

SAFETY DATA SHEET

Cat# 1010-100, -20C, Caspase-Family Inhibitor Z-VAD-FMK

SDS DATE: Dec 12, 2011

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Caspase-Family Inhibitor Z-VAD-FMK
PRODUCT CODES: Cat# 1010-100, -20C
MANUFACTURER: BioVision, Inc.
DIVISION:
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE:
OTHER CALLS: 408-493-1800
FAX PHONE: 408-493-1801

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Description	Volume	Safety Information
Caspase-Family Inhibitor, Z-VAD-FMK Z-Val-Ala-Asp(OMe)-FMK (FMK, fluoromethyl ketone)	1010-100: 2 mM in DMSO 1010-20C: 10 mM in DMSO	1010-100: 100 µL 1010-20C: 20 µL	See below

NOTE: The safety data shown below is based on pure ingredients: The amount in this kit comprises much less.

SECTION 3: HAZARDS IDENTIFICATION

Product Name/Chemical Name	CAS Number	EC-No.	MW	Chemical Formula
DMSO	67-68-5	200-664-3	78.13	C ₂ H ₆ OS
Z-VAD-FMK	187389-52-2	--	467.5	C ₂₂ H ₃₀ N ₃ O ₇ F

DMSO:

Emergency Overview

OSHA Hazards: Combustible Liquid, Target Organ Effect

Target Organs: Eyes, Skin

GHS Classification: Flammable liquids (Category 4)

GHS Label elements, including precautionary statements

Pictogram: none

Signal word: Warning

Hazard statement(s): H227 Combustible liquid

Precautionary statement(s): none

HMIS Classification

Health hazard: 0

Chronic Health Hazard: *

Flammability: 2

Physical hazards: 0

NFPA Rating

Health hazard: 0

Fire: 2

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: May be harmful if swallowed.

Aggravated Medical Condition: Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5: FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters: Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions— carbon oxides, sulfur oxides.

SAFETY DATA SHEET

Cat# 1010-100, -20C, Caspase-Family Inhibitor Z-VAD-FMK

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Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid breathing vapors, mist or gas. Avoid dust formation. Ensure adequate ventilation.

Environmental precautions: Do not let product enter drains.

Methods for cleaning up: Sweep up and keep in suitable, closed containers for disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Keep away from sources of ignition—no smoking. Take measures to prevent the build up electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: -20 °C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: For prolonged or repeated contact use protective gloves.

Eye protection: Chemical safety goggles

Hygiene measures: General industrial hygiene practice.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	DMSO
Appearance:	Clear liquid
pH:	Not available
Water Solubility:	Completely miscible
Specific Gravity (g/ml):	1.1
Boiling Point (°C):	189
Melting Point (°C):	18.4
Flash Point (°C):	87
Ignition Temperature (°C):	301

SECTION 10: STABILITY AND REACTIVITY

Property	DMSO
Chemical stability	Stable under recommended storage conditions
Conditions to avoid:	Not available
Materials to avoid:	Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents
Hazardous decomposition products:	Carbon oxides, sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

DMSO

Acute toxicity: LD50 Oral - rat - 14,500 mg/kg; LC50 Inhalation - rat - 4 h - 40250 ppm; LD50 Dermal - rabbit - > 5,000 mg/kg

Irritation and corrosion: Skin - rabbit - Mild skin irritation - 24 h; Eyes - rabbit - Mild eye irritation

Sensitisation: no data available

Chronic exposure

Carcinogenicity: rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity: mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

SAFETY DATA SHEET

Cat# 1010-100, -20C, Caspase-Family Inhibitor Z-VAD-FMK

SDS DATE: Dec 12, 2011

Genotoxicity in vitro - mouse – lymphocyte; Cytogenetic analysis
Genotoxicity in vitro - mouse – lymphocyte; Mutation in mammalian somatic cells.
Genotoxicity in vivo - rat – Intraperitoneal; Cytogenetic analysis
Genotoxicity in vivo - mouse – Intraperitoneal; DNA damage
Developmental Toxicity - mouse – Intraperitoneal; Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific
Developmental Abnormalities: Musculoskeletal system.; Reproductive toxicity - rat – Intraperitoneal; Effects on Fertility: Abortion.

Reproductive toxicity: rat – Intraperitoneal; Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - rat – Subcutaneous; Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants); Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Reproductive toxicity - mouse – Oral; Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific Developmental Abnormalities: Musculoskeletal system.

Additional Information: RTECS: PV6210000

SECTION 12: ECOLOGICAL INFORMATION

DMSO

Elimination information (persistence and degradability): no data available

Ecotoxicity effects: Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h; LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h; Toxicity to daphnia and other aquatic invertebrates.; EC50 - Daphnia pulex (Water flea) - 27,500 mg/l
Toxicity to algae EC50 - Lepomis macrochirus (Bluegill) - > 400,000 mg/l - 96 h

Further information on ecology: no data available

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DMSO

DOT (US): UN-Number: 1993 Class: CBL Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No

IMDG: Not dangerous goods

IATA: Not dangerous goods

SECTION 15: REGULATORY INFORMATION

DMSO

OSHA Hazards: Combustible Liquid, Target Organ Effect

DSL Status: All components of this product are on the Canadian DSL list.

SARA 302 Components: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components ; Dimethyl sulfoxide CAS-No. 67-68-5

New Jersey Right To Know Components: Dimethyl sulfoxide CAS-No. 67-68-5

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

EU regulations

Component	Risk Phrases	Safety Phrases
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

PREPARATION INFORMATION:

DISCLAIMER:

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. BioVision, 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.