Safety Data Sheet: *Standard Solution of HT2 Toxin in Acetonitrile*

FermaSol

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1. Identification of the solution and the Manufacturer

1.1. Product identifiers

Product name	*Standard Solution of HT2 Toxin in Acetonitrile*		
Product Code	*SSHT*	*Version Date*	*23 July, 2024*
	Ingredient name	*Ingredient CAS RN*	*Ingredient concentration*
Toxin	*HT2 Toxin*	*26934-87-2*	*100 ppm*
Solvent	*Acetonitrile*	*75-05-8*	*<100%*

1.2. Intended uses of the solution and uses advised against

1.2.1. Intended use:	1.2.2. Uses advised against:
Reference material *Research and development.* *Laboratory reagent.*	*Not a drug,* *Not a food additive* *Not to be used in humans or animals.*

1.3. Contacts

1.3.1. Details of the supplier of the SDS

FERMENTEK ltd *4 Yatziv street, POB 47120* *Jerusalem 97800,* *Israel*	*Tel: +972 2 5853953* *Fax: +972 2 5853943* *eMail: Fermentek@Fermentek.com* *Safety@Fermentek.com* *Website: Fermentek.com*

This company is the manufacturer of the product and the supplier of the safety data sheet

1.3.2. Emergency Telephone number

For chemical emergency spill, leak, fire, exposure, or accident calls CHEMTREC day or night:
Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 703-527-3887

2. Hazards' identification

Emergency overview

Appearance: *Colorless liquid with a sweet ethereal odor, packed in amber glass vials, 1 or 5 mililiter per vial.*

Immediate effects: *Irritation of the nose and throat with sneezing, sore throat or runny nose.*

Potential health effects

Primary Routes of entry: Inhalation, skin contact, eye contact.

Signs and Symptoms of Overexposure: *Chest tightness or main, flushing of the face, central nervous system depression with dizziness, confusion, uncoordinated, drowsiness or unconsciousness; convulsions; impaired blood clotting with increased tendency toward bruising and bleeding; low blood pressure; increased heart rate; abnormal kidney function with altered urinalysis; and abnormal liver function with altered enzyme levels I blood. The on-set of symptoms may be delayed. Gross overexposure may cause fatality.*

Eyes: Eye irritation with tearing, pain or blurred vision.

Skin: Slight irritation with itching, redness or swelling.

Ingestion: Nausea or vomiting.

Inhalation: Irritation of the nose and throat with sneezing, sore throat or runny nose.

2.1. Classification of the Mixture/Solution

2.1.1. GHS Classification: According to EU Reg. 1272/2008 and US OSHA 1910.1200)

Comment: This product is a vial containing 1 or 5 cc of solution of a negligible amount of toxin, dissolved in Acetonitrile.

Flammable liquids	*Category 2*	*H225*	*Highly flammable liquid and vapour*
Acute toxicity, Oral	*Category 4*	*H302*	*Harmful if swallowed.*
Acute toxicity, Dermal	*Category 4*	*H312*	*Harmful if in contact with skin.*
Acute toxicity, Inhalation	*Category 4*	*H332*	*Harmful if inhaled.*
Eye irritation	*Category 2*	*H319*	*Causes serious eye irritation*

2.2. GHS Label elements, including precautionary statements

2.2.1. Pictogram: {  } Signal word: {DANGER}

2.2.2. Hazard Statements

H225	*Highly flammable liquid and vapour*
H302+H312+H332	*Harmful if swallowed, in contact with skin or if inhaled.*
H319	*Causes serious eye irritation.*

2.2.3. GHS Precautionary Statements

P201	*Obtain special instructions before use.*
P202	*Do not handle until all safety precautions have been read and understood.*
P210	*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.*
P280	*Wear {protective gloves/protective clothing/eye protection/face protection}.*
P262	*Do not get in eyes, on skin, or on clothing*
P264	*Wash {hands} thoroughly after handling.*
P270	*Do not eat, drink or smoke when using this product.*

2.2.4. GHS Response Phrases:

P308+P313 *P301+P312+P330*	*IF EXPOSED OR CONCERNED: Get medical advice/attention* *IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.*
P302+P352+P312	*IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.*
P301+P310+P330	*IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.*
P304+P340+P312	*IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.*
P318	*IF EXPOSED OR CONCERNED, get medical advice*

3. Composition/information on ingredients

Mixture / solution	*Solvent*	*Toxin*
Substance Name:	*Acetonitrile*	*Standard Solution of HT2 Toxin in Acetonitrile*
Concentration	*<100%*	*100 ppm*
CAS Registry#:	*75-05-8*	*26934-87-2*
Molecular Formula	*C_2H_3N*	*Negligible, no report needed*
Molecular Weight	*41.05*	*Negligible, no report needed*
Classification	*Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2; H225, H302, H332, H312, H319*	*Negligible, no report needed*
	REACH:registered	*Negligible, no report needed*

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4. First Aid Measures

4.1. Description of First Aid Measures

General advice:	*Consult a physician. Show this safety data sheet to the doctor in attendance.*
Inhalation:	*If inhalled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.*
Skin Contact:	*Skin Contact: In case of contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. To prevent cross-contamination, properly dispose of contaminated clothing and shoes with minimal handling. Avoid contact*
Eye(s) contact:	*Flush eyes with water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.*
Ingestion:	*Ingestion: If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.*

4.2. Most important symptoms and effects, both acute and delayed

General symptoms	*The onset of symptoms is generally delayed pending conversion to cyanide. Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death*

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	*Treatment: Although the metabolic fate of this compound is not completely known, some nitriles are partially metabolized to cyanide. Symptoms may be delayed. If overexposed, treatment for cyanides may be indicated. Following exposure, the patient should be observed for 24-48 hours or more for symptoms of cyanide intoxication.* *Treatment for cyanide intoxication:* *1. If conscious but symptoms (nausea, difficult breathing, dizziness, etc.) are evident, give oxygen.*

2. If consciousness is impaired (non- responsiveness, slurred speech, confusion, drowsiness) or the patient is unconscious but breathing, give oxygen and amyl nitrite by means of a respirator. To give amyl nitrite, break an ampoule in a gauze pad and insert into lip of mask for 15 seconds, then take away for 15 seconds. Repeat 5-6 times. If necessary, use a fresh ampoule every 3 minutes until the patient regains

consciousness (usually 1-4 ampoules). Administer oxygen continuously. Guard against the ampoule entering the patient's mouth.

3. If not breathing, give oxygen and amyl nitrite immediately by means of a positive pressure respirator (artificial respiration). See 2 above, and continue to give oxygen simultaneously to aid recovery. If massive exposure occurred, consider keeping the first one or two ampoules in the lip of the mask continuously. Guard against the ampoule entering the patient's mouth.

Medical treatment: Do not over-react. Although prompt action is essential when symptoms of poisoning occur, a lucid conscious person who can communicate may not have significant cyanide poisoning and medical treatment may not be necessary.

"Treat what you see" is a good rule of thumb. Mildly symptomatic patients who remain alert may be managed by supportive care only.

First aid of oxygen and amyl nitrate may be the only treatment needed. However, in severe intoxication, medical treatment of I.V. sodium nitrite and sodium thiosulfate may be needed.

Medical treatment procedure:

Intravenous antidote: Sodium nitrite: Adult – 10 ml of 3% solution (300mg)

Draw solution from ampoule and inject slowly over 4-5 minutes (2 to 2.5ml/minute). As soon as practical, monitor blood pressure and continue checking pulse. Slow the rate of injection if hypotension (low blood pressure) occurs.

1. Sodium thiosulfate: Adult – 50 ml of 25% solution (12.5 grams).

Follow sodium nitrite with sodium thiosulfate injected at a rate of 2.3 ml/minute (10-20 minutes).

The total time for injection of these initial doses of both components at the recommended rates is lengthy, approximately 20-25 minutes.

Consider the body weight and condition of the patient when treating with sodium nitrite.

Both amyl nitrite and sodium nitrite produce methemoglobin, which reduces the oxygen carrying capacity of the blood. Methemoglobinemia is potentially harmful when hemoglobin levels exceed 20-30%.

If symptoms persist or recur after the initial treatment, repeat the antidote at one half the original dose and one hour after the original administration. Monitor methemoglobin levels when practical in every patient treated with the intravenous antidote.

Avoid over-treatment:

The above sodium nitrite injection is about one-third the lethal dose. Care should be taken to avoid excessive use. It is NOT essential that full quantities of antidote be given just because treatment was started. Should injection be stopped for any reason, keep track of the amount administered in case treatment needs to be restarted.

	Medical Conditions generally Aggravated by Exposure: Increased susceptibility to the effects of Acetonitrile may be observed in persons with the pre-existing disease of the central nervous system, liver, kidneys, lungs, and cardiovascular system.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	*Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.*
Unsuitable extinguishing media	*None known*

5.2. Other information

Hazardous combustion products	*Carbon oxides, Nitrogen oxides (NOx)*
Advice for firefighters	*Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit.*

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	*Use personal protective equipment as required. Keep people away from and upwind of spill/leak.*

6.2. Environmental precautions

Environmental precautions	*Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.*

6.3. Methods and material for containment and cleaning up

Methods for containment:	*Prevent further leakage or spillage if safe to do so. Cover the powder spill wa ith plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.*
Methods for cleaning up:	*Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Cover liquid spill with sand, earth or other non-combustible absorbent material (e.g., sand, earth, diatomaceous earth, and vermiculite). Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal.*

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:	*Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.*

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions:	*Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at -20 °C.*
Suitable packaging	*Must only be kept in original packaging.*
Incompatible materials:	*None known based on information available.*

8. Exposure Controls/Personal Protection

8.1. Control parameters

Control parameters	*Components with workplace control parameters*

8.2. Exposure controls

Appropriate engineering controls	*Showers, Eyewash stations, Ventilation systems* *Avoid contact with skin, eyes, and clothing.* *Wash hands before breaks and immediately after handling the product.* *Use fume-hood for routine work.*

8.3. Personal protective equipment

[PPE=Personal Protection Equipment]	
PPE: Respiratory protection	*Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).*
PPE: Hand Protection:	*Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands*
PPE: Eye Protection:	*Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)*
PPE: Skin and Body 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. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.*

9. Physical and chemical properties

9.1. Physical/chemical properties

Physical State at room temperature	*Clear liquid*
Smell	*Sweet ethereal odor*
Color	*Colorless*
No further safety relevant data are available	

10. Stability and reactivity

Reactivity:	*No information available.*
Chemical stability:	*Stable under normal conditions.*
Conditions to avoid	*Heat, flames and sparks. Sunlight.*
Incompatible materials	*Strong reducers and exidizers*
Possibility of Hazardous Reactions	*None under normal processing*
Hazardous combustion products	*See section 5*

11. Toxicological information

11.1. Information on toxicological effects

To the best of our knowledge, the toxicological effects of this product have not been thoroughly studied yet.

11.1.1. Acute Toxicity

Acute toxicity:	*Oral, rat; LD50 =-6.5 gram/kg* *Inhalation, LC50 = Rat - 4 h – 17000 ppm*
Skin corrosion/irritation:	*LD50 Dermal - Rabbit - 1gram/kg*
Serious eye damage/eye irritation:	*Positive*
Respiratory or skin sensitization/corrosion:	*Negative*

11.1.2. Chronic toxicity

Chronic toxicity	*No data available*

11.1.3. CRM (Carcinogene, Mutagene, Reproductive hazards)

Germ cell mutagenicity:	*Negative.*
Carcinogenicity:	*Not classifiable as a human carcinogen* *There is an absence of human evidence and the animal evidence is equivocal evidence of carcinogenicity in animal studies.*
Reproductive toxicity	*No data available*

11.2. Additional information

General symptoms	*See section 2*

12. Ecological Information

Eco-Toxicity	*No data available*
Other adverse effects	*No data available*

13. Disposal Considerations

13.1. Waste treatment methods

Waste Disposal	*Dispose of in accordance with local regulations*
Contaminated packaging	*Dispose of as unused product*

14. Transport information

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14.1. UN number, Proper Shipping Name, Transport Hazard Class, packing group

	US DOT	ADR/RID	IATA	IMDG
UN Number & UN proper shipping name	*UN 1648 Acetonitrile (**Standard Solution of HT2 Toxin in** Acetonitrile)*			
Transport Hazard Class & Packing Group	*Class 3 pg II*			
Additional information				*Not marine pollutant*
De Minimis exemption	*When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore, the package does not have to be labeled as Dangerous Goods/Excepted Quantity.*			

15. Regulatory information

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15.1. Safety, health, and environmental regulations/legislation

USA EPA / TSCA	*This product is not listed on the USA EPA TSCA*
EU ECHA Status	*This product is NOT REGISTERED with the EU ECHA as of 07.2024* *REACH: Neither Registered nor PreRegistered* *ANNEX III: Not Listed*

16. Other information

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16.1. Department issuing this SDS

Quality systems and regulatory affairs

16.2. General 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 here is designed only as 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 proces, unless specified in the text.

16.3. The users'/employers' responsibility:

A risk assessment should be performed by the employer/user prior to the use of this product.
All recommendations included in this document, are advisory in nature.
The type of protective equipment must be selected based on the amount and concentration of all dangerous materials being used in the workplace.

16.4. No-Copyright statement

Fermentek does not claim © copyright on this document.
Fermentek believes that no one can claim copyright on an SDS.
This sort of document is but a compendium of common knowledge and published facts.
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16.5. Abbreviations and acronyms:

Acute Tox.:	*Acute toxicity*	*LD50:*	*Lethal dose, Median*
CAS:	*Chemical Abstracts Service*	*NFPA:*	*National Fire Protection Association USA*
DOT:	*US Department of Transportation*	*NIOSH:*	*National Institute for Occupational Safety*
EINECS:	*European Inventory of Existing Commercial Chemical Substances*	*OSHA:*	*Occupational Safety & Health*
Eye Dam.:	*Serious eye damage/eye irritation*	*PBT:*	*Persistent, Bioaccumulative, and Toxic*
HSDB	*Hazardous Substances Data Bank*	*PEL:*	*Permissible Exposure Limit*
HMIS:	*Hazardous Materials Identification System (USA)*	*REL:*	*Recommended Exposure Limit*
IATA:	*International Air Transport Association*	*Repr.:*	*Reproductive toxicity*
IMDG:	*International Maritime Code for Dangerous Goods*	*RTECS:*	*Registry of Toxic Effects of Chemical Substances*
LC50:	*Lethal concentration, Median*		
LD50:	*Lethal dose median*	*Skin Irrit:*	*Skin corrosion/irritation*
		TDL0	*Toxic dose, least published*

NDG	*Not dangerous goods (for transport)*		

16.6. End of SDS