

Kit Summary

Product Code(s) AB234045
Product name Caspase 3 Immunoassay Kit (Fluorometric)

Cell Lysis Buffer

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-------|-----------|----------|--|---------------------------|
| Triton-X-100 | - | 9002-93-1 | <5 | Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Acute Tox. 4 (H302) Aquatic Chronic 2 (H411) | - |

DTT (1 M)

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-----------|-----------|----------|--|---------------------------|
| DTT | 222-468-7 | 3483-12-3 | <25 | STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) | - |

DEVD-AFC Substrate (1 mM)

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-----------|---------|----------|---------------------------------|---------------------------|
| DMSO | 200-664-3 | 67-68-5 | 90-99 | - | - |

GHS / CLP - GHS - Classification



Signal Word
Danger

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P271 - Use only outdoors or in a well-ventilated area

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/ physician

P362 - Take off contaminated clothing and wash before reuse

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P273 - Avoid release to the environment

P501 - Dispose of contents/ container to an approved waste disposal plant

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

2.3 Other information

A safety datasheet follows for all potentially hazardous components – all other components are non-hazardous

Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

Safety Data Sheet

Issuing date No data available

Revision Date 04-Jun-2018

Version 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Cell Lysis Buffer

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-----------------------------------|------------|
| Serious eye damage/eye irritation | Category 1 |
| Chronic aquatic toxicity | Category 3 |

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statements

H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P273 - Avoid release to the environment
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|-----------|----------|--|
| Triton-X-100 | 9002-93-1 | 3-7 | Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Acute Tox. 4 (H302) Aquatic Chronic 2 (H411) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|-----------------------------------|---|
| General advice | Immediate medical attention is required. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Immediate medical attention is required. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. |
| Inhalation | Move to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. |
| Ingestion | Rinse mouth. Do NOT induce vomiting. Immediate medical attention is required. |
| Notes to physician | Treat symptomatically. |
| Protection of first-aiders | Use personal protective equipment. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. Dam up. |

7. HANDLING AND STORAGE

| | |
|--|---|
| Advice on safe handling | Ensure adequate ventilation. Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. |
| Technical measures/Storage conditions | Keep container tightly closed. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. Face-shield. |
| Skin and body protection | No special protective equipment required. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | No information available |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible products None known based on information supplied.

Conditions to avoid None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Corrosive to skin, eyes and/or respiratory tract.

Inhalation Corrosive by inhalation Causes burns

Eye contact Causes burns Corrosive to eyes

Skin contact Corrosive Causes burns

Ingestion Causes burns

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|--------------------|-------------|-----------------|
| Triton-X-100 | 1800 mg/kg (Rat) | | |

Chronic toxicity

Chronic toxicity Avoid repeated exposure

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods
IATA Not dangerous goods
ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed H315 - Causes skin irritation H318 - Causes serious eye damage H411 - Toxic to aquatic life with long lasting effects

Hazard statements

H318 - Causes serious eye damage

H412 - Harmful to aquatic life with long lasting effects

Revision Date 04-Jun-2018

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 04-Jun-2018

Version 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product name DTT (1M)

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|---|------------|
| Acute oral toxicity | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |
| Specific target organ systemic toxicity (single exposure) | Category 3 |

GHS Label elements, including precautionary statements



Signal Word
Warning

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P271 - Use only outdoors or in a well-ventilated area

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P362 - Take off contaminated clothing and wash before reuse

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P501 - Dispose of contents/ container to an approved waste disposal plant

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|-----------|----------|--|
| DTT | 3483-12-3 | 10-30 | STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. If symptoms persist, call a physician. |
| Ingestion | Rinse mouth. If symptoms persist, call a physician. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|-----------------------------|----------------|
| Flammable properties | Not flammable. |
| Flash point | not determined |

| | |
|--|--|
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Dam up. |

7. HANDLING AND STORAGE

| | |
|--|---|
| Advice on safe handling | Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. Use only in area provided with appropriate exhaust ventilation. |
| Technical measures/Storage conditions | Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. Face-shield. |
| Skin and body protection | No special protective equipment required. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | | |
| Explosion limits | No information available | | |
| Specific Gravity | No data available | solubility | No information available. |
| Evaporation rate | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Vapor density | No data available | VOC Content(%) | Not applicable |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

| | |
|----------------------------|---|
| Product Information | Harmful if swallowed Irritating to skin, eyes and / or respiratory tract. |
| Inhalation | May cause irritation of respiratory tract |
| Eye contact | May cause irritation |
| Skin contact | May cause irritation |
| Ingestion | Harmful if swallowed Ingestion may cause irritation to mucous membranes |

Chronic toxicity

| | |
|-----------------------------|-------------------------|
| Chronic toxicity | Avoid repeated exposure |
| Target Organ Effects | None known. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

Hazard statements

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Revision Date

04-Jun-2018

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 04-Jun-2018

Version 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product name DEVD-AFC Substrate (1 mM)
Recommended use For research use only

Supplier Address Abcam Inc
 1 Kendall Square, Ste 341
 Cambridge, MA 02139-1517
 USA
 Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
 Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Other information

Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|---------|----------|---------------------------------|
| DMSO | 67-68-5 | 60-99 | - |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Handle in accordance with good industrial hygiene and safety practice. |
| Technical measures/Storage conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | No special protective equipment required. |
| Skin and body protection | No special protective equipment required. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | Handle in accordance with good industrial hygiene and safety practice. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | 99 |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|---------------------|-----------------|-----------------|
| DMSO | 14500 mg/kg (Rat) | 40 g/kg (Rat) | |

Chronic toxicity

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|--|---|----------------------------|---|
| DMSO | 12350 - 25500: 96 h Skeletonema costatum mg/L EC50 | 34: 96 h Pimephales promelas mg/L LC50 33-37: 96 h Oncorhynchus mykiss g/L LC50 static 40: 96 h Lepomis macrochirus g/L LC50 static 41.7: 96 h Cyprinus carpio g/L LC50 | | 7000: 24 h Daphnia species mg/L EC50 |
| Chemical Name | | | log Pow | |
| DMSO | | | -2.03 | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

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

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| DMSO | | X | | | |

International Regulations**WHMIS Note:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Revision Date 04-Jun-2018
Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS