46117 Landing Parkway, Fremont, CA 94538 U.S.A.
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# SAFETY DATA SHEET

Date: August 30, 2023

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DMSO, Anhydrous
**Catalog Number:** 90082
**Unit Size:** 10 mL
**Manufacturer/Supplier:** Biotium, Inc.
46117 Landing Parkway, Fremont, CA 94538, USA
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Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

## 2. HAZARDS IDENTIFICATION

**GHS classification**
**Signal word** None
**Health hazards** None
**Physical hazards** None
**Hazard statements** None
**Precautionary statements** None
**GHS hazard pictogram** None

**WHMIS classification**
Flammable liquids - Category 4

**NFPA Rating**
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

**Classification according to Regulation (EC) No 1272/2008[CLP]** None
**Labeling according to Regulation (EC) No 1272/2008[CLP]**
**Hazard pictogram** None
**Signal word** None
**Hazard statements** None
**Precautionary statements** None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Name | CAS No. | EC No. | Weight **%** | Classification |
|---|---|---|---|---|
| Dimethylsulfoxide | 67-68-5 | 200-554-3 | 100% | Flammable liquids - Category 4 (WHMIS) |

## 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**
Flush eyes with water as a precaution.

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

## 5. FIREFIGHTING MEASURES

**Suitable extinguishing media**
Carbon dioxide, dry chemical extinguishers, foam extinguishers or water.
**Special protective equipment for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Avoid breathing vapors, mist, or gas. Remove all sources of ignition.
**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
**Methods and materials for containment and cleaning up**
Contain spillage. Soak up spilled substance with inert absorbent material. Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid inhalation of vapor or mist.
Avoid direct contact with substance.
**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place.
Store desiccated at room temperature.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**
Substance: Dimethylsulfoxide
CAS no. 67-68-5

| Country | Austria | Denmark | Finland | Germany (AGS) | Germany (DFG) | Sweden | Switzerland |
|---|---|---|---|---|---|---|---|
| Limit value, 8hours | 50 ppm 160 mg/m3 | 50 ppm 160 mg/m3 | 50 ppm | 50 ppm (1) 160 mg/m3 (1) | 50 ppm (1) 160 mg/m3 (1) | 50 ppm 150 mg/m3 | 50 ppm 160 mg/m3 |
| Limit value, short term | - | 100 ppm 320 mg/m3 | - | 100 ppm (1)(2) 320 mg/m3 (1)(2) | 100 ppm (1)(2) 320 mg/m3 (1)(2) | 150 ppm (1) 500 mg/m3 (1) | 100 ppm 320 mg/m3 |

Germany (AGS): (1) Skin (2) 15 minutes average value
Germany (DFG): (1) Skin (2) 15 minutes average value
Sweden: (1) 15 minutes average value

**Personal protective equipment**
**Hand protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
**Respiratory protection**
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
**Eye protection**
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
**Hygiene measures**

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Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| Chemical Name | DMSO, anhydrous |
|---|---|
| Appearance | Colorless Liquid |
| Odor | No data available |
| Odor threshold | No data available |
| pH | No data available |
| Melting point/freezing point | Melting point/range: 16 - 19 °C (61 - 66 °F) |
| Boiling point | 189 °C (372 °F) |
| Flash point | 87 °C (189 °F) - closed cup |
| Evaporate rate | No data available |
| Flammability | No data available |
| Explosive limits | Upper explosion limit: 42 %(V)<br>Lower explosion limit: 3.5 %(V) |
| Vapor pressure | 0.55 hPa (0.41 mmHg) at 20 °C (68 °F) |
| Vapor density | 2.70 - (Air = 1.0) |
| Relative density | 1.1 g/mL |
| Solubility | Completely miscible (water solubility) |
| Partition coefficient:n-octanol/water | log Pow: -2.03 |
| 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 |

## 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.
**Possibility of hazardous reactions**
No data available
**Conditions to avoid**
Heat, flames and sparks.
**Materials to avoid**
No data available
**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**
**Oral LD50** Rat – male and female – 28,300 mg/kg (OECD Test Guideline 401)
**Inhalation LC50** Rat – male and female – 4 h - > 5.33 mg/l (OECD Test Guideline 403)
**Dermal LD50** Rat – male and female – 40,000 mg/kg Remarks: (ECHA)
**Other information on acute toxicity** No data available
**Skin corrosion/irritation**
Skin – Rabbit
Result: slight irritation – 4 h
(OECD Test Guideline 404)
**Serious eye damage/eye irritation**
Eyes – Rabbit
Result: slight irritation – 24 h

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(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Maximization Test – Guinea pig
Result: negative
(OECD Test Guideline 406)
Local lymph node assay (LLNA) – Mouse
Result: negative
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat

Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative

**Carcinogenicity**

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.

**Reproductive toxicity** No data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

**Aspiration hazard**

No data available

**Potential health effects**

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

**Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 18 Months - NOAEL (No observed adverse effect level) - 3,300 mg/kg - LOAEL (Lowest observed adverse effect level) - 9,900 mg/kg
Repeated dose toxicity - Monkey - male and female - Dermal - 18 Months - NOAEL (No

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observed adverse effect level) - >= 8,910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg
Exposure to large amounts can cause:, redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Eyes - Eye disease - Based on Human Evidence

RTECS: PV6210000 (DMSO)

## 12. ECOLOGICAL INFORMATION

**Toxicity**
Toxicity to fish: static test LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 h
(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h
(OECD Test Guideline 202)
Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria EC50 - activated sludge - 10 - 100 mg/l - 30 min
(ISO 8192)

**Persistence and degradability** No information available
**Bioaccumulative potential** aerobic - Exposure time 28 d
Result: 31 % - Not readily biodegradable.
(OECD Test Guideline 301D)
**Mobility in soil** No information available
**Results of PBT and vPvB assessment** No information available
**Other adverse effects** No information available
**Additional information**
Stability in water - 0.12 - 1.2 h at 30 °C pH 7
Remarks: Hydrolyzes readily.

## 13. DISPOSAL CONSIDERATIONS

Do not dispose product directly into sewage. Consult local, state, or national regulation for proper disposal.

## 14. TRANSPORT INFORMATION

**IATA, IMDG, DOT (US), TDG** Not dangerous goods during transportation
**UN number** None
**UN proper shipping name** None
**Transport hazard class** None
**Packing group** None
**Environmental hazards** None
**Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code** None
**Special precaution for user** None

## 15. REGULATION INFORMATION

**US Federal Regulations**
US Toxic Substances Control Act (TSCA): Not listed
SARA 302: No chemicals were found.
SARA 313: No chemicals were found.
SARA 311/312: No chemicals were found

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**WHMIS Hazard Class** Flammable liquids - Category 4

16. OTHER INFORMATION

Classification according to Regulation (EC) Nr. 1272/2008
Refer to section 2 and section 3

| | |
|---|---|
| Prepared by: | Regulatory Department<br>Biotium Inc. |
| Version no. | 6 |
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| Reason for revision | Updated to new document template. |

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