SAFETY DATA SHEET
Date: May 18, 2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ViaVac Red/Green
Catalog Number: 29068
Unit Size: 100uL
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

2. HAZARDS IDENTIFICATION

Classification according to Regulation (EC) No 1272/2008[CLP]
Not classified

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 67/548/EEC</th>
<th>Classification according to regulation (EC)No1278/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethylsulfoxide</td>
<td>67-68-5</td>
<td>200-664-3</td>
<td>-</td>
<td>&gt;99%</td>
<td>N/A</td>
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</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.
**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 -20°C

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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

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<thead>
<tr>
<th>country</th>
<th>Austria</th>
<th>Belgium</th>
<th>Denmark</th>
<th>European Union</th>
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<th>Germany</th>
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<td>160mg/m³</td>
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9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
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<tbody>
<tr>
<td>Chemical Name</td>
<td>ViaVac Red/Green</td>
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<td>Appearance</td>
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</tr>
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<td>Odor</td>
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<tr>
<td>pH</td>
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<td>Boiling point</td>
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<td>Flash point</td>
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<td>Evaporate rate</td>
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<td>Explosive limits</td>
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<td>Vapor pressure</td>
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<td>Decomposition temperature</td>
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<tr>
<td>Oxidising properties</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, sulfur 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 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
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)  Not dangerous good during shipping
UN number           None
UN proper shipping name None
Transport hazard class None
Packing group        None
Environmental hazards 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

16. OTHER INFORMATION

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

Prepared by:  Regulatory Department
              Biotium Inc.
Version no.  1
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.
1. PRODUCT AND COMPANY IDENTIFICATION

   Product Name: Calcofluor White Stain, 5mM in water
   Catalog Number: 31062A
   Unit Size: 500 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

2. HAZARDS IDENTIFICATION

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

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

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

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

   The product contains no substances which at their given concentration, are considered to be hazardous to health.

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>Calcofluor White Stain, 5mM in water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</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**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Oral LD50</td>
<td>None</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>None</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>None</td>
</tr>
</tbody>
</table>

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.

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)**
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)**: not dangerous good during transportation
- **UN number**: none
- **UN proper shipping name**: none
- **Transport hazard class**: none
- **Packing group**: none
- **Environmental hazards**: 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.

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
Reason for revision Application of CLP labeling and corresponding requirements

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