

SAFETY DATA SHEET

Muse Multicaspase Kit

Section 1. Identification

Product identifier : Muse Multicaspase Kit

Product code :

Other means of identification :

4300-0160	Anhydrous DMSO 0.5mL Vial
4700-1510	Muse Caspase 7-AAD (100 tests)
4700-1535	Muse 10X Caspase Reagent (100 tests)
4700-1530	Muse Multicaspase Reagent (100 tests)
4700-1515	1X PBS

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For Professional use only. Use as per Product Insert.

Supplier/Manufacturer : Luminex Corporation
12212 Technology Blvd
Austin, Texas 78727
Tel: 1-512-381-4397
Toll free: 1-877-785-2323 (US and Canada)
Fax: 1-512-219-5114
<http://www.luminexcorp.com>

e-mail address of person responsible for this SDS : Support@Luminexcorp.com

Emergency telephone number (with hours of operation) : 1-512-381-4397
24/7

Section 2. Hazard(s) identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4

GHS label elements for the kit

Signal word : **WARNING**

Hazard statements : **H227 - Combustible liquid.**

Precautionary statements

Prevention : P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from flames and hot surfaces. - No smoking.

Response : Not applicable.

Storage : P403 - Store in a well-ventilated place.
P235 - Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

GHS label elements by compartment



Section 2. Hazard(s) identification

Signal word	: 4300-0160	WARNING
	4700-1510	No signal word.
	4700-1535	No signal word.
	4700-1530	No signal word.
	4700-1515	No signal word.
Hazard statements	: 4300-0160	H227 - Combustible liquid.
	4700-1510	No known significant effects or critical hazards.
	4700-1535	No known significant effects or critical hazards.
	4700-1530	No known significant effects or critical hazards.
	4700-1515	No known significant effects or critical hazards.
Precautionary statements		
Prevention	: 4300-0160	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from flames and hot surfaces. - No smoking.
	4700-1510	Not applicable.
	4700-1535	Not applicable.
	4700-1530	Not applicable.
	4700-1515	Not applicable.
Response	: 4300-0160	Not applicable.
	4700-1510	Not applicable.
	4700-1535	Not applicable.
	4700-1530	Not applicable.
	4700-1515	Not applicable.
Storage	: 4300-0160	P403 - Store in a well-ventilated place. P235 - Keep cool.
	4700-1510	Not applicable.
	4700-1535	Not applicable.
	4700-1530	Not applicable.
	4700-1515	Not applicable.
Disposal	: 4300-0160	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	4700-1510	Not applicable.
	4700-1535	Not applicable.
	4700-1530	Not applicable.
	4700-1515	Not applicable.
Supplemental label elements	: Not applicable.	
Other hazards which do not result in classification	: None known.	

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
4300-0160 Dimethyl sulfoxide	80 - 100	67-68-5
4700-1510 Dimethyl sulfoxide	≥1 - ≤3	67-68-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Composition and ingredient information

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Not applicable.
Inhalation	: Not applicable.
Skin contact	: Not applicable.
Ingestion	: Not applicable.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: 4300-0160	No known significant effects or critical hazards.
	4700-1510	No known significant effects or critical hazards.
	4700-1535	No known significant effects or critical hazards.
	4700-1530	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
	4700-1515	No known significant effects or critical hazards.
Inhalation	: 4300-0160	No known significant effects or critical hazards.
	4700-1510	No known significant effects or critical hazards.
	4700-1535	No known significant effects or critical hazards.
	4700-1530	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
	4700-1515	No known significant effects or critical hazards.
Skin contact	: 4300-0160	No known significant effects or critical hazards.
	4700-1510	No known significant effects or critical hazards.
	4700-1535	No known significant effects or critical hazards.
	4700-1530	No known significant effects or critical hazards.
	4700-1515	No known significant effects or critical hazards.
Ingestion	: 4300-0160	No known significant effects or critical hazards.
	4700-1510	No known significant effects or critical hazards.
	4700-1535	No known significant effects or critical hazards.
	4700-1530	No known significant effects or critical hazards.
	4700-1515	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: None identified.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No special measures required.

See toxicological information (Section 11)



Section 5. Firefighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : No special requirements.

Methods and material for containment and cleaning up

Spill : Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store at 2°C to 8°C.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4300-0160 Dimethyl sulfoxide	DFG MAC-values list (Germany, 7/2018). Absorbed through skin. PEAK: 320 mg/m ³ , 4 times per shift, 15 minutes. TWA: 160 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours.
4700-1510 Dimethyl sulfoxide	DFG MAC-values list (Germany, 7/2018). Absorbed through skin. PEAK: 320 mg/m ³ , 4 times per shift, 15 minutes. TWA: 160 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours.

Appropriate engineering controls : No special ventilation requirements.

Environmental exposure controls : No special measures required.

Individual protection measures

Hygiene measures : Follow good industrial hygiene practice.

Eye/face protection : Not required under normal conditions of use.

Skin protection

Hand protection : Not required under normal conditions of use.

Body protection : Not required under normal conditions of use.

Other skin protection : Not required under normal conditions of use.

Respiratory protection : Not required under normal conditions of use.

Section 9. Physical and chemical properties

Appearance

Physical state	4300-0160	Liquid. [Clear.]
	4700-1510	Liquid.
	4700-1535	Liquid.
	4700-1530	Solid. [Dust. Powder.]
	4700-1515	Liquid. [Clear.]
Colour	4300-0160	Colourless.
	4700-1510	Pink. Red.
	4700-1535	Colourless.
	4700-1530	Not available.
	4700-1515	Colourless.
Odour	4300-0160	Odourless.
	4700-1510	Odourless.
	4700-1535	No characteristic odour.
	4700-1530	No characteristic odour.
	4700-1515	Odourless.
Odour threshold	: Not available.	

Section 9. Physical and chemical properties

pH	: 4300-0160	Not available.
	4700-1510	Not available.
	4700-1535	6.7 to 7.1 [Conc. (% w/w): 100%]
	4700-1530	Not available.
	4700-1515	Not available.
Melting point	: Not available.	
Initial boiling point and boiling range	: 4300-0160	189°C
	4700-1510	Not available.
	4700-1535	<100°C
	4700-1530	Not available.
	4700-1515	100°C
Flash point	: 4300-0160	Closed cup: 87°C
	4700-1510	Not available.
	4700-1535	Not available.
	4700-1530	Not available.
	4700-1515	Not available.
Evaporation rate	: Not available.	
Flammability (solid, gas)	: Not available.	
Lower and upper explosive (flammable) limits	: Not available.	
Vapour pressure	: 4300-0160	0.08 kPa [room temperature]
	4700-1510	Not available.
	4700-1535	Not available.
	4700-1530	Not available.
	4700-1515	Not available.
Vapour density	: 4300-0160	2.7 [Air = 1]
	4700-1510	Not available.
	4700-1535	Not available.
	4700-1530	Not available.
	4700-1515	Not available.
Relative density	: 4300-0160	Not available.
	4700-1510	Not available.
	4700-1535	Not available.
	4700-1530	Not available.
	4700-1515	Not available.
Solubility	: 4300-0160	Not available.
	4700-1510	Easily soluble in the following materials: cold water and hot water.
	4700-1535	Easily soluble in the following materials: cold water and hot water.
	4700-1530	Insoluble in the following materials: cold water and hot water.
	4700-1515	Easily soluble in the following materials: cold water and hot water.
Solubility in water	: Not available.	
Partition coefficient: n-octanol/water	: Not available.	
Auto-ignition temperature	: Not available.	
Decomposition temperature	: Not available.	

Section 9. Physical and chemical properties

Viscosity	: 4300-0160	Kinematic (40°C): 0.0214 cm ² /s
	4700-1510	Not available.
	4700-1535	Not available.
	4700-1530	Not available.
	4700-1515	Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability	: 4300-0160	The product is stable.
	4700-1510	The product is stable.
	4700-1535	The product is stable.
	4700-1530	The product is stable.
	4700-1515	The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid	: 4300-0160	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
	4700-1510	No specific data.
	4700-1535	No specific data.
	4700-1530	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
	4700-1515	No specific data.

Incompatible materials	: 4300-0160	Reactive or incompatible with the following materials: oxidising materials.
	4700-1510	Reactive or incompatible with the following materials: oxidising materials.
	4700-1535	Reactive or incompatible with the following materials: oxidising materials, metals and acids.
	4700-1530	Reactive or incompatible with the following materials: oxidising materials.
	4700-1515	Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4300-0160 Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
4700-1510 Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitisation

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Section 11. Toxicological information

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
4300-0160 Dimethyl sulfoxide	Acute EC50 18299 µg/L Marine water Acute LC50 37.437 mg/L Marine water Acute LC50 25000 ppm Fresh water Acute LC50 34000000 µg/L Fresh water Chronic NOEC 3323 µg/L Marine water Chronic NOEC 100 ul/L Fresh water	Algae - Nitzschia pungens Crustaceans - Artemia sp. Daphnia - Daphnia magna - Neonate Fish - Pimephales promelas Algae - Nitzschia pungens Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 48 hours 48 hours 96 hours 96 hours 21 days
4700-1510 Dimethyl sulfoxide	Acute EC50 18299 µg/L Marine water Acute LC50 37.437 mg/L Marine water Acute LC50 25000 ppm Fresh water Acute LC50 34000000 µg/L Fresh water Chronic NOEC 3323 µg/L Marine water Chronic NOEC 100 ul/L Fresh water	Algae - Nitzschia pungens Crustaceans - Artemia sp. Daphnia - Daphnia magna - Neonate Fish - Pimephales promelas Algae - Nitzschia pungens Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 48 hours 48 hours 96 hours 96 hours 21 days

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4300-0160 Dimethyl sulfoxide	-1.35	3.16	low
4700-1510 Dimethyl sulfoxide	-1.35	3.16	low



Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. No specific disposal consideration.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : Not determined.

Section 16. Any other relevant information

Procedure used to derive the classification

Classification	Justification
4300-0160 FLAMMABLE LIQUIDS - Category 4	On basis of test data

History

Section 16. Any other relevant information

Date of issue	: 15/07/2019
Date of previous issue	: Not applicable.
Version	: 1
Prepared by	: KMK Regulatory Services Inc.
Key to abbreviations	: ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

