SAFETY DATA SHEET
Date Revised: March 10, 2016

1. PRODUCT AND COMPANY IDENTIFICATION
   
   **Product Name:** GelRed Nucleic Acid Stain, 10,000X in DMSO
   **Catalog Number:** 41002/41002-1
   **Unit Size:** 0.5 mL/10mL
   **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](http://www.biotium.com)

2. HAZARDS IDENTIFICATION
   
   **Classification according to Regulation (EC) No 1272/2008[CLP]**
   Not classified
   **Classification according to Directive 1999/45/EC**
   None
   **Labelling according to Regulation (EC) No 1272/2008[CLP]**
   None
   
   **HMIS Classification**
   Health hazard: 0
   Flammability: 2
   Physical hazards: 0
   **NFPA Rating**
   Health hazard: 0
   Fire: 2
   Reactivity Hazard: 0

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>&gt;99%</td>
<td>NA</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES
   
   **General advice**
   Remove affected clothing and launder before reuse.
   
   **If inhaled**
   If breathed in, move person into fresh air. If not breathing, give artificial respiration and seek medical care.
   
   **In case of skin contact**
   Wash off with soap and plenty of water. If irritation persists, seek medical care.
   
   **In case of eye contact**
   Flush eyes with water for 15 minutes. If irritation persists, seek medical care.
   
   **If swallowed**
   Do NOT induce vomiting. Rinse mouth with water. Seek medical care.
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 room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

<table>
<thead>
<tr>
<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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</thead>
<tbody>
<tr>
<td>Limit value, 8hours</td>
<td>160mg/m3</td>
<td>-</td>
<td>160mg/m3</td>
<td>-</td>
<td>-</td>
<td>160mg/m3</td>
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<tr>
<td>Limit value, short term</td>
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<td>-</td>
<td>320mg/m3</td>
<td>-</td>
<td>-</td>
<td>320mg/m3</td>
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</table>

<table>
<thead>
<tr>
<th>country</th>
<th>Hungary</th>
<th>Italy</th>
<th>Poland</th>
<th>Spain</th>
<th>Sweden</th>
<th>Netherlands</th>
<th>United Kingdom</th>
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</thead>
<tbody>
<tr>
<td>Limit value, 8hours</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>160mg/m3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Limit value, short term</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>500mg/m3</td>
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<table>
<thead>
<tr>
<th>country</th>
<th>United Kingdom</th>
<th>USA-NIOSH</th>
<th>USA-OSHA</th>
<th>Australia</th>
<th>Canada</th>
<th>Japan</th>
<th>South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit value, 8hours</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Limit value, short term</td>
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<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>Chemical Name</th>
<th>GelRed Nucleic Acid Stain, 10,000X in DMSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<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>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporate rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</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, sulfur oxides
Other decomposition products - no data available
11. TOXICOLOGICAL INFORMATION

**Acute toxicity DMSO**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>rat - 14,500 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Inhalation - rat - 4 h - 40250 ppm</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>rabbit - &gt; 5,000 mg/kg</td>
</tr>
</tbody>
</table>

**Other information on acute toxicity**

- 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 carcinogenic 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 carcinogenic or potential carcinogen by OSHA.

**Reproductive toxicity**

- Experiments have shown reproductive toxicity effects on laboratory animals (Dimethyl sulfoxide)

**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**

- 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**

- 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
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>IATA, IMDG, DOT (US)</th>
<th>UN number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class</th>
<th>Packing group</th>
<th>Environmental hazards</th>
<th>Special precaution for user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not dangerous good during shipping</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>none</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: 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

16. OTHER INFORMATION

Classification according to Regulation (EC) Nr. 1272/2008

Prepared by: Regulatory Department
Biotium Inc.

Version no. 3
Reason for revision: update DMSO information

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.