

## SAFETY DATA SHEET

Date: November 23, 2022

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Aquaphile™ JC-1, 1.5 mM in DMSO  
**Catalog Number:** 70076  
**Unit Size:** 50 uL  
**Manufacturer/Supplier:** Biotium, Inc.  
 46117 Landing Parkway, Fremont, CA 94538, USA  
 Phone: 1-510-265-1027, Fax: 1-510-265-1352  
 Web: <http://www.biotium.com>

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: 2  
 Fire: 2  
 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
DMSO	67-68-5	200-664-3	>99%	WHMIS: Flam liq – Cat 4

### 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.

**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

Burning produces poisonous gases, sulfur oxides. 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 at 4°C.

## 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)
Limit value, 8hours	160mg/m <sup>3</sup>	160mg/m <sup>3</sup>	50 ppm	160mg/m <sup>3</sup> (1)	160mg/m <sup>3</sup> (1)
Limit value, short term	-	320mg/m <sup>3</sup>	-	320mg/m <sup>3</sup> (1)(2)	320mg/m <sup>3</sup> (1)(2)

Country	Sweden	Switzerland
Limit value, 8hours	150mg/m <sup>3</sup>	160mg/m <sup>3</sup>
Limit value, short term	500mg/m <sup>3</sup> (1)	320mg/m <sup>3</sup>

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**

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

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Chemical Name	Aquaphile™ JC-1, 1.5 mM in DMSO
Appearance	Red liquid
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporate rate	No data available
Flammability	No data available
Explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	Soluble in water
Partition coefficient:n-octanol/water	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

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**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

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity (DMSO)****Oral LD50**

Rat - male and female - 28,300 mg/kg  
(OECD Test Guideline 401)

**Inhalation LC50**

LC0 Inhalation - Rat - male and female - 4 h - > 5.33 mg/l - dust/mist  
(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

(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**

May cause respiratory irritation

**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 observed adverse effect level) - &gt;= 8,910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg

RTECS: PV6210000 (DMSO)

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

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## 12. ECOLOGICAL INFORMATION

**Toxicity (DMSO)**Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia static 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**Biodegradability aerobic - Exposure time 28 d  
Result: 31 % - Not readily biodegradable.  
(OECD Test Guideline 301D)**Bioaccumulative potential**

Dimethyl sulfoxide: biodegradation: 90% (28d).

**Mobility in soil** no information available**Results of PBT and vPvB assessment** no information available**Other adverse effects** no information available**Additional information** no information available

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## 13. DISPOSAL CONSIDERATIONS

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

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## 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

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## 15. REGULATION INFORMATION

### US Federal Regulations

Us Toxic Substances Control Act (TSCA): DMSO  
SARA 302: No chemicals were found .  
SARA 313: No chemicals were found.  
SARA 311/312 Hazards: DMSO : fire hazard, chronic health hazard  
Acute Health Hazard: Yes  
Chronic Health Hazard: No  
Fire Hazard: Yes  
Sudden Release of Pressure Hazard: No  
Reactive Hazard: No

**WHMIS classification** Flammable liquids - Category 4

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## 16. OTHER INFORMATION

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

Prepared by: Regulatory Department  
Biotium Inc.

Version no. 1  
Revision date (Initials) 11/23/22 (LR)  
Reason for revision NA

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