

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/30/2021

Revision date 01/30/2021

## 1 Identification

- **Product identifier**
- **Trade name: β2-Microglobulin (dog) Monoclonal Antibody (Clone 5D8)**
- **Synonym** β Chain of MHC Class I Molecules; IMD43; β2M
- **Article number:** 33370
- **Application of the substance / the mixture** For research use only, not for human or veterinary use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Cayman Chemical Co.  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108  
USA
- **Information department:** Product safety department
- **Emergency telephone number:**  
During normal opening times: +1 (734) 971-3335  
US/CANADA: 800-424-9300  
Outside US/CANADA: 703-741-5970

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The product is not classified, according to the Globally Harmonized System (GHS).

- 
- **Label elements**
  - **GHS label elements** None
  - **Hazard pictograms** None
  - **Signal word** None
  - **Hazard statements** None
  - **Classification system:**
  - **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

|            |   |                |
|------------|---|----------------|
| HEALTH     | 0 | Health = 0     |
| FIRE       | 1 | Fire = 1       |
| REACTIVITY | 0 | Reactivity = 0 |

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

|                                  |          |       |
|----------------------------------|----------|-------|
| CAS: 56-81-5<br>RTECS: MA8050000 | Glycerol | 50.0% |
|----------------------------------|----------|-------|

- **Other ingredients**

|                                     |  |       |
|-------------------------------------|--|-------|
| CAS: 7732-18-5<br>RTECS: ZC0110000  | Water  | 48.0% |
| CAS: 7647-14-5<br>RTECS: VZ4725000  | Sodium chloride  | 1.0%  |
| CAS: 7558-79-4<br>RTECS: WC4500000  | Sodium phosphate, Dibasic                              | 0.44% |
| CAS: 7778-77-0<br>RTECS: TC6615500  | Potassium phosphate, Monobasic                         | 0.44% |
|                                     | β2-Microglobulin (dog) Monoclonal Antibody (Clone 5D8) | 0.1%  |
| CAS: 26628-22-8<br>RTECS: VY8050000 | Sodium azide   | 0.02% |

## 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

|            |                                |                         |
|------------|--------------------------------|-------------------------|
| 56-81-5    | Glycerol                       | 45 mg/m <sup>3</sup>    |
| 7778-77-0  | Potassium phosphate, Monobasic | 9.6 mg/m <sup>3</sup>   |
| 26628-22-8 | Sodium azide                   | 0.026 mg/m <sup>3</sup> |

- **PAC-2:**

|            |                                |                        |
|------------|--------------------------------|------------------------|
| 56-81-5    | Glycerol                       | 180 mg/m <sup>3</sup>  |
| 7778-77-0  | Potassium phosphate, Monobasic | 110 mg/m <sup>3</sup>  |
| 26628-22-8 | Sodium azide                   | 0.29 mg/m <sup>3</sup> |

- **PAC-3:**

|            |                                |                         |
|------------|--------------------------------|-------------------------|
| 56-81-5    | Glycerol                       | 1,100 mg/m <sup>3</sup> |
| 7778-77-0  | Potassium phosphate, Monobasic | 630 mg/m <sup>3</sup>   |
| 26628-22-8 | Sodium azide                   | 5.3 mg/m <sup>3</sup>   |

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**56-81-5 Glycerol**

|     |   |
|-----|---|
| PEL | Long-term value: 15* 5** mg/m <sup>3</sup><br>mist; *total dust **respirable fraction |
| TLV | TLV withdrawn-insufficient data human occup. exp.                                     |

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

- **Breathing equipment:** Not required.

- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Goggles recommended during refilling.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:** Liquid

**Color:** According to product specification

- **Odor:** Characteristic

- **Storage Buffer:** PBS, pH 7.2, with 50% glycerol and 0.02% NaN<sub>3</sub>

- **Odor threshold:** Not determined.

- **Formulation:** 100 µg of protein G-purified monoclonal antibody

- **pH-value at 20 °C (68 °F):** 7.2

- **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** 199 °C (390.2 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Decomposition temperature:** Not determined.

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|   |   |
|---|---|
| · <b>Auto igniting:</b>                           | Product is not selfigniting.                                |
| · <b>Danger of explosion:</b>                     | Product does not present an explosion hazard.               |
| · <b>Explosion limits:</b>                        |   |
| <b>Lower:</b>                                     | Not determined.   |
| <b>Upper:</b>                                     | Not determined.   |
| · <b>Vapor pressure at 20 °C (68 °F):</b>         | 23 hPa (17.3 mm Hg)   |
| · <b>Density at 20 °C (68 °F):</b>                | 0.99795–1.00205 g/cm <sup>3</sup> (8.32789–8.36211 lbs/gal) |
| · <b>Bulk density:</b>                            | 998–1,002 kg/m <sup>3</sup>                                 |
| · <b>Relative density</b>                         | Not determined.   |
| · <b>Vapor density</b>                            | Not determined.   |
| · <b>Evaporation rate</b>                         | Not determined.   |
| · <b>Solubility in / Miscibility with Water:</b>  | Fully miscible.   |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.   |
| · <b>Viscosity:</b>                               |   |
| <b>Dynamic:</b>                                   | Not determined.   |
| <b>Kinematic:</b>                                 | Not determined.   |
| · <b>Solvent content:</b>                         |   |
| <b>Organic solvents:</b>                          | 50.0 %  |
| <b>Water:</b>                                     | 48.0 %  |
| <b>VOC content:</b>                               | 0.00 %  |
|   | 0.0 g/l / 0.00 lb/gal                                       |
| <b>Solids content:</b>                            | 1.1 %   |
| · <b>Other information</b>                        | No further relevant information available.                  |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

|   |      |                     |
|---|------|---------------------|
| · <b>LD/LC50 values that are relevant for classification:</b> |      |                     |
| <b>ATE (Acute Toxicity Estimate)</b>                          |      |                     |
| Oral  | LD50 | 300,000 mg/kg (rat) |

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**56-81-5 Glycerol**

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Oral               | LD50                 | 12,600 mg/kg (rat)  |
| Irritation of skin | Irritation           | 500 mg/24h (rabbit) |
| Irritation of eyes | Irritation           | 500 mg/24h (rabbit) |
|                    | Intraperitoneal LD50 | 4,420 mg/kg (rat)   |
|                    | Subcutaneous LD50    | 100 mg/kg (rat)     |

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** Smaller quantities can be disposed of with household waste.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

|  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | not regulated   |

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.
- **Sara**

· **Section 355 (extremely hazardous substances):**

|            |              |
|------------|--------------|
| 26628-22-8 | Sodium azide |
|------------|--------------|

· **Section 313 (Specific toxic chemical listings):**

|            |              |
|------------|--------------|
| 26628-22-8 | Sodium azide |
|------------|--------------|

· **TSCA (Toxic Substances Control Act):**

|            |                                |        |
|------------|--------------------------------|--------|
| 56-81-5    | Glycerol                       | ACTIVE |
| 7732-18-5  | Water                          | ACTIVE |
| 7647-14-5  | Sodium chloride                | ACTIVE |
| 7558-79-4  | Sodium phosphate, Dibasic      | ACTIVE |
| 7778-77-0  | Potassium phosphate, Monobasic | ACTIVE |
| 26628-22-8 | Sodium azide                   | ACTIVE |

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

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· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

26628-22-8 Sodium azide

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:** -

· **Date of preparation / last revision** 01/30/2021 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

· **\* Data compared to the previous version altered.**