

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifiers

Product name : Thapsigargin solution

Relevant identified uses of the substance or mixture

For research use only. Not for use in diagnostic procedures.

Details of the supplier of the safety data sheet

Montana Molecular
366 Gallatin Park Drive, Unit A
Bozeman, MT 59715

Emergency telephone

Emergency Phone #. In case of emergency contact CHEMTREC. 24 Hours/day; 7 Days/week

CHEMTREC (USA): 800-424-9300

CHEMTREC (International) +1-703-527-3887

SECTION 2: Hazards identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids : Category 4

Respiratory sensitization : Category 1

Other hazards

Rapidly absorbed through skin.

GHS label elements

Pictogram



Signal word

Danger

Hazard statements

H227 Combustible liquid.

Precautionary Statements

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing mist or vapours.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P285 In case of inadequate ventilation wear respiratory protection.

Response

P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

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

Disposal

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

SECTION 3: Composition/information on ingredients

Mixtures

| Chemical name | CAS number | Concentration |
|--------------------|------------|---------------|
| Dimethyl sulfoxide | 67-68-5 | >99.9% |
| Thapsigargin | 67526-95-8 | 0.07% (1 mM) |

SECTION 4: First aid measures

Description of first-aid measures

General advice

Note to physician: treat symptomatically

Inhalation

Move to fresh air. Consult doctor if feeling unwell.

Skin contact

Remove contaminated clothing and shoes. Wash skin thoroughly with plenty of water. If irritation develops, seek medical advice.

Eye contact

Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Check and remove contact lenses.

If swallowed

Make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed

No further information available

Indication of any immediate medical attention and special treatment needed

No further information available

SECTION 5: Firefighting measures**Extinguishing media****Suitable extinguishing media**

Foam

Carbon dioxide (CO₂)

Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products

Carbon oxides

Sulphur oxides

Further information

Remove container from danger zone and cool with water.

Suppress (knock down) gases/vapours/mists with a water spray jet.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment and precautions for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

SECTION 6: Accidental release measures**Methods and materials for containment and cleaning up**

Isolate area around spill. Put on suitable protective clothing and equipment as specified by site spill control procedures. Absorb the liquid with suitable material and clean affected area with soap and water.

Dispose of spill materials according to the applicable federal, state, or local regulations. Do not let product enter drains.

SECTION 7: Handling and storage**Advice on protection from fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition.

Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed

Storage class

10, Combustible liquids

Recommended storage conditions

-20°C

Further information for storage conditions

Hygroscopic. Store under inert gas.

SECTION 8: Exposure controls/personal protection**Control parameters****Ingredients with workplace control parameters**

| Components | CAS No. | Value type (form of exposure) | Control parameters/ permissible concentration | Basis |
|--------------------|---------|-------------------------------|---|----------|
| Dimethyl sulfoxide | 67-68-5 | TWA | 250 ppm | US WHEEL |

Engineering measures

No data available.

Personal protective equipment**Respiratory protection**

Required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended filter type

Filter type ABEK

Eye/face protection

Safety glasses

Skin protection

Required

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties**

| | |
|----------------|-------------------|
| Appearance | Form: liquid |
| Color | Clear |
| Odor | Odorless |
| Odor threshold | No data available |

| | |
|--|-----------------------------|
| pH | Not applicable |
| Melting point/freezing point | No data available |
| Initial boiling point and boiling range | No data available |
| Flash point | 189 °F / 87 °C (1,013 hPa) |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | No data available |
| Vapor pressure | No data available |
| Vapor density | No data available |
| Density | No data available |
| Relative density | No data available |
| Solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Autoignition temperature | No data available |
| Upper explosion limit | No data available |
| Lower explosion limit | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | Not classified as explosive |
| Oxidizing properties | none |

SECTION 10: Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions

No data available

Conditions to avoid

Strong heating

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

In the event of a fire, see section 5.

SECTION 11: Toxicological information

Acute toxicity

Skin contact

No data available

Eye contact

No data available

Inhalation

No data available

Ingestion

No data available

Additional toxicological information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Carcinogenic categories**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP

No ingredient 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 on OSHA's list of regulated carcinogens.

Specific organs

Eyes: Eye disease - Based on Human Evidence

SECTION 12: Ecological information**Ecotoxicity****Components:****Dimethyl sulphoxide:**

Toxicity to fish :

LC50 (Danio rerio (zebra fish)): > 25,000 mg/l

End point: mortality

Exposure time: 96 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 203

GLP: yes

Toxicity to daphnia and other aquatic invertebrates :

EC50 (Daphnia magna (Water flea)): 24,600 mg/l

Exposure time: 48 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants :

ErC50 (Pseudokirchneriella subcapitata (green algae)): 17,000 mg/l

Exposure time: 72 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 201

GLP: yes

Toxicity to Microorganisms

EC50 (activated sludge): 10 - 100 mg/l

Exposure time: 30 min

Method: ISO 8192

Thapsigargin:

No data available

Persistence and degradability

Components:

Dimethyl sulphoxide:

Biodegradability :

aerobic

Concentration: 2 mg/l

Result: Not readily biodegradable.

Biodegradation: 31 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

GLP: yes

Stability in water :

Degradation half life: 0.12 - 1.2 h (30 °C) pH: 7

Remarks: Hydrolyses readily.

Thapsigargin:

Biodegradability : No data available

Bioaccumulative potential

Components:

Dimethyl sulphoxide:

Partition coefficient: n- octanol/water : log Pow: -1.35 (68 °F / 20 °C)

Remarks: Bioaccumulation is not expected.

Thapsigargin:

Bioaccumulation : Remarks: No data available

Mobility in soil

Components:

Thapsigargin:

Stability in soil : No data available

Other adverse effects

Components:

Thapsigargin:

Additional ecological Information : No data available

SECTION 13: Disposal considerations

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

UN/NA Number:

None

UN/NA proper shipping name:

Not applicable

IATA:

Not regulated

IMDG:

Not regulated

National Regulations

49 CFR Road

| | |
|--------------------------|--|
| UN/ID/NA number | : NA 1993 |
| Proper shipping name | : Combustible liquid, n.o.s. (dimethyl sulphoxide) |
| Class | : CBL |
| Packing group | : III |
| Labels | : None |
| ERG Code | : 128 |
| Marine pollutant | : no |
| Poison Inhalation Hazard | : No |

SECTION 15: Regulatory information

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 hazards

Fire Hazard

Chronic Health Hazard

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

TSCA list

| CAS number | Name | TSCA status |
|------------|--------------------|------------------|
| 67-68-5 | Dimethyl sulfoxide | Active, no flags |

SECTION 16: Other information**Disclaimer**

The information is believed to be correct to the best of our knowledge at the date published. The document is designed solely as a guideline. It does not represent any guarantee of the properties of the product. Montana Molecular, LLC and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

| Author | Approver | Date | Version |
|---------------------|--------------|------------|---------|
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