46117 Landing Parkway, Fremont, CA 94538, U.S.A.
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http://www.biotium.com/

SAFETY DATA SHEET

Date Revised: March 23, 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RedDot™2, 200X in DMSO
Catalog Number: 40061, 40061-1, 40061-T
Unit Size: 250 uL, 1 mL, 25 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 None
Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
GHS hazard pictogram None

WHMIS classification
Flammable liquids - Category 4

NFPA Rating
Health hazard: 0
Fire: 2
Reactivity Hazard: 0

Classification according to Regulation (EC) No 1272/2008[CLP] 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.	Weight %	Classification
DMSO	67-68-5	200-664-3	>99%	Flammable liquids - Category 4 (WHMIS)

4. FIRST- AID MEASURES

General advice
Remove affected clothing and launder before reuse.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration and seek medical care.
In case of skin contact

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Wash off with soap and plenty of water. If irritation persists, seek medical care.

In case of eye contact

Flush eyes with water for 15 minutes. If irritation persists, seek medical care.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Seek medical care.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

carbon dioxide, dry chemical extinguishers, foam extinguishers or water.

Special protective equipment for firefighters

Burning produces poisonous gases, sulfur oxides. Wear self contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid breathing vapors, mist or gas. Remove all sources of ignition.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage. Soak up spilled substance with inert absorbent material. . Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid inhalation of vapor or mist.

Avoid direct contact with substance.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Store at 4 ºC

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Substance: Dimethylsulfoxide (DMSO)

CAS no. 67-68-5

Country	Austria	Denmark	Finland	Germany (AGS)	Germany (DFG)	Sweden	Switzerland
Limit value, 8hours	50 ppm 160mg/m3	50 ppm 160mg/m3	50 ppm	50 ppm (1) 160 mg/m3 (1)	50 ppm (1) 160 mg/m3 (1)	50 ppm 150 mg/m3	50 ppm 160mg/m3
Limit value, short term	-	100 ppm 320mg/m3	-	100 ppm (1)(2) 320mg/m3 (1)(2)	100 ppm (1)(2) 320mg/m3 (1)(2)	150 ppm (1) 500 mg/m3 (1)	100 ppm 320mg/m3

Germany (AGS): (1) Skin (2) 15 minutes average value
Germany (DFG): (1) Skin (2) 15 minutes average value
Sweden: (1) 15 minutes average value

Personal protective equipment

Hand protection

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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	RedDot™2, 200X in DMSO
Appearance	Blue 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
Oxidising 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, sulfur oxides
Other decomposition products - no data available

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11. TOXICOLOGICAL INFORMATION

Acute toxicity (DMSO)
Oral LD50 Rat - male and female - 28,300 mg/kg (OECD Test Guideline 401)
Inhalation LC50 Rat - male and female - 4 h - > 5.33 mg/l (OECD Test Guideline 403)
Dermal LD50 Rat - male and female - 40,000 mg/kg Remarks: (ECHA)
Other information on acute toxicity No data available

Skin corrosion/irritation (DMSO)
Skin - Rabbit
Result: slight irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation (DMSO)
Eyes - Rabbit
Result: slight irritation - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitization (DMSO)
Maximization Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity (DMSO)
Ames test
Salmonella typhimurium
Result: negative
sister chromatid exchange assay
Chinese hamster ovary cells
Result: negative
Mutagenicity (mammal cell test): chromosome aberration.
Chinese hamster ovary cells
Result: negative
OECD Test Guideline 474
Rat - male and female
Result: negative

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 (DMSO)
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 (DMSO)
Repeated dose toxicity - Rat - male and female - Oral - 18 Months - NOAEL (No observed

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adverse effect level) - 3,300 mg/kg - LOAEL (Lowest observed adverse effect level) - 9,900 mg/kg
Repeated dose toxicity - Monkey - male and female - Dermal - 18 Months - NOAEL (No observed adverse effect level) - >= 8,910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg
RTECS: PV6210000
Exposure to large amounts can cause:, redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Eyes - Eye disease - Based on Human Evidence
Eyes - Eye disease - Based on Human Evidence

RTECS: PV6210000 (DMSO)

12. ECOLOGICAL INFORMATION

Toxicity (DMSO)
Toxicity to fish: static test LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 h
(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h
(OECD Test Guideline 202)
Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria EC50 - activated sludge - 10 - 100 mg/l - 30 min
(ISO 8192)

Persistence and degradability No information available
Bioaccumulative potential (DMSO) aerobic - Exposure time 28 d
Result: 31 % - Not readily biodegradable.
(OECD Test Guideline 301D)
Mobility in soil No information available
Results of PBT and vPvB assessment No information available
Other adverse effects No information available
Additional information (DMSO)
Stability in water - 0.12 - 1.2 h at 30 °C pH 7
Remarks: Hydrolyzes readily.

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

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15. REGULATION INFORTMATION

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: DMSO : fire hazard, chronic health hazard

WHMIS Hazard Class Flammable liquids - Category 4

16. OTHER INFORMATION

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

Prepared by:	Regulatory Department Biotium Inc.
Version no.	4
Revision date (Initials)	3/23/2023 (JD)
Reason for revision	Updated to new document template.

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.

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SAFETY DATA SHEET

Date Revised: March 23, 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NucView® 488 Caspase-3 Substrate, 0.2 mM in DMSO
Catalog Number: 99925
Unit Size: 250 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 None
Signal word None
Health hazards None
Physical hazards None
Hazard statements None
Precautionary statements None
GHS hazard pictogram None

WHMIS classification
Flammable liquids - Category 4

NFPA Rating
Health hazard: 0
Fire: 2
Reactivity Hazard: 0

Classification according to Regulation (EC) No 1272/2008[CLP] 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.	Weight %	Classification
DMSO	67-68-5	200-664-3	>99%	Flammable liquids - Category 4 (WHMIS)

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.

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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 (DMSO)
CAS no. 67-68-5

Country	Austria	Denmark	Finland	Germany (AGS)	Germany (DFG)	Sweden	Switzerland
Limit value, 8hours	50 ppm 160mg/m3	50 ppm 160mg/m3	50 ppm	50 ppm (1) 160 mg/m3 (1)	50 ppm (1) 160 mg/m3 (1)	50 ppm 150 mg/m3	50 ppm 160mg/m3
Limit value, short term	-	100 ppm 320mg/m3	-	100 ppm (1)(2) 320mg/m3 (1)(2)	100 ppm (1)(2) 320mg/m3 (1)(2)	150 ppm (1) 500 mg/m3 (1)	100 ppm 320mg/m3

Germany (AGS): (1) Skin (2) 15 minutes average value
Germany (DFG): (1) Skin (2) 15 minutes average value
Sweden: (1) 15 minutes average value

Personal protective equipment
Hand protection

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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	NucView® 488 Caspase-3 Substrate, 0.2 mM 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	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
Oxidising 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

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11. TOXICOLOGICAL INFORMATION

Acute toxicity (DMSO)
Oral LD50 Rat - male and female - 28,300 mg/kg (OECD Test Guideline 401)
Inhalation LC50 Rat - male and female - 4 h - > 5.33 mg/l (OECD Test Guideline 403)
Dermal LD50 Rat - male and female - 40,000 mg/kg Remarks: (ECHA)
Other information on acute toxicity No data available

Skin corrosion/irritation (DMSO)
Skin - Rabbit
Result: slight irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation (DMSO)
Eyes - Rabbit
Result: slight irritation - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitization (DMSO)
Maximization Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity (DMSO)
Ames test
Salmonella typhimurium
Result: negative
sister chromatid exchange assay
Chinese hamster ovary cells
Result: negative
Mutagenicity (mammal cell test): chromosome aberration.
Chinese hamster ovary cells
Result: negative
OECD Test Guideline 474
Rat - male and female
Result: negative

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 (DMSO)
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 (DMSO)
Repeated dose toxicity - Rat - male and female - Oral - 18 Months - NOAEL (No observed

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adverse effect level) - 3,300 mg/kg - LOAEL (Lowest observed adverse effect level) - 9,900 mg/kg
Repeated dose toxicity - Monkey - male and female - Dermal - 18 Months - NOAEL (No observed adverse effect level) - >= 8,910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg
RTECS: PV6210000
Exposure to large amounts can cause:, redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Eyes - Eye disease - Based on Human Evidence
Eyes - Eye disease - Based on Human Evidence

RTECS: PV6210000 (DMSO)

12. ECOLOGICAL INFORMATION

Toxicity (DMSO)
Toxicity to fish: static test LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 h
(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h
(OECD Test Guideline 202)
Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria EC50 - activated sludge - 10 - 100 mg/l - 30 min
(ISO 8192)

Persistence and degradability No information available
Bioaccumulative potential (DMSO) aerobic - Exposure time 28 d
Result: 31 % - Not readily biodegradable.
(OECD Test Guideline 301D)
Mobility in soil No information available
Results of PBT and vPvB assessment No information available
Other adverse effects No information available
Additional information (DMSO)
Stability in water - 0.12 - 1.2 h at 30 °C pH 7
Remarks: Hydrolyzes readily.

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

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15. REGULATION INFORTMATION

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: DMSO : fire hazard, chronic health hazard

WHMIS Hazard Class Flammable liquids - Category 4

16. OTHER INFORMATION

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

Prepared by:	Regulatory Department Biotium Inc.
Version no.	3
Revision date (Initials)	3/23/2023 (JD)
Reason for revision	Updated to new document template.

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