

**MATERIAL SAFETY DATA SHEET**

Date Revised: July 17, 2015

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**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** DIO/DPA membrane potential detection kit  
**Catalog Number:** 30037  
**Unit Size:** 1 Kit  
**Manufacturer/Supplier:** Biotium, Inc.  
3159 Corporate Place, Hayward, CA 94545, USA  
Phone: 1-510-265-1027, Fax: 1-510-265-1352  
Web: <http://www.biotium.com>

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**Component A DiOC16(3), 2mM in DMSO****1. HAZARDS IDENTIFICATION**

**Classification according to Regulation (EC) No 1272/2008[CLP]**  
Flammable liquids (Category 4), H227

**Classification according to Directive 1999/45/EC****R-phrases(s)**

R36/37/38 Irritating to eyes, respiratory system and skin

**S-phrases(s)**

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S37/39 Wear suitable gloves and eye/face protection

**Labelling according to Regulation (EC) No 1272/2008[CLP]****Hazard pictogram** None**Signal word** Warning**Hazard statements** Combustible liquid H227**Precautionary statements** None**HMIS Classification**

Health hazard: 0

Flammability: 2

Physical hazards: 0

**NFPA Rating**

Health hazard: 0

Fire: 2

Reactivity Hazard: 0

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Name	CAS No.	EC No.	Index No.	Weight %	Classification according to	Classification according to
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					67/548/EEC	regulation (EC)No1278/2008
Dimethylsulfoxide	67-68-5	200-664-3	-	>99%	R36/37/38	H227 Flammable liquid
DiOC16(3)	161433-32-1	-	-	<0.5%	-	-

### 3. 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.

### 4. 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.

### 5. 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.

### 6. 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.

**7. 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	United Kingdom
Limit value, 8hours	-	-	-	-	160mg/m3	-	-
Limit value, short term	-	-	-	-	500mg/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.

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## 8. PHYSICAL AND CHEMICAL PROPERTIES

Chemical Name	DiOC16(3) in DMSO
Appearance	Liquid
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporate rate	No data available
Flammability	No data available
Explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Partition coefficient:n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

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## 9. 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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## 10. TOXICOLOGICAL INFORMATION

### Acute toxicity

**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

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## 11. ECOLOGICAL INFORMATION

**Toxicity** 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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## 12. DISPOSAL CONSIDERATIONS

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

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## 13. 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

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## 14. 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.

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## 15. OTHER INFORMATION

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

Prepared by: Regulatory Department  
Biotium Inc.

Version no. 2

Reason for revision Application of CLP labeling and corresponding 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.

## Component B Dicrylamine, 20mM in DMSO

### 16. HAZARDS IDENTIFICATION

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

Flammable liquids (Category 4), H227  
 Explosive(Div.1.1), H201  
 Acute Toxicity(category 1,2) H300, H310, H330

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

##### R-phrases(s)

R36/37/38 Irritating to eyes, respiratory system and skin  
 R26 very toxic by inhalation  
 R27/28 very toxic if swallowed  
 R51-53 Toxic to aquatic organism

##### S-phrases(s)

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
 S37/39 Wear suitable gloves and eye/face protection

#### Labelling according to Regulation (EC) No 1272/2008[CLP]

**Hazard pictogram** GHS01 ,GHS06

**Signal word** Danger

**Hazard statements** Combustible liquid H227,H201,  
 Fatal if swallowed, contact with skin, inhalation H310,H300,H330

#### Precautionary statements

P264 Wash hands thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P301/P310 If swallowed, Immediately call a POISON CENTER or doctor/physician.

#### HMIS Classification

Health hazard: 0  
 Flammability: 2  
 Physical hazards: 0

#### NFPA Rating

Health hazard: 0  
 Fire: 2  
 Reactivity Hazard: 0

### 17. 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
Dimethylsulfoxide	67-68-5	200-664-3	-	>99%	R36/37/38	H227 Flammable liquid
Dipicrylamine	2844-92-0	220-639-0	612-019-00-7	<1%	E, T+, N; R2,R26/27/28, R33,R51-53	H201, H330,H310,H300,

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## 18. 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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## 19. 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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## 20. 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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## 21. 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.

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## 22. 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	United Kingdom
Limit value, 8hours	-	-	-	-	160mg/m3	-	-
Limit value, short term	-	-	-	-	500mg/m3	-	-

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

Substance dipicrylamine

CAS no. 2844-92-0

Control parameter No information available

## 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.

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## 23. PHYSICAL AND CHEMICAL PROPERTIES

Chemical Name	DPA, 20mM 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	No information available
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
Oxidising properties	No information available

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## 24. 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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## 25. 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

#### Dipicrylamine

No information 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: Dipicrylamine JJ9275000

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## 26. 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

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## 27. DISPOSAL CONSIDERATIONS

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

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## 28. TRANSPORT INFORMATION

**IATA, IMDG, DOT(US)**

UN number 0079

UN proper shipping name Hexanitrodiphenylamine or Dipicrylamine or Hexyl

Transport hazard class 1.1D

Packing group none

Environmental hazards none

Special precaution for user none

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## 29. 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.

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## 30. OTHER INFORMATION

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

Prepared by: Regulatory Department  
Biotium Inc.

Version no. 3

Reason for revision Addition of transport information.

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