

## ZVAD-FMK

**Cat#: orb340582 (MSDS)**

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifier

Product name : Z-VAD-FMK

CAS No. : 187389-52-2

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, manufacture of substances.

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

#### 2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

#### 2.3 Other hazards

None.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms: Z-Val-Ala-Asp(OMe)-FMK

Formula: C<sub>22</sub>H<sub>30</sub>FN<sub>3</sub>O<sub>7</sub>

Molecular Weight: 467.49

CAS No. : 187389-52-2

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### Eye contact

Remove any contact lenses, locate eye-wash station, and flush eyes immediately with large amounts of water. Separate eyelids with fingers to ensure adequate flushing. Promptly call a physician.

##### Skin contact

Rinse skin thoroughly with large amounts of water. Remove contaminated clothing and shoes and call a physician.

**Inhalation**

Immediately relocate self or casualty to fresh air. If breathing is difficult, give cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

**Ingestion**

Wash out mouth with water; Do NOT induce vomiting; call a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2).

**4.3 Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**5. FIRE FIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, dry chemical, foam, and carbon dioxide fire extinguisher.

**5.2 Special hazards arising from the substance or mixture**

During combustion, may emit irritant fumes.

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus and protective clothing.

**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Use full personal protective equipment. Avoid breathing vapors, mist, dust or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Refer to protective measures listed in sections 8.

**6.2 Environmental precautions**

Try to prevent further leakage or spillage. Keep the product away from drains or water courses.

**6.3 Methods and materials for containment and cleaning up**

Absorb solutions with finely-powdered liquid-binding material (diatomite, universal binders); Decontaminate surfaces and equipment by scrubbing with alcohol; Dispose of contaminated material according to Section 13.

**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid inhalation, contact with eyes and skin. Avoid dust and aerosol formation. Use only in areas with appropriate exhaust ventilation.

## 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly sealed in cool, well-ventilated area. Keep away from direct sunlight and sources of ignition.

Recommended storage temperature: Powder -80°C 2 years

-20°C 1 years

In solvent -80°C 6 months

-20°C 1 month

## 7.3 Specific end use(s)

No data available.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

This product contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Engineering controls

Ensure adequate ventilation. Provide accessible safety shower and eye wash station.

#### Personal protective equipment

**Eye protection** Safety goggles with side-shields.

**Hand protection** Protective gloves.

**Skin and body protection** Impervious clothing.

**Respiratory protection** Suitable respirator.

**Environmental exposure controls** Keep the product away from drains, water courses or the soil. Clean spillages in a safe way as soon as possible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

**Appearance** Solid

**Odor** No data available

**Odor threshold** No data available

**pH** No data available

**Melting/freezing point** No data available

**Boiling point/range** No data available

**Flash point** No data available

**Evaporation rate** No data available

**Flammability (solid, gas)** No data available

**Upper/lower flammability or explosive limits** No data available

**Vapor pressure** No data available

**Vapor density** No data available

**Relative density** No data available  
**Water Solubility** No data available  
**Partition coefficient** No data available  
**Auto-ignition temperature** No data available  
**Decomposition temperature** No data available  
**Viscosity** No data available  
**Explosive properties** No data available  
**Oxidizing properties** No data available

## 9.2 Other safety information

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

No data available.

### 10.5 Incompatible materials

Strong acids/alkalis, strong oxidising/reducing agents.

### 10.6 Hazardous decomposition products

Under fire conditions, may decompose and emit toxic fumes.  
Other decomposition products - no data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Classified based on available data. For more details, see section 2

#### Skin corrosion/irritation

Classified based on available data. For more details, see section 2

#### Serious eye damage/irritation

Classified based on available data. For more details, see section 2

#### Respiratory or skin sensitization

Classified based on available data. For more details, see section 2

**Germ cell mutagenicity**

Classified based on available data. For more details, see section 2

**Carcinogenicity**

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

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

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

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

**Reproductive toxicity**

Classified based on available data. For more details, see section 2

**Specific target organ toxicity - single exposure**

Classified based on available data. For more details, see section 2

**Specific target organ toxicity - repeated exposure**

Classified based on available data. For more details, see section 2

**Aspiration hazard**

Classified based on available data. For more details, see section 2

**Additional information**

This information is based on our current knowledge. However the chemical, physical, and toxicological properties have not been completely investigated.

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment unavailable as chemical safety assessment not required or not conducted.

**12.6 Other adverse effects**

No data available.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Dispose substance in accordance with prevailing country, federal, state and local regulations.

#### Contaminated packaging

Conduct recycling or disposal in accordance with prevailing country, federal, state and local regulations.

## 14. TRANSPORT INFORMATION

### DOT (US)

Proper shipping name: Not dangerous goods

UN number: -

Class: -

Packing group: -

### IMDG

Proper shipping name: Not dangerous goods

UN number: -

Class: -

Packing group: -

### IATA

Proper shipping name: Not dangerous goods

UN number: -

Class: -

Packing group: -

## 15. REGULATORY INFORMATION

### SARA 302 Components:

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

### SARA 313 Components:

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:

No SARA Hazards.

### Massachusetts Right To Know Components:

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components:

No components are subject to the Pennsylvania Right to Know Act.

### New Jersey Right To Know Components:

No components are subject to the New Jersey Right to Know Act.

**California Prop. 65 Components:**

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