

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/10/2021

Revision date 01/10/2021

1 Identification

- **Product identifier**
- **Trade name: α -Tubulin (C-Term) Rabbit Monoclonal Antibody - Biotinylated**
- **Synonym** α -Tubulin Chain
- **Article number:** 32376
- **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)**



- **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 RTECS: MA8050000 | Glycerol | 50.0% |
| CAS: 9048-46-8 RTECS: MT6446000 | Albumin, bovine | 1.0% |

- **Other ingredients**

| | | |
|-------------------------------------|--|---------|
| CAS: 7732-18-5 RTECS: ZC0110000 | Water | 47.919% |
| CAS: 7647-14-5 RTECS: VZ4725000 | Sodium chloride | 0.85% |
| CAS: 7558-79-4 RTECS: WC4500000 | Sodium phosphate, Dibasic | 0.106% |
| CAS: 26628-22-8 RTECS: VY8050000 | Sodium azide | 0.09% |
| CAS: 7778-77-0 RTECS: TC6615500 | Potassium phosphate, Monobasic | 0.03% |
| | α -Tubulin (C-Term) Rabbit Monoclonal Antibody - Biotinylated | 0.005% |

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 ³ |
| 26628-22-8 | Sodium azide | 0.026 mg/m ³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m ³ |

· PAC-2:

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

· PAC-3:

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

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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

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At this time, the remaining constituent has no known exposure limits.

56-81-5 Glycerol

| | |
|-----|---|
| PEL | Long-term value: 15* 5** mg/m ³ 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 with 50% glycerol, 1% BSA, and 0.09% sodium azide
 - **Odor threshold:** Not determined.
 - **Formulation:** 50 μ l of protein A-affinity purified from an animal origin-free culture supernatant
- **pH-value:** Not determined.
- **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.
- **Auto igniting:** Product is not selfigniting.

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| | |
|---|---|
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| · Vapor pressure at 20 °C (68 °F): | 23 hPa (17.3 mm Hg) |
| · Density at 20 °C (68 °F): | 0.99795–1.00205 g/cm ³ (8.32789–8.36211 lbs/gal) |
| · Bulk density: | 998–1,002 kg/m ³ |
| · Relative density | Not determined. |
| · Vapor density | Not determined. |
| · Evaporation rate | Not determined. |
| · Solubility in / Miscibility with Water: | Fully miscible. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 50.0 % |
| Water: | 47.9 % |
| VOC content: | 0.00 % |
| | 0.0 g/l / 0.00 lb/gal |
| Solids content: | 2.1 % |
| · Other information | 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:**

 · **LD/LC50 values that are relevant for classification:**
ATE (Acute Toxicity Estimate)

| | | |
|------|------|--------------|
| Oral | LD50 | 50,000 mg/kg |
|------|------|--------------|

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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) |

9048-46-8 Albumin, bovine

| | | |
|--|----------------------|-----------------|
| | Intraperitoneal TDLO | 0.2 pph (mouse) |
|--|----------------------|-----------------|

26628-22-8 Sodium azide

| | | |
|------------|----------------------|----------------------------|
| Oral | LDLO | 27 mg/kg (rat) |
| | TDLO | 3 ml/kg (wmn) |
| | LD50 | 27 mg/kg (rat) |
| | Subcutaneous LD50 | 45,100 μ g/kg (rat) |
| Dermal | LD50 | 50 mg/kg (rat) |
| | | 20 mg/kg (rabbit) |
| Inhalative | LC50 | 37 mg/m ³ (rat) |
| | Subcutaneous LD50 | 45,100 μ g/kg (rat) |
| | Interperitoneal LDLO | 30 mg/kg (rat) |
| | Intraperitoneal LD50 | 28 mg/kg (mouse) |
| | Subcutaneous LD50 | 45 mg/kg (rat) |
| | Data | 5,500 mg/kg (mouse) |

- **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.

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

14 Transport information

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

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| | | |
|---|--------------------------------|--------|
| · TSCA (Toxic Substances Control Act): | | |
| 56-81-5 | Glycerol | ACTIVE |
| 7732-18-5 | Water | ACTIVE |
| 9048-46-8 | Albumin, bovine | ACTIVE |
| 7647-14-5 | Sodium chloride | ACTIVE |
| 7558-79-4 | Sodium phosphate, Dibasic | ACTIVE |
| 26628-22-8 | Sodium azide | ACTIVE |
| 7778-77-0 | Potassium phosphate, Monobasic | 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. | | |
| · 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** 01/10/2021 / -

- **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

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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.**

US