

**SAFETY DATA SHEET**

Date: April 10, 2018

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**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** ViaFluor 647 Live Cell Microtubule Stain, 1000X in DMSO  
**Catalog Number:** 70063-10uL, 70063-50 uL  
**Unit Size:** 10 uL or 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.

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**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

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	EC No.	Index No.	Weight %	Classification according to 67/548/EEC	Classification according to regulation (EC)No1278/2008
DMSO	67-68-5	200-664-3	-	>99%	-	None

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### 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.

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### 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.

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### 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.

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### 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.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

Substance: Dimethylsulfoxide

CAS no. 67-68-5

Country	Austria	Belgium	Denmark	European Union	France	Germany
Limit value, 8hours	160mg/m3	-	160mg/m3	-	-	160mg/m3
Limit value, short term	-	-	320mg/m3	-	-	320mg/m3

Country	Hungary	Italy	Poland	Spain	Sweden	Netherlands	Switzerland
Limit value, 8hours	-	-	-	-	160mg/m3	-	160mg/m3
Limit value, short term	-	-	-	-	500mg/m3	-	320mg/m3

Country	United Kingdom	USA-NIOSH	USA-OSHA	Australia	Canada	Japan	South Korea
Limit value, 8hours		-	-	-	-	-	-
Limit value, short term		-	-	-	-	-	-

## 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

Chemical Name	Viafluor 647 Live Cell Microtubule Stain, 1000X in DMSO
Appearance	Liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Evaporate rate	No information available
Flammability	No information available
Explosive limits	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	Water soluble
Partition coefficient:n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available

Oxidizing properties

No information 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 - 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)

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## 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

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## 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.

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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: 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

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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.	2
Revision date (Initials)	4/10/18 (LR)
Reason for revision	Application of WHMIS labeling requirements

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

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**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Verapamil HCl, 100 mM in DMSO  
**Catalog Number:** 99836-20uL, 99836-100uL  
**Unit Size:** 20 uL or 100 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.

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**2. HAZARDS IDENTIFICATION****GHS Classification****Signal word** Danger**Health hazards**Acute toxicity, Oral (Category 3), H301  
Acute aquatic toxicity (Category 2), H401  
Chronic aquatic toxicity (Category 2), H411**Physical hazards**GHS Physical Hazard 1 - Flammable  
GHS Physical Hazard Category 4**Hazard statements**H227 Combustible liquid  
H301 Toxic if swallowed  
H401 / H411 Toxic to aquatic life with long lasting effects**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  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.  
P391 Collect spillage.  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.**WHMIS classification**

Flammable liquids, category 4

**GHS hazard pictogram**

**Classification according to Regulation (EC) No 1272/2008[CLP]**

Acute Toxicity: Inhalation, Category 3  
Acute Toxicity: Oral, Category 3  
Acute Toxicity: Skin, Category 3  
Skin Corrosion/Irritation, Category 2  
Serious Eye Damage/Eye Irritation, Category 2  
Target Organ Systemic Toxicity (single exposure), Category 3  
Aquatic Toxicity (Chronic), Category 3  
Effects on or via Lactation

**Classification according to Directive 1999/45/EC**

T: Toxic  
Risk Phrases: R23/24/25, R36/37/38, R52/53

**Labelling according to Regulation (EC) No 1272/2008[CLP]****Hazard pictogram**

**Signal word** Danger

**Hazard statements**

H331: Toxic if inhaled.  
H301: Toxic if swallowed.  
H311: Toxic in contact with skin.  
H315: Causes skin irritation.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.  
H412: Harmful to aquatic life with long lasting effects  
H360: May damage fertility or the unborn child  
H362: May cause harm to breast-fed children

**Precautionary statements**

P201: Obtain special instructions before use.  
P202: Do not handle until all safety precautions have been read and understood  
P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P263: Avoid contact during pregnancy/while nursing.  
P264: Wash {hands} thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P281: Use personal protective equipment as required.  
P361+364: Take off immediately all contaminated clothing and wash it before reuse.  
P362+364: Take off contaminated clothing and wash it before reuse.  
P273: Avoid release to the environment.  
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P308+P313: IF exposed or concerned: Get medical advice/attention  
P330: Rinse mouth.  
P302+352: IF ON SKIN: Wash with plenty of soap and water.  
P312: Call a POISON CENTER/doctor if you feel unwell.  
P332+313: If skin irritation occurs, get medical advice/attention.  
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+313: If eye irritation persists, get medical advice/attention.  
P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.



P405: Store locked up.  
P501: Dispose of contents/container to hazardous waste.

**HMIS Classification**

Health hazard: 3  
Flammability: 2  
Physical hazards: 0

**NFPA Rating**

Health hazard: 3  
Fire: 2  
Reactivity Hazard: 0

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	EC No.	Index No.	Weight %	Classification according to 67/548/EEC	Classification according to regulation (EC)No1278/2008
Verapamil HCl	152-11-4	205-800-5	--	25%	T: R23/24/25, R36/37/38, R52/53	Acute Toxicity: Inhalation, Category 3 Acute Toxicity: Oral, Category 3 Acute Toxicity: Skin, Category 3 Skin Corrosion/Irritation, Category 2 Serious Eye Damage/Eye Irritation, Category 2 Target Organ Systemic Toxicity (single exposure), Category 3 Aquatic Toxicity (Chronic), Category 3
DMSO	67-68-5	200-664-3	--	75%	--	--

### 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

Country	Austria	Belgium	Denmark	European Union	France	Germany
Limit value, 8hours	160mg/m3	-	160mg/m3	-	-	160mg/m3
Limit value, short term	-	-	320mg/m3	-	-	320mg/m3

Country	Hungary	Italy	Poland	Spain	Sweden	Netherlands	Switzerland
Limit value, 8hours	-	-	-	-	160mg/m3	-	160mg/m3
Limit value, short term	-	-	-	-	500mg/m3	-	320mg/m3

Country	United Kingdom	USA-NIOSH	USA-OSHA	Australia	Canada	Japan	South Korea
Limit value, 8hours	-	-	-	-	-	-	-
Limit value, short term	-	-	-	-	-	-	-

### 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

Chemical Name	Verapamil HCl, 10 mM in DMSO
Appearance	Liquid
Odor	No information available

Odor threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Evaporate rate	No information available
Flammability	No information available
Explosive limits	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	Water soluble
Partition coefficient:n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## 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

Verapamil (hydrochloride) - Toxicity Data: Oral TDLO (woman): 58 mg/kg; Oral TDLO (woman): 14.4 mg/kg; Oral TDLO (woman): 72 mg/kg/14H (intermittent); Oral TDLO (man): 89 mg/kg; Oral TDLO (man): 26 mg/kg; Oral LDLO (man): 3.429 mg/kg; Oral LDLO (man): 103 mg/kg; Oral LD50 (rat): 150 mg/kg; Oral LD50 (mouse): 163 mg/kg; Subcutaneous LD50 (rat): 107 mg/kg; Subcutaneous LD50 (mouse): 68 mg/kg

**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:

KQ6300000 (Verapamil HCl)

PV6210000 (DMSO)

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## 12. ECOLOGICAL INFORMATION

**Toxicity**

DMSO: LC50 (96 hrs) for ten species of fish range from 32500 to 43000 ppm

Verapamil: LC50 (96 hrs) Oncorhynchus mykiss (rainbow trout) - 2.72 mg/L

EC50 (48 hrs) Daphnia magna (Water flea) - 7.04 mg/L

**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

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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** 2810

**UN proper shipping name** Toxic liquids, n.o.s.

**Transport hazard class** 6.1 Toxic material.

**Packing group** III

**Environmental hazards** none

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code** N/A

**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: 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

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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.      2  
Revision date (Initials)      4/10/18 (LR)  
Reason for revision      Application of WHMIS labeling requirements

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.