

SAFETY DATA SHEET

Date Revised: October 5, 2020

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: D-Luciferin
Catalog Number: 99907/99908
Unit Size: 1 mg/10 mg
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.

2. HAZARDS IDENTIFICATION**GHS Classification**

Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
WHMIS classification None
GHS hazard pictogram None

HMIS Classification

Health hazard: 0
Flammability: 0
Physical hazards: 0
NFPA Rating
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

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

Hazard pictogram None
Signal word None
Hazard statements None
Precautionary statements None

3. COMPOSITION/INFORMATION ON INGREDIENTS

No ingredients present at concentrations classified as harmful to health or the environment.

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 or below.

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

| | |
|---------------------------------------|-------------------|
| Chemical Name | D-Luciferin |
| Appearance | Solid |
| 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 | Soluble in water |
| 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 |
| Oxidizing properties | No data 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

Oral LD50 None

Inhalation LC50 None

Dermal LD50 None

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 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: None

12. ECOLOGICAL INFORMATION

Toxicity No information available

Persistence and degradability No information available

Bioaccumulative potential 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), 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

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.

WHMIS Hazard Class None

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.

Revision date (Initials) ET (10/5/20)

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 Revised: October 5, 2020

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Firefly Luciferase
Catalog Number: 99984/99930
Unit Size: 50 uL/200 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.

2. HAZARDS IDENTIFICATION

GHS Classification

Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
WHMIS classification None
GHS hazard pictogram None

HMIS Classification (Triton X-100)

Health hazard: 2
 Flammability: 1
 Physical hazards: 0
NFPA Rating (Triton X-100)
 Health hazard: 2
 Fire: 1
 Reactivity Hazard: 0

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

Classification according to Directive 1999/45/EC None

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

Hazard pictogram None
Signal word None
Hazard statements None
Precautionary statements None

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 |
|--------------|-----------|-----------|-----------|----------|--|--|
| Triton X-100 | 9002-93-1 | N/A | N/A | 1-5% | N/A | Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 Aquatic Chronic 2 |
| Glycerol | 56-81-5 | 200-289-5 | N/A | 50% | N/A | Skin Irrit. 2 Eye Irrit. 2 STOT RE 2 |

| | | | | | | |
|--|--|--|--|--|--|-----------|
| | | | | | | STOT RE 1 |
|--|--|--|--|--|--|-----------|

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 -70 °C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Substance Glycerol

CAS no. 56-81-5

| country | Austria | Belgium | Denmark | European Union | France | Germany |
|---------------------|---------|----------------------|---------|----------------|----------------------|--------------------------------|
| Limit value, 8hours | -- | 10 mg/m ³ | -- | -- | 10 mg/m ³ | 50 mg/m ³ inhalable |

| | | | | | | |
|-------------------------|----|--|----|----|----|---|
| | | | | | | aerosol |
| Limit value, short term | -- | | -- | -- | -- | 100 mg/m ³ inhalable aerosol |

| | | | | | | | |
|-------------------------|---------|-------|----------------------|----------------------|--------|-------------|---|
| country | Hungary | Italy | Poland | Spain | Sweden | Netherlands | Switzerland |
| Limit value, 8 hours | -- | -- | 10 mg/m ³ | 10 mg/m ³ | -- | -- | 50 mg/m ³ inhalable aerosol |
| Limit value, short term | -- | -- | -- | -- | -- | -- | 100 mg/m ³ inhalable aerosol |

| | | | | | | | |
|-------------------------|----------------------|-----------|--|--------------------------|----------------------|-------|----------------------|
| country | United Kingdom | USA-NIOSH | USA-OSHA | Australia | Canada | Japan | South Korea |
| Limit value, 8 hours | 10 mg/m ³ | -- | 15 mg/m ³ inhalable dust 5 mg/m ³ respirable dust | 10 mg/m ³ (1) | 10 mg/m ³ | -- | 10 mg/m ³ |
| Limit value, short term | -- | -- | -- | -- | -- | -- | -- |

Australia (1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

Germany STV 15 minutes average value

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 | Firefly Luciferase |
| 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 | Soluble in water |
| 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 |
| Oxidizing properties | No data 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

Oral LD50 LD50 Oral – Rat - 1,800 mg/kg (Triton X-100)

LD50 Oral – Rat - 12,600 mg/kg (Glycerol)

Inhalation LC50 No data available

Dermal LD50 LD50 Dermal – Rabbit - 8,000 mg/kg (Triton X-100)

LD50 Dermal – Rabbit - > 10,000 mg/kg (Glycerol)

Other information on acute toxicity no data available

Skin corrosion/irritation Skin – Rabbit Result: Mild skin irritation - 24 h (Glycerol)

Serious eye damage/eye irritation Eyes – Rabbit Result: Moderate eye irritation - 24 h (Triton X-100)

Eyes – Rabbit Result: Mild eye irritation - 24 h (Glycerol)

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: Triton X-100: MD0907700; Glycerol: MA8050000

Prolonged or repeated exposure may cause: Nausea, Headache, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney – Irregularities - Based on Human Evidence (Glycerol)

12. ECOLOGICAL INFORMATION**Toxicity**

Toxicity to fish (Triton X-100): LC50-Pimephales promelas (fathead minnow)

- 8.9 mg/l-96.0 h

Toxicity to daphnia and other aquatic invertebrates (Triton X-100): EC50-Daphnia

(water flea)-26 mg/l-48 h

Persistence and degradability**Bioaccumulative potential**

Biotic/Aerobic Biochemical oxygen demand (Triton X-100) - Exposure time 28 d

Result: 36 % - Not readily biodegradable.(Closed Bottle test)

Mobility in soil

no information available

Results of PBT and vPvB assessment

no information available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects

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), TDG**

Not dangerous goods during transportation

UN number 3082**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (p-tertiary-Octylphenoxy polyethyl alcohol)**Transport hazard class** 9**Packing group** III**Environmental hazards** Marine pollutant**Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code** to be carried in bulk

The cargo is not intended

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.

46117 Landing Parkway, Fremont, CA 94538, U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352

btinfo@biotium.com
<http://www.biotium.com/>

SARA 313: No chemicals were found.
SARA 311/312 Hazards: No chemicals were found.

WHMIS Hazard Class None

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.

Revision date (Initials) ET (10/5/20)

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 Revised: March 23, 2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Assay Buffer
Catalog Number: 30020CT/30020C1/30020C2
Unit Size: 5 mL/10 mL/100 mL
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.

2. HAZARDS IDENTIFICATION

GHS Classification

Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
WHMIS classification None
GHS hazard pictogram None

HMIS Classification (Triton X-100)

Health hazard: 2
 Flammability: 1
 Physical hazards: 0
NFPA Rating (Triton X-100)
 Health hazard: 2
 Fire: 1
 Reactivity Hazard: 0

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

Classification according to Directive 1999/45/EC None

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

Hazard pictogram None
Signal word None
Hazard statements None
Precautionary statements None

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 |
|--------------|-----------|-----------|-----------|----------|--|--|
| Triton X-100 | 9002-93-1 | N/A | N/A | 10% | N/A | N/A |
| Glycerol | 56-81-5 | 200-289-5 | N/A | 50% | N/A | N/A |

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 -70°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Substance Glycerol

CAS no. 56-81-5

| country | Austria | Belgium | Denmark | European Union | France | Germany |
|---------------------|---------|----------------------|---------|----------------|----------------------|--|
| Limit value, 8hours | -- | 10 mg/m ³ | -- | -- | 10 mg/m ³ | 50 mg/m ³ inhalable aerosol |
| Limit value, | -- | | -- | -- | -- | 100 mg/m ³ |

| | | | | | | | |
|------------|--|--|--|--|--|--|-------------------|
| short term | | | | | | | inhalable aerosol |
|------------|--|--|--|--|--|--|-------------------|

| country | Hungary | Italy | Poland | Spain | Sweden | Netherlands | Switzerland |
|-------------------------|---------|-------|----------------------|----------------------|--------|-------------|---|
| Limit value, 8hours | -- | -- | 10 mg/m ³ | 10 mg/m ³ | -- | -- | 50 mg/m ³ inhalable aerosol |
| Limit value, short term | -- | -- | -- | -- | -- | -- | 100 mg/m ³ inhalable aerosol |

| country | United Kingdom | USA-NIOSH | USA-OSHA | Australia | Canada | Japan | South Korea |
|-------------------------|----------------------|-----------|--|--------------------------|----------------------|-------|----------------------|
| Limit value, 8hours | 10 mg/m ³ | -- | 15 mg/m ³ inhalable dust 5 mg/m ³ respirable dust | 10 mg/m ³ (1) | 10 mg/m ³ | -- | 10 mg/m ³ |
| Limit value, short term | -- | -- | -- | -- | -- | -- | -- |

Australia (1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

Germany STV 15 minutes average value

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 | Assay Buffer |
| 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 | Soluble in water |
| 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 |
| Oxidizing properties | No data 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

Oral LD50 LD50 Oral – Rat - 1,800 mg/kg (Triton X-100)
LD50 Oral – Rat - 12,600 mg/kg (Glycerol)

Inhalation LC50 No data available

Dermal LD50 LD50 Dermal – Rabbit - 8,000 mg/kg (Triton X-100)
LD50 Dermal – Rabbit - > 10,000 mg/kg (Glycerol)

Other information on acute toxicity no data available

Skin corrosion/irritation Skin – Rabbit Result: Mild skin irritation - 24 h (Glycerol)

Serious eye damage/eye irritation Eyes – Rabbit Result: Moderate eye irritation - 24 h (Triton X-100)
Eyes – Rabbit Result: Mild eye irritation - 24 h (Glycerol)

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: Triton X-100: MD0907700; Glycerol: MA8050000

Prolonged or repeated exposure may cause: Nausea, Headache, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney – Irregularities - Based on Human Evidence (Glycerol)

12. ECOLOGICAL INFORMATION

| | |
|---|--|
| Toxicity | Toxicity to fish (Triton X-100): LC50-Pimephales promelas (fathead minnow) - 8.9 mg/l-96.0 h Toxicity to daphnia and other aquatic invertebrates (Triton X-100): EC50-Daphnia (water flea)-26 mg/l-48 h |
| Persistence and degradability | No information available |
| Bioaccumulative potential | Biotic/Aerobic Biochemical oxygen demand (Triton X-100) - Exposure time 28 d Result: 36 % - Not readily biodegradable.(Closed Bottle test) |
| Mobility in soil | no information available |
| Results of PBT and vPvB assessment | no information available |
| Other adverse effects | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects |
| 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)****UN number** 3082**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (p-tertiary-Octylphenoxy polyethyl alcohol)**Transport hazard class** 9**Packing group** III**Environmental hazards** Marine pollutant**Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code** The cargo is not intended to be carried in bulk**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.

WHMIS Hazard Class None

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.

Revision date (Initials) ET (10/5/2020)

Reason for revision Application of WHMIS labeling requirements. Revision of Triton X-100 percentage from 1-5% to 10%.

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 Revised: October 5, 2020

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ATP (2 mM)
Catalog Number: 99931
Unit Size: 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.

2. HAZARDS IDENTIFICATION

GHS Classification

Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
WHMIS classification None
GHS hazard pictogram None

HMIS Classification

Health hazard: 0
Flammability: 0
Physical hazards: 0
NFPA Rating
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

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

Hazard pictogram None
Signal word None
Hazard statements None
Precautionary statements None

3. COMPOSITION/INFORMATION ON INGREDIENTS

No ingredients present at concentrations that require reporting.

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 -70°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

| | |
|---------------------------------------|-------------------|
| Chemical Name | ATP, 2 mM |
| 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 | Soluble in water |
| 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 |
| Oxidizing properties | No data 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

Oral LD50 None

Inhalation LC50 None

Dermal LD50 None

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 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: None

12. ECOLOGICAL INFORMATION

Toxicity No information available

Persistence and degradability No information available

Bioaccumulative potential 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), 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

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.

WHMIS Hazard Class None

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.

Revision date (Initials) ET (10/5/2020)

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.