

# Monomethyl auristatin E (MMAE, vedotin)

**Cat#: orb180827 (MSDS)**

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifier

Product name : Monomethyl auristatin E

CAS No. : 474645-27-7

### 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

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, oral and acute toxicity dermal (Category 1, 2),H300+H330

Germ cell mutagenicity (Category 1A, 1B),H340

Reproductive toxicity (Category 1A, 1B),H360

Specific target organ toxicity, single exposure (Category 1),H370

Specific target organ toxicity, single exposure (Category 1),H372

Hazardous to the aquatic environment, long-term hazard (Category 3),H412

### 2.2 GHS Label elements, including precautionary statements



Pictogram

Signal word Danger

Hazard statement(s)

H300+H330 Fatal if swallowed or if inhaled

H340 May cause genetic defects

H360 May damage fertility or the unborn child

H370 Causes damage to organs

H372 Causes damage to organs through prolonged or repeated exposure

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling

P270 Do not eat, drink or smoke when using this product.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310 Immediately call a POISON CENTER or doctor/physician.

### 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms: MMAE; SGD-1010; Vedotin

Formula: C<sub>39</sub>H<sub>67</sub>N<sub>5</sub>O<sub>7</sub>

Molecular Weight: 717.98

CAS No. : 474645-27-7

## 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: -20°C, sealed storage, away from moisture and light

\* The compound is unstable in solutions, freshly prepared is recommended.

Shipping at room temperature if less than 2 weeks.

### 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** 873.5±65.0°C at 760 mmHg

**Flash point** 482.1±34.3°C

**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)

UN number: 2811

Class: 6.1

Packing group: II

### IMDG

UN number: 2811

Class: 6.1

Packing group: II

### IATA

UN number: 2811

Class: 6.1

Packing group: II

## 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.