m ³	----
Zinc oxide (fume), respirable dust	Switzerland	TWA	3 mg/m ³	----
Zinc oxide (fume), respirable dust	Switzerland	STEL	3 mg/m ³	----

Engineering Controls: Not generally required when handling containers or liquid. (See exposure limits). Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions.

Respiratory Protection: Not generally required when handling liquid or containers. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA standard 63 FR 1152, January 8, 1998. Respirator type: NIOSH approved organic vapor respirator.

PERSONAL PROTECTIVE EQUIPMENT: Not generally required when handling containers. If containers are compromised or exposure to the mixture is likely wear:

Eye Protection: Wear safety glasses with side shields (or goggles).

Hand Protection: Wear suitable gloves.

Skin Protection: Wear lab coat, apron or appropriate clothing to prevent skin contact.

Hygiene Measures: Eye bath, washing facilities

9 PHYSICAL AND CHEMICAL PROPERTIES

Color: Cloudy white

Odor: Faint odor of phenol

Odor Threshold: No data available

Physical State: Liquid Suspension
pH: 7.1 – 7.4
Melting Point: No data available
Freezing Point: No data available
Boiling Point: No data available
Flash Point: > 148.89° C (300° F)
Flammability Limit – Upper (%): No data available
Flammability Limit – Lower (%): No data available
Evaporation rate: No data available
Vapor Pressure: No data available
Vapor Density (Air=1): No data available
Volatility: No data available
Specific Gravity: 1.01
Solubility: No data available
Partition Coefficient (n-Octanol/water): No data available
Autoignition Temperature: No data available
Decomposition Temperature: No data available

10 STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: High temperatures, freezing, direct sunlight

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, zinc oxides, sulfur oxides, nitrogen oxides

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

11 TOXICOLOGICAL INFORMATION

Specified Substances

Acute Toxicity

Chemical Name	Test Results
Zinc Oxide	Administration into the eye (rabbit): 500 mg/24 h, Mild Irritant Administration onto the skin (rabbit): 500 mg/24 h, Mild Irritant Lethal dose (rat): >8437 mg/kg
Glycerin	Administration into the eye (rabbit): 500 mg/24 h, Mild Irritant Administration onto the skin (rabbit): 500 mg/24 h, Mild Irritant Oral LD ₅₀ (rat): 12600 mg/kg Dermal LD ₅₀ (rabbit): >10000 mg/kg
Phenol	Administration into the eye (rabbit): 5 mg, Severe Irritant Administration onto the skin (rabbit): 500 mg/24 h, Severe Irritant Oral LD ₅₀ (rat): 317 mg/kg Dermal LD ₅₀ (rabbit): 630 mg/kg

Inhalation LC ₅₀ (rat): 316 mg/m ³ /4h
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Product**Acute Toxicity**

Test Results
Oral LD ₅₀ (mice): >10000 mg/kg
Dermal LD ₅₀ (rat): >10000 mg/kg
Inhalation LC ₅₀ (rat): >10000 ppm (in air, 4 hours)
Skin or Eye Contact: Irritant

Chronic Toxicity – Prolonged or repeated exposure may cause damage to kidney and liver. Ingredients have been shown to be mutagenic or fetotoxic in animals. Little, if any effects from this product exposure are expected. Although insulin does not cross the placenta, abnormal glucose concentrations in pregnant women have caused adverse effects in the fetus.

Listed Carcinogens: None listed.

12	ECOLOGICAL INFORMATION
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Ecotoxicity: No data available

Persistence and degradability: No data available

Mobility in soil: No data available

Other adverse effects: No data available

Germany WGK: Zinc Oxide: ID No: 2187; Class 2: water-endangering. Phenol: ID No: 170; Class 2: water-endangering. Glycerin: ID No: 116; Class 1: slightly water-endangering.

13	DISPOSAL CONSIDERATIONS
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General Information: Dispose of in accordance with local, state and federal regulations.

Disposal Methods: No specific disposal method required. Do not empty into drains; dispose of this material and its container in a safe way. Do not contaminate water, food, or feed by storage disposal.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14	TRANSPORT INFORMATION
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DOT: Not regulated

TDG: Not regulated

ADR/RID: Not regulated

IATA: Not regulated

IMDG: Not regulated

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: Noncontrolled, exempt

Inventory Status

This material is **not** listed on the US TSCA Inventory. Therefore, it can only be used for TSCA exempt purposes such as R&D or veterinary use.

This material is **not** listed on the DSL Inventory. Therefore, it can only be used for DSL exempt purposes such as R&D or veterinary use.

US Regulations

FEDERAL LAW RESTRICTS THIS DRUG TO USE BY OR ON ORDER OF LICENSED VETERINARIANS.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

Component	Reportable Quantity Code	Reportable Quantity
Phenol	C	1000lbs

CERCLA Hazardous Substance List (40 CFR 302.4):

Component	Reportable Quantity
Phenol	1000lbs
Zinc oxide (as zinc compounds)	----

SARA Title III- Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):

Component	Reportable Quantity
Phenol	1000lbs

SARA Title III- Section 313 Toxic Chemicals (Reporting Form R Instructions for RY2007):

Component	CAS No	Weight %
Zinc oxide (as zinc compounds)	1314-13-2	proprietary
Phenol	108-95-2	proprietary

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): None listed

Massachusetts Right-To-Know List: Phenol, zinc oxide fume, glycerine mist

Minnesota Hazardous Substances List: Phenol, zinc oxide (fume and dust), glycerin mist

New Jersey Right-To-Know List: Phenol, zinc oxide

Pennsylvania Right-To-Know List: Zinc oxide, glycerin

Rhode Island Right-To-Know List: Phenol, zinc oxide, glycerin mist

European Regulations

Austria MAK List (Annex I): Phenol, zinc oxide

Denmark: The MAL-factor Phenol - 160 m3 air/10g substance. (The MAL-factor applies to concentrations > 0% by weight). The MAL-factor Zinc oxide – 0 m3 air/10g substance. (The MAL-factor applies to concentrations > 0% by weight)

Norway (List of Dangerous Substance): Phenol, zinc oxide

Switzerland Toxins List 1: Phenol, zinc oxide, glycerin

16 OTHER INFORMATION

Hazard Ratings

	Health Hazard	Fire Hazard	Reactivity Hazard
HMIS	1	1	0

	Health Hazard	Fire Hazard	Reactivity Hazard	Special Hazard
NFPA	1	1	0	N/A

* – Chronic health effect; 0 – Minimal; 1 – Slight; 2 – Moderate; 3 – Serious; 4 – Severe

From Section 3

C – Corrosive

T – Toxic

N – Dangerous for the environment

R23/24/25 – Toxic by inhalation, in contact with skin and if swallowed.

R34 – Causes burns.

R48/20/21/22 – Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R68 – Possible risks of irreversible effects.

R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Mixture –

N – Dangerous for the environment

R51/53 – Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Handle in accordance with good industrial hygiene and safety practice.

ABBREVIATIONS:

BIV – Boehringer Ingelheim Vetmedica, Inc.

AIHA – American Industrial Hygiene Association

mppcf – million particles/cubic foot

N/A – Not applicable.

N/E – Not established.

References:

1. PZI VET® (Protamine Zinc Insulin) MSDS. IDEXX Laboratories.

2. Ariel WebInsight Regulatory Database. Regulatory Summary for North America, Western Europe, and Global Inventories Database.
3. RTECS No. ZH4810000 – Zinc oxide
4. RTECS No. MA8050000 – Glycerol
5. RTECS No. SJ3325000 – Phenol
6. GHS Manual

Revision Information: New MSDS**Prepared by:** Boehringer Ingelheim Vetmedica, Inc.**Issue Date:** 11/18/2008

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