SAFETY DATA SHEET

Date: May 4, 2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: MemBrite Fix Dye
Catalog Number: Component A (see product information sheet)
Unit Size: 1 vial
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 -20°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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>MemBrite Fix Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
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<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
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<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
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</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

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 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
RTECS: None

12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
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</thead>
<tbody>
<tr>
<td>Toxicity</td>
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<td>Persistence and degradability</td>
<td>No information available</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>No information available</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>No information available</td>
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<tr>
<td>Results of PBT and vPvB assessment</td>
<td>No information available</td>
</tr>
<tr>
<td>Other adverse effects</td>
<td>No information available</td>
</tr>
<tr>
<td>Additional information</td>
<td>No information available</td>
</tr>
</tbody>
</table>

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

14. TRANSPORT INFORMATION

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

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. 1
Revision date (Initials)
Reason for revision

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: May 4, 2018

### 1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>MemBrite Fix Pre-Staining Solution, 1000X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog Number:</td>
<td>99947-20uL or 99947-100uL</td>
</tr>
<tr>
<td>Unit Size:</td>
<td>20 uL or 100 uL</td>
</tr>
<tr>
<td>Manufacturer/Supplier:</td>
<td>Biotium, Inc. 46117 Landing Parkway, Fremont, CA 94538, USA</td>
</tr>
<tr>
<td>Phone:</td>
<td>1-510-265-1027, Fax: 1-510-265-1352</td>
</tr>
<tr>
<td>Web:</td>
<td><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

<table>
<thead>
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<th>GHS Classification</th>
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<tbody>
<tr>
<td>Signal word</td>
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<td>Health hazards</td>
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<tr>
<td>Physical hazards</td>
<td>None</td>
</tr>
<tr>
<td>Hazard statements</td>
<td>None</td>
</tr>
<tr>
<td>Precautionary statements</td>
<td>None</td>
</tr>
<tr>
<td>WHMIS classification</td>
<td>None</td>
</tr>
<tr>
<td>GHS hazard pictogram</td>
<td>None</td>
</tr>
<tr>
<td>Classification according to Regulation (EC) No 1272/2008[CLP]</td>
<td>None</td>
</tr>
<tr>
<td>Classification according to Directive 1999/45/EC</td>
<td>None</td>
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<tr>
<td>HMIS Classification</td>
<td>None</td>
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<tr>
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<td>Flammability:</td>
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<tr>
<td>Physical hazards:</td>
<td>0</td>
</tr>
<tr>
<td>NFPA Rating</td>
<td>None</td>
</tr>
<tr>
<td>Health hazard:</td>
<td>0</td>
</tr>
<tr>
<td>Fire:</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity Hazard:</td>
<td>0</td>
</tr>
</tbody>
</table>

| Labeling according to Regulation (EC) No 1272/2008[CLP] | None |
| 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 breathing vapors, mist or gas. Remove all sources of ignition.
Avoid direct contact with substance.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Store at -20°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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>MemBrite Fix Pre-Staining Solution, 1000X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
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<td>Odor threshold</td>
<td>No data available</td>
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<td>pH</td>
<td>No data available</td>
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<tr>
<td>Melting point/freezing point</td>
<td>No data 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
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 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.
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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

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12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th><strong>Toxicity</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Persistence and degradability</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Biodegradation</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Mobility in soil</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Results of PBT and vPvB assessment</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Other adverse effects</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td>No information available</td>
</tr>
</tbody>
</table>

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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): 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. 1
Revision date (Initials)
Reason for revision

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SAFETY DATA SHEET

Date Revised: October 26, 2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Anhydrous DMSO
Catalog Number: 99953, 99953-1
Unit Size: 150 uL, 250 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 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>
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<td>DMSO</td>
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<td>200-664-3</td>
<td>-</td>
<td>100%</td>
<td>-</td>
<td>None</td>
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</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

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<th>Country</th>
<th>Austria</th>
<th>Belgium</th>
<th>Denmark</th>
<th>European Union</th>
<th>France</th>
<th>Germany</th>
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<td>160mg/m³</td>
<td>-</td>
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<td>160mg/m³</td>
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<td>Limit value, short term</td>
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<td>320mg/m³</td>
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<table>
<thead>
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<th>Italy</th>
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<td>-</td>
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<table>
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<th>Australia</th>
<th>Canada</th>
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<th>South Korea</th>
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<tbody>
<tr>
<td>Limit value, 8 hours</td>
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<td>Limit value, short term</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Chemical Name</td>
<td>Dimethylsulfoxide (DMSO)</td>
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<tr>
<td>Appearance</td>
<td>Liquid</td>
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<td>Odor</td>
<td>Mild</td>
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<tr>
<td>pH</td>
<td>No information available</td>
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<td>Melting point/freezing point</td>
<td>16 -19°C</td>
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<tr>
<td>Boiling point</td>
<td>189 °C (372 °F)</td>
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<td>Flash point</td>
<td>87 °C (189 °F) - closed cup - ASTM D 93</td>
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<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>0.55 hPa (0.41 mmHg) at 20 °C (68 °F) 4 hPa (3 mmHg) at 50 °C (122 °F)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>2.70 - (Air = 1.0)</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.1 g/mL</td>
</tr>
<tr>
<td>Solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient:n-octanol/water</td>
<td>log Pow: -1.349</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>300 - 302 °C (572 - 576 °F)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 190 °C (&gt; 374 °F)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</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.: 3
Revision date (Initials): October 10, 2017 (LR)
Reason for revision: Application of WHMIS labeling requirements

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