# SAFETY DATA SHEET

Date: April 10, 2018

## 1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>JC-1, 100X in DMSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog Number:</td>
<td>30001-TA, 30001A</td>
</tr>
<tr>
<td>Unit Size:</td>
<td>125 uL, 500 uL</td>
</tr>
<tr>
<td>Manufacturer/Supplier:</td>
<td>Biotium, Inc.</td>
</tr>
<tr>
<td></td>
<td>46117 Landing Parkway, Fremont, CA 94538, USA</td>
</tr>
<tr>
<td></td>
<td>Phone: 1-510-265-1027, Fax: 1-510-265-1352</td>
</tr>
<tr>
<td></td>
<td>Web: <a href="http://www.biotium.com">http://www.biotium.com</a></td>
</tr>
</tbody>
</table>

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

## 2. HAZARDS IDENTIFICATION

**GHS Classification**
- **Signal word**: Warning
- **Health hazards**: None
- **Physical Hazards**
  - GHS Physical Hazard 1 - Flammable
  - GHS Physical Hazard Category 4

**Hazard statements**
- H227 - Combustible liquid

**Precautionary statements**
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P370 + P378 - In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction

**WHMIS classification**
- Flammable liquids, category 4

**Classification according to Regulation (EC) No 1272/2008[CLP]** None

**Classification according to Directive 1999/45/EC** None

**HMIS Classification**
- Health hazard: 1
- Flammability: 2
- Physical hazards: 0

**NFPA Rating**
- Health hazard: 1
- Fire: 2
- Reactivity Hazard: 0

**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

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>Weight %</th>
<th>Classification according to regulation (EC)No1278/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMSO</td>
<td>67-68-5</td>
<td>200-664-3</td>
<td>-</td>
<td>99%</td>
<td>None</td>
</tr>
</tbody>
</table>

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
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
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>JC-1, 100X in DMSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporate rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water soluble</td>
</tr>
<tr>
<td>Partition coefficient:n-octanol/water</td>
<td>No information available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

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 DMSO
Oral LD50 rat - 14,500 mg/kg
Inhalation LC50 Inhalation - rat - 4 h - 40250 ppm
Dermal LD50 rabbit - > 5,000 mg/kg
Other information on acute toxicity no data available

Skin corrosion/irritation no data available
Serious eye damage/eye irritation no data available
Respiratory or skin sensitization no data available

Germ cell mutagenicity Salmonella typhimurium assay (Ames test): negative (±/− activation), DMSO is used as a neutral solvent in the Ames mutagen test

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 Not considered to be directly embryotoxic and has been shown to be a successful cryoprotectant for mammalian semen and embryos

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
RTECS: PV6210000 (DMSO)

12. ECOLOGICAL INFORMATION
Toxicity DMSO  The LC50(96hrs) for ten species of fish range from 32500 to 43000ppm
Persistence and degradability  no information available
Biodegradation  no information available
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

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber by a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

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 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 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
Biotium Inc.
Version no. 4
The information provided above is believed to be correct to our best knowledge, but does not purport to be all inclusive, and shall be used only as a guide. This material is sold for research purposes only and is not required to appear on the TSCA inventory. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. Biotium shall not be held liable for any damage resulting from handling or contact with the above product.
SAFETY DATA SHEET
Date: April 10, 2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 10X Assay Buffer
Catalog Number: 30001-TB, 30001B
Unit Size: 2.5 mL, 10 mL
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
WHMIS classification None
GHS hazard pictogram None

Classification according to Regulation (EC) No 1272/2008[CLP] None
Classification according to Directive 1999/45/EC None

HMIS Classification
Health hazard: 0
Flammability: 0
Physical hazards: 0

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

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

No ingredients present at concentrations classified as hazardous to health or the environment.

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**
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**
None

**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.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

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<tr>
<th>Chemical Name</th>
<th>10X Assay Buffer</th>
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<tbody>
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</tr>
<tr>
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</tr>
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<td>Odor threshold</td>
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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

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50 None
Inhalation LC50 None
Dermal LD50 None

Other information on acute toxicity No data available

Skin corrosion/irritation No data available
Serious eye damage/eye irritation No data available
Respiratory or skin sensitization No data available
Germ cell mutagenicity No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.
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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
RTECS: None

12. ECOLOGICAL INFORMATION
Toxicity No information available
Persistence and degradability No information available
Biodegradation No information available
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

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 Hazards: No chemicals were found.

WHMIS Hazard Class None

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. 5
Revision date (Initials) 4/10/18 (LR)
Reason for revision Application of WHMIS labeling requirements

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