

SAFETY DATA SHEET

Date: August 28, 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CellBrite® Fix Membrane Stain
Catalog Number: 30088A, 30089A, 30090A
Unit Size: 1 vial
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
GHS hazard pictogram None

WHMIS classification None

NFPA Rating

Health hazard: 0
Fire: 0
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

No ingredients present at concentrations classified as hazardous 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Substance: N/A

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	CellBrite® Fix Membrane Stain
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	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
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: 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. 4
Revision date (Initials) 8/28/2023 (JK)
Reason for revision Update 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.

SAFETY DATA SHEET

Date: August 28, 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Anhydrous DMSO
Catalog Number: 99953, 99953-1
Unit Size: 150 uL, 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: 2
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

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 -20°C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Components with workplace control parameters

Substance: Dimethylsulfoxide

CAS no. 67-68-5

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

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	Anhydrous DMSO
Appearance	Colorless Liquid
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 16 - 19 °C (61 - 66 °F)
Boiling point	189 °C (372 °F)
Flash point	87 °C (189 °F) - closed cup
Evaporate rate	No data available
Flammability	No data available
Explosive limits	Upper explosion limit: 42 %(V); Lower explosion limit: 3.5 %(V)
Vapor pressure	0.55 hPa (0.41 mmHg) at 20 °C (68 °F)
Vapor density	2.70 - (Air = 1.0)
Relative density	1.1 g/mL
Solubility	Completely miscible (water solubility)
Partition coefficient:n-octanol/water	log Pow: -2.03
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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Skin – Rabbit

Result: slight irritation – 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes – Rabbit

Result: slight irritation – 24 h

(OECD Test Guideline 405)

Respiratory or skin sensitization

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

Test Type: Ames test

Test system: *Salmonella typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 479

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

Species: Rat

Application Route: Intraperitoneal

Method: OECD Test Guideline 474

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

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

Repeated dose toxicity - Rat - male and female - Oral - 18 Months - NOAEL (No observed 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) - \geq 8,910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg

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

RTECS: PV6210000 (DMSO)

12. ECOLOGICAL INFORMATION**Toxicity**

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

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

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

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: 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) 8/28//2023 (JK)

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.