

## MATERIAL SAFETY DATA SHEET

Date Revised: 5/20/2009

**1. PRODUCT AND COMPANY INFORMATION****Product Information:**

Component A	Product Name	Unit Size
125673	XenoLight CF680, succinimidyl ester	3 x 0.1 umole
125674	XenoLight CF750, succinimidyl ester	3 x 0.1 umole
125675	XenoLight CF770, succinimidyl ester	3 x 0.1 umole

**Manufacturer/Supplier:** Biotium, Inc.  
3423 Investment Blvd. Suite 8. Hayward, CA 94545, USA  
Phone: 1-510-265-1027, Fax: 1-510-265-1352  
Web: <http://www.biotium.com>  
Emergency Phone: 1-510-265-1027

**2. COMPOSITION AND INFORMATION ON INGREDIENTS**

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

**CAS Number/Name:** Not available

**3. HAZARDS IDENTIFICATION**

**Emergency Overview:** Handle with care—substance has not been fully tested.

**POTENTIAL HEALTH EFFECTS**

**Inhalation:** May cause irritation to respiratory tract  
**Ingestions:** May be harmful if swallowed  
**Skin:** May cause skin irritation  
**Eyes:** May cause eye irritation  
**Chronic Exposures:** Not available  
**Target Organs:** Not available

**HMIS**

Health	0
Flammability	0
Reactivity	0

**4. FIRST AID MEASURES****Oral Exposure**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**

In case of contact, immediately wash skin with soap and copious amounts of water.

**Eye Exposure**

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**5. FIRE FIGHTING MEASURES**

Use carbon dioxide, dry chemical extinguishers, foam extinguishers or water. An approved self-contained breathing apparatus and protective clothing are recommended.

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## 6. ACCIDENTAL RELEASE MEASURES

Use appropriate protective equipment and methods to clean up spilled substance promptly. Absorb spill onto an appropriate material. Collect and dispose of all waste in accordance with applicable laws.

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## 7. HANDLING AND STORAGE

### Storage

Store in properly labeled containers. Avoid long-term light exposure

### Handling

User exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Under no circumstances eat, drink, or smoke while handling this material. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use.

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Occupational exposure controls

#### Exposure limits

**Engineering measures** Ensure adequate ventilation, especially in confined areas

#### Personal protective equipment

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Hand protection** Protective gloves

**Eye protection** Safety glasses with side-shields

**Skin and body protection** Lightweight protective clothing.

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure Controls** Prevent product from entering drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form:</b>	solid
<b>Odor:</b>	Not available
<b>Solubility in Water:</b>	Not available
<b>Specific Gravity:</b>	Not available
<b>pH:</b>	Not available
<b>Boiling Point:</b>	Not available
<b>Melting Point:</b>	Not available
<b>Flash Point:</b>	Not available
<b>Vapor Pressure:</b>	Not available

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## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Thermal Decomposition:</b>	No decomposition if used according to specifications
<b>Dangerous Reactions:</b>	No dangerous reactions identified
<b>Dangerous Products of Decomposition:</b>	No dangerous decomposition products identified

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## 11. TOXICOLOGICAL INFORMATION

### Principle Routes of Exposure/

### Potential Health Effects

<b>Inhalation:</b>	May cause irritation to respiratory tract
<b>Ingestions:</b>	May be harmful if swallowed
<b>Skin:</b>	May cause skin irritation
<b>Eyes:</b>	May cause eye irritation
<b>Chronic Exposures:</b>	Not available
<b>Target Organs:</b>	Not available

**Specific effects**

<b>Carcinogenic effects</b>	No information available
<b>Mutagenic effects</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Sensitization</b>	No information available

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**12. ECOLOGICAL INFORMATION**

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<b>Ecotoxicity effects</b>	No information available
<b>Mobility</b>	No information available
<b>Biodegradation</b>	Inherently biodegradable
<b>Bioaccumulation</b>	Does not bioaccumulate

Do not allow product to enter drinking water supplies, wastewater or soil. Adverse ecological effects cannot be excluded in the event of improper handling or disposal.

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**13. DISPOSAL CONSIDERATIONS**

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Consult local, state or national regulations for proper disposal

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**14. TRANSPORT INFORMATION**

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**DOT**

<b>Hazards Class:</b>	Not available
<b>UN Number:</b>	Not available
<b>Packing Group:</b>	Not classified
<b>Proper Shipping Name (Technical Name):</b>	Not classified as dangerous in the context of transport regulations

**IATA**

<b>Hazards Class:</b>	Not available
<b>UN Number:</b>	Not available
<b>Packing Group:</b>	Not classified
<b>Proper Shipping Name (Technical Name):</b>	Not classified as dangerous in the context of transport regulations
<b>Hazardous for air Transport:</b>	Non-Hazardous for air transport.

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**15. REGULATORY INFORMATION**

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**US Federal Regulations**

**SARA Listed:** Not regulated

**US Toxic Substances Control Act (TSCA):** Not listed

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs):** This product does not contain HAPs.

**U.S. State Regulations****California Proposition 65**

This product does not contain chemicals listed under Proposition 65

**WHMIS hazard class:** Non-controlled

**EU Regulations**

**EEC EINECS Number:** Not identified

**EEC Risk Statements:** None identified

**EEC Safety Statements:** None identified

**Other Country Regulations:** None identified

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**16. OTHER INFORMATION**

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**Disclaimer:** 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.

## MATERIAL SAFETY DATA SHEET

Date Revised: 5/26/2009

**1. PRODUCT AND COMPANY INFORMATION**

**Product Information:** Dimethyl Sulfoxide, anhydrous; DMSO, anhydrous  
**Catalog Number:** Component B  
**Unit Size:** 150 uL  
**Manufacturer/Supplier:** Biotium, Inc.  
3423 Investment Blvd. Suite 8. Hayward, CA 94545, USA  
Phone: 1-510-265-1027, Fax: 1-510-265-1352  
Web: <http://www.biotium.com>  
Emergency Phone: 1-510-265-1027

**2. COMPOSITION AND INFORMATION ON INGREDIENTS**

**Molecular Formula:** C<sub>2</sub>H<sub>6</sub>OS  
**Molecular Weight:** 78.13  
**CAS Number/Name:** [67-68-5]

**3. HAZARDS IDENTIFICATION**

**Emergency Overview:** Combustible. Readily absorbed through skin and irritating to eyes, skin and respiratory system. Handle with care—substance has not been fully tested.

**POTENTIAL HEALTH EFFECTS**

**Inhalation:** Not determined. See Emergency Overview.  
**Ingestions:** Not determined.  
**Skin:** Not determined. See Emergency Overview.  
**Eyes:** Not determined. See Emergency Overview  
**Chronic Exposures:** Not determined.  
**Target Organs:** Eyes, skin.

**HMIS**

Health	1
Flammability	2
Reactivity	1

**4. FIRST AID MEASURES****Oral Exposure**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**

In case of contact, immediately wash skin with soap and copious amounts of water.

**Eye Exposure**

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**5. FIRE FIGHTING MEASURES****General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Combustible liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

**Extinguishing Media:**

Use water spray, dry chemical, carbon dioxide, or appropriate foam. Alcohol-resistant fire fighting foam is recommended for use on all water-soluble liquids or polar solvent-type liquids.

**Flash Point:** 87.8 deg C ( 190.04 deg F)  
**Autoignition Temperature:** 215 deg C ( 419.00 deg F)  
**Explosion Limits, Lower:** 2.6 vol %  
**Upper:** 42 vol %

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## 6. ACCIDENTAL RELEASE MEASURES

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Use appropriate protective equipment and methods to clean up spilled substance promptly. Absorb spill onto an appropriate material. Collect and dispose of all waste in accordance with applicable laws.

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## 7. HANDLING AND STORAGE

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### Storage

Store in properly labeled containers. Store desiccated at room temperature.

### Handling

User exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Under no circumstances eat, drink, or smoke while handling this material. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use.

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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### Occupational exposure controls

#### Exposure limits

**Engineering measures** Ensure adequate ventilation, especially in confined areas

#### Personal protective equipment

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Hand protection** Protective gloves

**Eye protection** Safety glasses with side-shields

**Skin and body protection** Lightweight protective clothing.

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure Controls** Prevent product from entering drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Form:** Liquid  
**Appearance:** clear, colorless  
**Odor:** Not determined  
**Solubility in Water:** High  
**Specific Gravity:** 1.101  
**pH:** Not determined  
**Boiling Point:** 189° C  
**Melting Point:** 18.4° C  
**Flash Point:** 94° C  
**Vapor Pressure:** 0.42 mm Hg at 20° C  
**Vapor Density:** 2.7 (air=1)  
**Evaporation Rate (BuAc=1):** 4.3 (CCl4 = 1)  
**Viscosity:** 1.1 cp at 27 deg° C

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## 10. STABILITY AND REACTIVITY

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**Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.  
Hygroscopic: absorbs moisture or water from the air.

**Conditions to Avoid:** Ignition sources, moisture, excess heat.

**Thermal Decomposition:** No decomposition if used according to specifications

**Dangerous Reactions:** Incompatible with acid chlorides, strong acids, phosphorous halides and strong oxidizing agents

**Dangerous Products of Decomposition:** Carbon monoxide, carbon dioxide, sulfur dioxide.  
**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**RTECS Number:** PV6210000  
**Toxicity:** **LD50/LC50:**  
Draize test, rabbit, eye: 100 mg;  
Draize test, rabbit, eye: 500 mg/24H Mild;  
Draize test, rabbit, skin: 500 mg/24H Mild;  
Oral, mouse: LD50 = 7920 mg/kg;  
Oral, rat: LD50 = 14500 mg/kg;  
Skin, rat: LD50 = 40 gm/kg;

### Potential Health Effects

**Inhalation:** May cause irritation to respiratory tract  
**Ingestions:** May be harmful if swallowed  
**Skin:** May cause skin irritation  
**Eyes:** May cause eye irritation  
**Chronic Exposures:** Not available  
**Target Organs:** Eye, skin

### Specific effects

**Carcinogenic effects:** Not listed by NTP, IARC or OSHA  
**Mutagenic effects:** No information available  
**Reproductive toxicity:** No information available  
**Sensitization:** No information available

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## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects** No information available  
**Environmental:** When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may evaporate to a moderate extent. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

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## 13. DISPOSAL CONSIDERATIONS

Consult local, state or national regulations for proper disposal.

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## 14. TRANSPORT INFORMATION

### DOT

**Hazards Class:** CBL  
**UN Number:** 1993  
**Packing Group:** III  
**Proper Shipping Name (Technical Name):** Combustible liquid, n.o.s. (Dimethyl sulfoxide)

### IATA

**Hazards Class:** Not available  
**UN Number:** Not available  
**Packing Group:** Not classified  
**Proper Shipping Name (Technical Name):** Not classified as dangerous in the context of transport regulations  
**Hazardous for air Transport:** Non-Hazardous for air transport.

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## 15. REGULATIONS

### U.S. Federal Regulations

**SARA Listed:** 311/312, Fire Hazard, Chronic Health Hazard

**US Toxic Substances Control Act (TSCA):** Listed

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs):** This product does not contain HAPs.

**U.S. State Regulations**

**California Proposition 65**

This product does not contain chemicals listed under Proposition 65

**WHMIS hazard class:** D2B

**EU Regulations**

**EEC EINECS Number:** 200-664-3

**EEC Risk Statements:** Irritant R36/37/38 Irritating to eyes, respiratory system and skin. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 Wear Suitable protective clothing. S23 Do not breathe vapor.

**Other Country Regulations:** German regulatory: 1WGK

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## 16. OTHER INFORMATION

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## MATERIAL SAFETY DATA SHEET

Date Revised: 5/26/2009

**1. PRODUCT AND COMPANY INFORMATION**

**Product Information:** Sodium bicarbonate 1M  
**Catalog Number:** Component C  
**Unit Size:** 1 mL  
**Manufacturer/Supplier:** Biotium, Inc.  
3423 Investment Blvd. Suite 8. Hayward, CA 94545, USA  
Phone: 1-510-265-1027, Fax: 1-510-265-1352  
Web: <http://www.biotium.com>  
Emergency Phone: 1-510-265-1027

**2. COMPOSITION AND INFORMATION ON INGREDIENTS**

**Molecular Formula:** NaHCO<sub>3</sub>  
**Molecular Weight:** 84.01  
**CAS Number/Name:** [144-55-8]

**3. HAZARDS IDENTIFICATION**

**Emergency Overview:** The product contains no substances which at the given concentration, are considered to be hazardous to health

**POTENTIAL HEALTH EFFECTS**

**Inhalation:** May cause irritation to respiratory tract  
**Ingestions:** May be harmful if swallowed  
**Skin:** May cause skin irritation  
**Eyes:** May cause eye irritation  
**Chronic Exposures:** Not available  
**Target Organs:** Not available

**HMS**

Health	0
Flammability	0
Reactivity	0

**4. FIRST AID MEASURES****Oral Exposure**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**

In case of contact, immediately wash skin with soap and copious amounts of water.

**Eye Exposure**

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**5. FIRE FIGHTING MEASURES**

Use carbon dioxide, dry chemical extinguishers, foam extinguishers or water. An approved self-contained breathing apparatus and protective clothing are recommended.

**6. ACCIDENTAL RELEASE MEASURES**

Use appropriate protective equipment and methods to clean up spilled substance promptly. Absorb spill onto an appropriate material. Collect and dispose of all waste in accordance with applicable laws.

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## 7. HANDLING AND STORAGE

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### Storage

Store in properly labeled containers. Avoid long-term light exposure

### Handling

User exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Under no circumstances eat, drink, or smoke while handling this material. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use.

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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### Occupational exposure controls

#### Exposure limits

**Engineering measures** Ensure adequate ventilation, especially in confined areas

#### Personal protective equipment

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Hand protection** Protective gloves

**Eye protection** Safety glasses with side-shields

**Skin and body protection** Lightweight protective clothing.

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure Controls** Prevent product from entering drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Form:</b>	Liquid
<b>Odor:</b>	Odorless.
<b>Solubility in Water:</b>	7.8g/100g water @ 18C (64F)
<b>Density:</b>	2.2
<b>pH:</b>	8.3 (0.1 molar @ 25C (77F))
<b>Boiling Point:</b>	Not available
<b>Melting Point:</b>	60C (140F)
<b>Flash Point:</b>	Not available
<b>Vapor Pressure (mm Hg):</b>	Not available
<b>Vapor Density (Air=1):</b>	Not available
<b>Evaporation Rate (BuAc=1):</b>	Not available

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## 10. STABILITY AND REACTIVITY

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<b>Stability:</b>	Stable
<b>Thermal Decomposition:</b>	No decomposition if used according to specifications
<b>Dangerous Reactions:</b>	No dangerous reactions identified
<b>Dangerous Products of Decomposition:</b>	No dangerous decomposition products identified

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## 11. TOXICOLOGICAL INFORMATION

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### Principle Routes of Exposure/

#### Potential Health Effects

<b>Inhalation:</b>	May cause irritation to respiratory tract
<b>Ingestions:</b>	May be harmful if swallowed
<b>Skin:</b>	May cause skin irritation
<b>Eyes:</b>	May cause eye irritation
<b>Chronic Exposures:</b>	Not available
<b>Target Organs:</b>	Not available

#### Specific effects

**Carcinogenic effects** No information available

**Mutagenic effects** No information available

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<b>Reproductive toxicity</b>	No information available
<b>Sensitization</b>	No information available

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## 12. ECOLOGICAL INFORMATION

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<b>Ecotoxicity effects</b>	No information available
<b>Mobility</b>	No information available
<b>Biodegradation</b>	Inherently biodegradable
<b>Bioaccumulation</b>	Does not bioaccumulate

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## 13. DISPOSAL CONSIDERATIONS

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Consult local, state or national regulations for proper disposal

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## 14. TRANSPORT INFORMATION

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### DOT

<b>Hazards Class:</b>	Not available
<b>UN Number:</b>	Not available
<b>Packing Group:</b>	Not classified

**Proper Shipping Name (Technical Name):** Not classified as dangerous in the context of transport regulations

### IATA

<b>Hazards Class:</b>	Not available
<b>UN Number:</b>	Not available
<b>Packing Group:</b>	Not classified

**Proper Shipping Name (Technical Name):** Not classified as dangerous in the context of transport regulations

**Hazardous for air Transport:** Non-Hazardous for air transport.

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## 15. REGULATORY INFORMATION

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### US Federal Regulations

**SARA Listed:** Not regulated

**US Toxic Substances Control Act (TSCA):** Not listed

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs):** This product does not contain HAPs.

### U.S. State Regulations

#### **California Proposition 65**

This product does not contain chemicals listed under Proposition 65

**WHMIS hazard class:** Non-controlled

### EU Regulations

**EEC EINECS Number:** Not identified

**EEC Risk Statements:** None identified

**EEC Safety Statements:** None identified

**Other Country Regulations:** None identified

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## 16. OTHER INFORMATION

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