
Section 1: Information

1. Product Identification

- 1.1. Name: Caspase 3/7
- 1.2. C.A.S. Number: Not available
- 1.3. Catalog Number:
 - 1.3.1. ViaStain™ Live Caspase 3/7 Detection for 2D/3D Culture,
Cat. No.: CS1-V0002-1, 100uL
 - 1.3.2. ViaStain™ Live Caspase 3/7 Detection for 2D/3D Culture with Hoechst,
Cat. No.: CSK-V0003-1, 100uL
 - 1.3.3. ViaStain™ Live Caspase 3/7 Detection for 2D/3D Culture,
Cat. No.: CS1-V0002-1-S, 10µL
 - 1.3.4. ViaStain™ Live Caspase 3/7 Detection for 2D/3D Culture with Hoechst,
Cat. No.: CSK-V0003-S, 10µL

1.4. Supplier

Nexcelom Bioscience, LLC.
360 Merrimack St.
Lawrence, MA 01843
Phone Number: 1 (978) 327-5340
Hours of Operation: 9am-5pm EST

Nexcelom Bioscience, Ltd.
Unit 5, Rutherford House
Pencroft Way,
Manchester Science Park
Manchester. M15 6SZ. UK
Phone Number: 0161-232-4592

- 1.5. Emergency Number: Please contact the appropriate local emergency response provider
- 1.6. R.E.A.C.H Registration Number: No registration number is given yet for the substance/substances in this mixture since the annual import quantity is less than the required one tonnage per annum

2. Recommended Use

- 2.1. Caspase 3/7 should only be used as a dye reagent for detecting Caspase 3/7 pathway of apoptosis
- 2.2. Caspase 3/7 is not intended to be used as a human or animal diagnostic or as a therapeutic reagent, it is intended for research use only
- 2.3. Do not use Caspase 3/7 for any other purposes

Section 2: Hazard Identification

1. Hazard Classification

- 1.1. H227 Combustible liquid Category: 4
For the full text of H-Statements please reference Section 16

2. Label Elements

- 2.1. Signal Words: Warning
- 2.2. Hazard Statements: H227Combustible liquid

Precautionary Statements: P210 Keep away from heat/sparks/open flames/hot surfaces
P280 Wear protective gloves/eye protection/face protection
P370 + P378 In the event of a fire: Use dry sand, dry chemical, or alcohol resistant foam to extinguish
P403 + P235 Store in a well-ventilated place and keep cool
P501 Dispose of contents/container to an approved waste disposal plant

2.3. Supplemental Hazard Statements: None

2.4. Pictograms:

2.4.1. None

2.5. Other Hazards Which Do Not Result in Classification

2.5.1. Dimethyl sulfoxide is readily absorbed through the skin and may carry such materials into the body

2.5.2. Hazardous Materials Identification System Classification

Health Hazard: 1

Chronic Health Hazard: *

Flammability: 2

Physical Hazard: 0

2.5.3. National Fire Protection Association Rating

Health Hazard: 0

Fire: 2

Reactivity Hazard: 0

Instability: 0

Section 3: Composition and Information on Ingredients

1. Substance: Caspase 3/7

1.1. Hazardous Component: Caspase 3/7

1.2. Synonyms

1.2.1. None

1.3. Hazardous component molecular formula: Not available

1.4. Hazardous component molecular weight: Not available

2. Substance: Dimethyl sulfoxide

2.1. Hazardous Component: Dimethyl sulfoxide

2.2. Synonyms

2.2.1. DMSO

2.3. Hazardous component molecular formula: C₂H₆OS

2.4. Hazardous component molecular weight: 78.13 g/mol

Common Name	Classification	CAS Number/ IUPAC Name	EC- Number	M- Factor	Percentage
DMSO	H227: 4	67-68-5	200-664-3	N/A	90-99.9%
Caspase 3/7	None	-	-	N/A	0.1 % - 10 %

Section 4: First-aid Measures

1. Always remove contaminated personnel away from the hazardous area and to a safe area
2. Most Important Symptoms and Effects
 - 2.1. See general first aid measures below
 - 2.2. See Section 11
3. Indication of Immediate Medical Attention or Necessary Special Treatment
 - 3.1. No information available
4. Medical Professionals
 - 4.1. If medical advice or attention is required, present them with this safety data sheet first
 - 4.2. Notes to Physician: Treat symptomatically
5. Inhalation
 - 5.1. Place person in fresh air and in a comfortable position for breathing
 - 5.2. Seek medical advice or attention
6. Skin Contact
 - 6.1. Remove any contaminated clothing, and wash area with soap and plenty of water for 15 minutes
 - 6.2. Wash clothes before re-use
 - 6.3. Seek medical advice or attention
7. Eye Contamination
 - 7.1. Flush open eyes for 15 minutes
 - 7.2. If contacts are present, remove contacts after first 15-minute wash and flush for an additional 15 minutes
 - 7.3. Seek medical advice or attention if irritation persists
8. Ingestion
 - 8.1. Do not induce vomiting
 - 8.2. Drink plenty of water
 - 8.3. Never give an unconscious person anything by mouth
 - 8.4. Seek medical advice or attention

Section 5: Fire-fighting Measures

1. Suitable Extinguishing Media
 - 1.1. Carbon dioxide
 - 1.2. Dry chemical extinguishers
 - 1.3. Foam extinguishers
 - 1.4. Water

2. Not Suitable Extinguishing Media
 - 2.1. No information available
3. Specific Hazards Arising from the Chemical
 - 3.1. Carbon oxides, Sulphur oxides, poisonous gas
4. Special Protective Actions for Fire-fighters
 - 4.1. Wear a self-contained breathing apparatus for firefighting if necessary
5. Further Information
 - 5.1. Use water spray to cool unopened containers

Section 6: Accidental Release Measures

1. Personal Precautions
 - 1.1. Use proper personal protective equipment
 - 1.2. Avoid breathing vapors, mists, or gases
 - 1.3. Remove all sources of ignition
 - 1.4. Vapors can accumulate to explosive concentrations in low areas
 - 1.5. See Section 8
2. Protective Equipment
 - 2.1. See Section 8
3. Emergency Procedures
 - 3.1. See Section 5
4. Accidental Spills or Release of the Product
 - 4.1. Wear proper protective equipment while cleaning up spills
 - 4.2. Remove ignition sources and provide adequate ventilation
 - 4.3. Contact emergency personnel if required
5. Emergency Responders
 - 5.1. Personal Protective Equipment
 - 5.1.1. See Section 5
6. Environmental Precautions
 - 6.1. Prevent further leakage or spillage
 - 6.2. Do not let product enter drains
7. Methods and Materials for Containment and Cleaning
 - 7.1. Drains
 - 7.1.1. Do not let product enter drains
 - 7.2. Capping procedures
 - 7.2.1. No information available
 - 7.3. Neutralization techniques
 - 7.3.1. No information available
 - 7.4. Decontamination techniques
 - 7.4.1. No information available
 - 7.5. Absorbent Materials
 - 7.5.1. Inert absorbent materials
 - 7.6. Cleaning Techniques

- 7.6.1. Can collect with wet brush and place in a suitable, closed container for disposal according to local regulations (see Section 13)
- 7.6.2. Contain spillage
- 7.6.3. Soak up with inert absorbent material
- 7.6.4. Keep in a suitable closed container
- 7.6.5. For disposal see Section 13
- 7.7. Vacuuming Techniques
 - 7.7.1. Can collect using an electrically protected vacuum cleaner into a suitable, closed container for disposal according to local regulations (see Section 13)
- 7.8. Special Equipment
 - 7.8.1. No information available

Section 7: Handling and Storage

- 1. Safe Handling
 - 1.1. Avoid inhalation of vapors or mists
 - 1.2. Keep away from sources of ignition – no smoking
 - 1.3. Take measures to prevent the buildup of electrostatic charge
- 2. Incompatible Substances
 - 2.1. No information available
- 3. Operations and Conditions to Avoid
 - 3.1. Any heat or fire sources
- 4. General Good Hygiene Practices
 - 4.1. No eating, drinking or smoking in work areas
 - 4.2. Wash hands after breaks and at the end of the work day
 - 4.3. Remove contaminated clothing and protective equipment before entering eating areas
- 5. Conditions for Safe Storage
 - 5.1. Keep container tightly closed in a dry and well-ventilated place
 - 5.2. Store under inert gas: hygroscopic
 - 5.3. Store at 4 °C
 - 5.4. Storage class (TRGS 510): Combustible liquids
 - 5.5. Conditions to avoid
 - 5.5.1. Heat and flames
 - 5.6. Environmental Effects to avoid
 - 5.6.1. No information available
- 6. How to maintain product integrity
 - 6.1. Keep container tightly closed in a dry and well-ventilated place
 - 6.2. Keep in a dry place
- 7. Engineering Advice
 - 7.1. No information available

Section 8: Exposure Controls and Personal Protection

1. National Exposure Limits

1.1. Substance: Dimethyl sulfoxide

1.1.1. CAS no. 67-68-5

Country	TWA (8-hour weighted average)		Short -Term Limits/Excursion Limits (STEL)		Biological Limit Value
	ppm	mg/m ³	ppm	mg/m ³	
Austria	-	160 mg/m ³	-	-	-
Belgium	-	-	-	-	-
Bulgaria	-	-	-	-	-
Croatia	-	-	-	-	-
Cyprus	-	-	-	-	-
Czech Republic	-	-	-	-	-
Denmark	-	160 mg/m ³	-	320 mg/m ³	-
Estonia	-	-	-	-	-
Finland	-	-	-	-	-
France	-	-	-	-	-
Germany	-	160 mg/m ³	-	320 mg/m ³	-
Greece	-	-	-	-	-
Hungary	-	-	-	-	-
Ireland	-	-	-	-	-
Italy	-	-	-	-	-
Latvia	-	-	-	-	-
Lithuania	-	-	-	-	-
Luxembourg	-	-	-	-	-
Malta	-	-	-	-	-
Netherlands	-	-	-	-	-
Poland	-	-	-	-	-
Portugal	-	-	-	-	-
Romania	-	-	-	-	-
Slovakia	-	-	-	-	-
Slovenia	-	-	-	-	-
Spain	-	-	-	-	-
Sweden	-	160 mg/m ³	-	500 mg/m ³	-
United Kingdom	-	-	-	-	-

2. Appropriate Engineering Controls

2.1. Handle with good industrial hygiene and safety practices

2.2. Wash hands before breaks and at the end of the workday

2.3. Have appropriate showers, eye wash stations, and ventilation systems installed and up to code

3. Exposure Controls

- 3.1. Always use good occupational hygiene practices
 - 3.1.1. Do not eat, drink, or smoke while using this product
 - 3.1.2. Wash hands before breaks and at the end of the work day
 - 3.1.3. Regularly clean equipment, work area, and clothing
- 3.2. Eye and face protection
 - 3.2.1. Use safety glasses with side-shields conforming to EN166 or equipment for eye protection tested and approved under appropriate government standards such as NIOSH (U.S.A.) or EN 166 (E.U.)
- 3.3. Skin protection
 - 3.3.1. Gloves must be inspected prior to use
 - 3.3.2. Nitrile gloves are not recommended due to some having a 5 minutes breakthrough time
 - 3.3.3. Use proper removal technique (without touching glove's outer surface) to avoid skin contact with this product
 - 3.3.4. Dispose of contaminated gloves after use in accordance with applicable laws (outlined in Section 13) and good laboratory practices
- 3.4. Respiratory Protection
 - 3.4.1. No information available
- 3.5. Thermal Hazards
 - 3.5.1. Avoid heat
- 4. Environmental Exposure Controls
 - 4.1. Do not let product enter drains

Section 9: Physical and Chemical Properties

Property	Data
Physical State	Liquid
Color	Clear
Odor	Sulphurous
Odor Threshold	No data available
Freezing Point	No data available
Melting Point	Melting point range: 16-19 °C (61-66 °F)
Boiling point or Initial Boiling Point/Range	189 °C (372 °F)
Flammability	No data available
Lower and Upper Explosion Limit/Flammability Limit	Upper Explosion Limit: 42 % Lower Explosion Limit: 3.5 %
Flash Point	87 °C (189 °F) – Closed cup- ASTM D 93
Auto-Ignition Temperature	300-302 °C (572-576 °F)
Explosive Properties	No information available
Decomposition Temperature	> 190 °C (> 374 °F)
Oxidizing Properties	No information available
pH	Not applicable
Viscosity	No information available

Solubility	Water Solubility – Completely miscible (-0.12 – 1.2 h at 30 °C (86 °F) Alcohol – Soluble Diethyl ether - Soluble
Partition Coefficient n-octanol/water (Log value)	log Pow: -1.35
Vapor Pressure	0.55 h Pa (0.41 mmHg) at 20 °C (68 °F) 4 h Pa (3 mmHg) at 50 °C (122 °F)
Density and/or Relative Density	1.1 g/mL
Relative Vapor Density	2.70 - (Air = 1.0)
Particle Characteristics	Not applicable
Evaporation Rate	No information available
Surface Tension	43.5 mN/m at 20 °C (68 °F)

Section 10: Stability and Reactivity

1. Reactivity
 - 1.1. No information available
2. Chemical Stability
 - 2.1. Stable under recommended storage conditions
3. Possibility of Hazardous Reactions
 - 3.1. No information available
4. Conditions to avoid
 - 4.1. Heat, flames, and sparks
5. Incompatible Materials
 - 5.1. Acid chlorides, Phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents
6. Hazardous Decomposition Products
 - 6.1. Formed under fire: See Section 5
 - 6.2. Other decomposition products: No information available

Section 11: Toxicological Information

1. Acute Toxicity: Dimethyl sulfoxide
 - 1.1. Oral LD50 - Rat – 14,500 mg/kg
 - 1.2. Inhalation LC50 - Rat – 4h – 40250 ppm
 - 1.3. Dermal LD50 - Rabbit - >5,000 mg/kg
2. Skin Corrosion/Irritation
 - 2.1. Mild skin irritation
3. Serious Eye Damage/Irritation
 - 3.1. No information available
4. Respiratory or Skin Sensitization
 - 4.1. No information available
5. Repeated Dose Toxicity
 - 5.1. No information available

6. Germ Cell Mutagenicity
 - 6.1. Mouse
 - 6.1.1. Lymphocyte - Cytogenic analysis
 - 6.1.2. Lymphocyte - Mutation in mammalian somatic cells
 - 6.1.3. DNA damage
 - 6.2. Rat
 - 6.2.1. Lymphocyte - Cytogenic analysis
 - 6.3. Salmonella typhimurium assay (Ames test): Negative – Caspase 3/7 only
7. Carcinogenicity
 - 7.1. Rat
 - 7.1.1. Oral – Tumorigenic: Equivocal tumorigenic agent by RTECS criteria
 - 7.1.2. Skin, and Appendages:
 - 7.1.3. Other: Tumors
 - 7.2. Mouse
 - 7.2.1. Oral – Tumorigenic: Equivocal tumorigenic agent by RTECS criteria
 - 7.2.2. Leukemia, Skin, and Appendages:
 - 7.2.3. Other: Tumors
 - 7.3. IARC
 - 7.3.1. 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
8. Reproductive Toxicity
 - 8.1. Rat – Effects on Fertility
 - 8.1.1. Intraperitoneal
 - 8.1.1.1. Abortion
 - 8.1.1.2. Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants)
 - 8.1.2. Subcutaneous
 - 8.1.2.1. Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants)
 - 8.1.2.2. Litter size (e.g., number of fetuses per litter; measured before birth)
 - 8.2. Mouse – Effects on Fertility
 - 8.2.1. Oral
 - 8.2.1.1. Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)
 - 8.3. Mouse – Effects on Embryo or Fetus
 - 8.3.1. Oral
 - 8.3.1.1. Fetotoxicity (except death, e.g., stunted fetus)
 - 8.3.2. Intraperitoneal
 - 8.3.2.1. Fetotoxicity (except death, e.g., stunted fetus)
 - 8.3.3. Specific Developmental Abnormalities
 - 8.3.3.1. Musculoskeletal system
9. Specific Target Organ Toxicity- Single Exposure

- 9.1. No information available
- 10. Specific Target Organ Toxicity – Repeated Exposure
 - 10.1. No information available
- 11. Aspiration Hazard
 - 11.1. May cause respiratory irritation – Caspase 3/7
- 12. Likely Routes of Exposure
 - 12.1. Skin
 - 12.2. Eyes
 - 12.3. Inhalation
- 13. Symptoms Related to Physical, Chemical, and Toxicological Characteristics
 - 13.1. No information available
- 14. Delayed and Immediate Effects
 - 14.1. Short Term Exposure
 - 14.1.1. No information available
 - 14.2. Long Term Exposure
 - 14.2.1. No information available
- 15. Interactive Effects
 - 15.1. No information available
- 16. Other Information
 - 16.1. Registry of Toxic Effects of Chemical Substances
 - 16.1.1. PV6210000 – Dimethyl sulfoxide
 - 16.2. Exposure to large amounts can cause: redness of skin, itching, burning, sedation, headache, nausea, and dizziness
 - 16.3. Eye disease – Based on human evidence
 - 16.4. Caspase 3/7
 - 16.4.1. Inhalation may be harmful and cause respiratory tract irritation
 - 16.4.2. Ingestion may be harmful
 - 16.4.3. Skin irritation may occur and be harmful when absorbed
 - 16.4.4. Eye irritation may occur upon contact

Section 12: Ecological Information

- 1. Ecotoxicity: May cause long-lasting, harmful effects to aquatic life
 - 1.1. Fish
 - 1.1.1. LC50 *Pimephales promelas* (fathead minnow) 34,000 mg/l – 96 h
 - 1.1.2. LC50 *Oncorhynchus mykiss* (rainbow trout) 35,000 mg/l – 96 h
 - 1.1.3. LC50 Ten species of fish 32500-43000 ppm – 96 h
 - 1.2. Daphnia and Other Aquatic Invertebrates
 - 1.2.1. EC50 *Daphnia magna* (water flea) 24,600 mg/l – 48 h
(OECD Test Guideline 202)
 - 1.3. Algae
 - 1.3.1. EC50 *Pseudokirchneriella subcapitata* (green algae) 17,000 mg/l – 72 h
(OECD Test Guideline 201)

- 1.4. Other Aquatic Plants
 - 1.4.1. No information available
- 1.5. Soil Micro- and Macro-Organisms
 - 1.5.1. No information available
- 1.6. Birds
 - 1.6.1. No information available
- 1.7. Bees
 - 1.7.1. No information available
- 1.8. Plants
 - 1.8.1. No information available
- 1.9. Inhibition of Micro-Organisms
 - 1.9.1. No information available
- 1.1. Impact on Sewage Treatment Plants
 - 1.1.1. No information
 - 1.1.2. Reference Section 13
- 2. Persistence and Degradability
 - 2.1. Not readily biodegradable 31% according to OECD Test Guideline 301D
- 3. Bioaccumulative Potential
 - 3.1. No information available
- 4. Mobility in Soil
 - 4.1. No information available
- 5. Other Adverse Effects
 - 5.1. Stability in water-0.12 - 1.2 h at 30 °C
 - 5.2. Environmental Fate
 - 5.2.1. No information available
 - 5.3. Ozone Depletion Potential
 - 5.3.1. No information available
 - 5.4. Photochemical Ozone Creation Potential
 - 5.4.1. No information available
 - 5.5. Endocrine Disrupting Potential and/or Global Warming Potential
 - 5.5.1. No information available

Section 13: Disposal Considerations

- 1. Disposal Methods
 - 1.1. Please take precautions to generate as little waste as possible while handling and using this product
 - 1.2. Do not dispose of contaminated materials in the sewage
 - 1.3. Packaging, containers, solutions and any material that may have come in contact with this product should be considered as hazardous as the product itself
 - 1.4. Disposal of this product and any of its by-products should be in compliance with all applicable local, regional and national/federal biological hazardous waste disposal regulations

Section 14: Transport Information

1. European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
 - 1.1. Not available
2. Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)
 - 2.1. Not available
3. European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)
 - 3.1. Not available
4. UN Number: No information available
5. UN Proper Shipping Name: No information available
6. Transport Hazard Class: No information available
7. Packing Group: No information available
8. Environmental Hazards
 - 8.1. No information available
9. Special Precautions for the User
 - 9.1. No information available
10. Transport in bulk according to Annex II of MARPOL 73/78
 - 10.1. Not applicable
 - 10.2. International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code): Not applicable

Section 15: Regulatory Information

1. Safety Regulations/Legislations
 - 1.1. International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors: Neither banned nor restricted
 - 1.2. REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Neither banned nor restricted
 - 1.3. Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Neither banned nor restricted
 - 1.4. REACH – List of substances subject to authorization (Annex XIV): Neither Banned nor restricted
 - 1.5. REACH – Candidate List of Substances of Very High Concern for Authorization (Article 59): This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57)
2. Health Regulations/Legislations
 - 2.1. No information available
3. Environmental Regulations/Legislations

- 3.1. Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer:
Neither banned nor restricted
- 3.2. Regulation (EC) No. 850/2004 on persistent organic pollutants: Neither banned nor restricted
4. Chemical Safety Assessment
 - 4.1. No chemical safety assessment information is available

Section 16: Other Information

1. Literary references
 - 1.1. H statements according to Regulation (EC) No. 1272/2008
 - 1.1.1. H227 Combustible liquid
 - 1.2. R-phrases according to EU Directives 67/584/EEC or 1999/45/EC
 - 1.2.1. None to report
2. Methods of Evaluation
 - 2.1. In accordance with Article 9 (2.) of Regulation (EC) No. 1272/2008
 - 2.2. In accordance with Article 8 (3. B) of Regulation (EC) No. 1272/2008
 - 2.3. In accordance with Annex 1 (1.1.1) of Regulation (EC) No. 1272/2008
 - 2.4. In accordance with Annex XI (1.2) of Regulation (EC) No. 1907/2006
3. Training Advice
 - 3.1. Handle this product using standard precautionary laboratory practices, with effective engineering conditions and while wearing the proper protective equipment described in this safety data sheet
 - 3.2. Only use this product for research purposes and never as a diagnostic tool

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Date Revised: 29, January 2019

Revision Number: C

1. Removed respirator mention
2. Updated UK address information.

END OF SDS