

**NIPPON KAYAKU**  
Safety Data Sheet (EVISECT S)

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**1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY**

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Product Name:	EVISECT S
Synonyms:	EVISECT WP, EVISECT SP Thiocyclam WP, Thiocyclam SP SAN 155I WP, SAN 155I SP
General Use:	Insecticide
Manufacturer:	NIPPON KAYAKU CO., LTD. Agrochemicals Division 1-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan Phone +81-3-6731-5325 FAX +81-50-3730-8045 E-mail: agro.info@nipponkayaku.co.jp
Emergency Telephone No.:	+81-3-6731-5323 or call Local Poison Center

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**2. HAZARDS IDENTIFICATION**

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GHS classification:	
Health hazard:	Acute toxicity – oral Category 3 Acute toxicity – dermal Category 5 Acute toxicity – inhalation (mist) Category 4 Skin corrosion / irritation Category 3 Eye damage / irritation Not classified Sensitization – skin Not classified Mutagenicity Not classified Carcinogenicity Not classified Reproductive toxicity Not classified Specific target organ toxicity (single exposure) Category 1 (Nervous system) Specific target organ toxicity (repeated exposure) Category 2 (Nervous system)
Environmental hazard:	Hazardous to the aquatic environment – acute hazard Category 1 Hazardous to the aquatic environment – long-term hazard Category 2

Otherwise listed above, no end-point on this product classified hazardous based on the GHS criteria or no information available for classification.

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GHS labeling:

Symbol:



Signal word:

Hazard statement:

Danger

Toxic if swallowed.

May be harmful in contact with skin.

Harmful if inhaled.

May cause damage to nervous system.

May cause damage to nervous system through prolonged or repeated exposure.

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid breathing dust / mist / spray.

Handle only outdoors or in a well-ventilated area.

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

Avoid release to the environment.

Response:

If swallowed:

Immediately call a poison center or doctor / physician.  
Rinse mouth.

If on skin:

Call a poison center or doctor / physician if you feel unwell.  
If skin irritation occurs, get medical advice / attention.

If inhaled:

Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a poison center or doctor / physician if you feel unwell.

If exposed or concerned:

Call a poison center or doctor / physician.  
Get medical advice/attention if you feel unwell.

In case of accidental release / spillage:

Collect spillage.

Storage:

Store locked up in a well-ventilated place. Keep cool.

Disposal:

Dispose of contents / container in accordance with local / regional / national / international regulations.

Other hazards which do not result in classification:

Dust explosion hazard should be concerned during manufacturing process of this product.

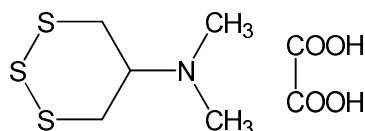
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**3. COMPOSITION, INFORMATION ON INGREDIENTS**

This product is a mixture (agricultural chemical formulated product)

Chemical Name of active substance, thiocyclam hydrogenoxalate:

5-diethylamino-1,2,3-trithian hydrogen oxalate  
 IUPAC name: *N,N*-dimethyl-1,2,3-trithian-5-ylamine hydrogen oxalate  
 Chemical formula:  $C_7H_{13}NO_4S_3$



Composition:

Components	CAS RN	EC No.	Content
Thiocyclam hydrogenoxalate	31895-22-4	250-859-2	50%
Amorphous silicon dioxide	112926-00-8	231-545-4	14%
Others (detailed composition is a trade secret otherwise listed below)			36%
Xylene	1330-20-7	215-535-7	1 – 2%
Ethylbenzene	100-41-4	202-849-4	2 – 1%
(Maximum subtotal of xylene and ethylbenzene is 3%)			

Hazardous substance(s): Thiocyclam hydrogenoxalate

Hazardous components otherwise main component:

xylene and ethylbenzene

**4. FIRST AID MEASURES**

Symptoms of poisoning:	Intoxication symptoms known, e.g., vomiting, convulsion, tremor, salivation, and/or dyspnea.
Ingestion:	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Inhalation:	Removal of exposed individual from area to fresh air immediately. Call a physician immediately.
Eye contact:	Flush eyes with plenty of water for at least 15 minutes and get medical attention. Call a physician immediately.
Skin contact:	Remove contaminated clothing and wash affected areas with soap and water. Call a physician immediately.
Note to physicians:	No specific antidote is known. Apply symptomatic therapy.

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## 5. FIRE FIGHTING MEASURES

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Suitable extinguishing media: Dry powder, carbon dioxide, sand or foam.

Special hazard arising from the chemical:

May be produced toxic gases of oxides of sulfur, nitrogen, or carbon on combustion.

Wear full body protective clothing with self-contained breathing apparatus to avoid respiration of fume or smoke when fire fighting.

Special protective action for fire-fighters:

Wear full body protective clothing with self-contained breathing apparatus.

Remain upwind.

Remove or secure all ignition sources.

Small fire in the incipient stage may typically be extinguished using dry powder, carbon dioxide or dry sand.

Major fire may be extinguished by be extinguished by fire fighting foam to shut off the air (oxygen) supply.

Do not use direct jet of water.

Move container to safe place if possible.

Use water spray to cool containers exposed to fire.

Avoid contaminated extinguishing media into aquatic environment.

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## 6. ACCIDENTAL RELEASE MEASURES

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Personal precautions, protective equipment and emergency procedures:

For personal protective equipment, refer to 8. EXPOSURE CONTROLS, PERSONAL PROTECTION.

Keep all bystanders away.

Remove all sources of ignition.

Environmental precautions: Do not contaminate waters and sewers.

Method for cleaning up

For small amount of spillage: Absorb spillage with absorptive material such as absorptive cloth, sand or etc. and place it into specially marked, tightly closing containers.

For large amount of spillage: Control runoff with absorptive material and cover up with foam extinguisher, then place it into specially marked, tightly closing containers.

Wipe contaminant by cloth and place into same containers.

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**7. HANDLING AND STORAGE**

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- Precautions for safe handling: Keep away from flames, spark and/or hot surfaces.  
Keep all bystanders away.  
Handle in a well-ventilated area.  
Avoid contact on skin, eyes or cloths.  
Avoid breathing vapor or mist.  
Hand wash stand and eyewash station recommended at the resting- station.  
Wash hands after handling.  
Do not eat, drink or smoke while handling.  
Wear the appropriate protective gear, e.g., protective clothing, glasses and gloves.  
Do not subject to rough handling such as tumbling dropping, shock or friction.  
Use spark-proof tools and explosion-proof equipment.
- Conditions for safe storage: Protect from light.  
Store locked up.  
Store in a well-ventilated place.  
Keep cool.  
Keep container tightly closed.  
Do not store with feed or foodstuffs.
- Specific designs for storage vessels:  
Store in an original container.
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**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

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## Control parameters

## National exposure standards:

- Thiocyclam: No exposure standard allocated in Japan.  
Xylene: 50 ppm (as mixture of isomers)  
Ethylbenzene: No exposure standard allocated in Japan.

## Occupational exposure limits recommendation from JSOH

- Thiocyclam: Not allocated  
Xylene: 50 ppm (217 mg/m<sup>3</sup>)  
Ethylbenzene: 50 ppm (217 mg/m<sup>3</sup>)

## Occupational exposure limits recommendation from ACGIH

- Thiocyclam: Not allocated  
Xylene: TLV-TWA, 100 ppm (434 mg/m<sup>3</sup>); TLV-STEL, 150 ppm (651 mg/m<sup>3</sup>)  
Ethylbenzene: TLV-TWA, 100 ppm (434 mg/m<sup>3</sup>); TLV-STEL, 125 ppm (543 mg/m<sup>3</sup>)

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## Appropriate engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentration below the permissible exposure limits. Places storing or handling this material should be equipped with an eyewash facility and a safety shower.

## Personal protective equipment:

Breathing protection: Wear an anti-dust mask, an air line respirators or a self-contained breathing apparatus.

Eye protection: Wear protective goggles.

Hand protection: Wear chemical-resistant gloves

Body protection: Wear long sleeved protective clothing and chemical-resistant boots.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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## Physical state

Appearance: Solid (fine powder)

Color: White to pale yellow

Odor: Slight sulfur-like odor

pH:  $2.5 \pm 1.5$  (1% aqueous solution)

Melting point: 132°C (thiocyclam hydrogenoxalate).

Boiling point: Not boil under atmospheric pressure and degradation occurs around at melting point (thiocyclam hydrogenoxalate).

Flash point: Not applicable.

Exposing property: Minimum oxygen concentration (MOC), 17.5%;  
Minimum ignition energy (MIE), 22 mJ

Vapor pressure:  $6.2 \times 10^{-7}$  Pa (25°C) (thiocyclam hydrogenoxalate)

Density:  $0.40 \pm 0.15$  g/cm<sup>3</sup> (tap bulk density)

Solubility: Soluble in water.

Partition coefficient: Log P<sub>OW</sub> = -0.07 (23°C) (thiocyclam hydrogenoxalate)

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**10. STABILITY AND REACTIVITY**

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Stability: Stable under normal conditions for handling.  
Not stable in alkaline solution.  
Especially not stable in acid solution.  
Susceptible to oxidation/

## Hazardous decomposition products:

No specific decomposition product is known.  
As combustion products, oxides of sulfur, nitrogen, or carbon may be generated.

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**11. TOXICOLOGICAL INFORMATION**

Acute Toxicity	Oral	Rat LD <sub>50</sub> male, 540 mg/kg; female, 50 – 300 mg/kg (Cat. 3)
	Dermal	Rat LD <sub>50</sub> male and female, > 2000 mg/kg (Cat. 5) No mortality occurred, however, irritating skin reaction as a hazardous sign observed. Therefore, this product is classified to be Category 5.
	Inhalation	THIOCYCLAM TECHNICAL (Cat. 4) Rat LC <sub>50</sub> male, 1.02 mg/L; female, 1.20 mg/L (4-hr, dust) Amorphous silicon dioxide (Cat. 4) Rat LC <sub>50</sub> > 2.0 mg/L (dust) Subtotal content of components, of which inhalation data is not available, was more than 10%. ATEmix (adjusted for total unknown) value was calculated to be in range of Category 4, based on above information. (Cat. 4)
Skin corrosion / irritation:		In skin irritation study in rabbit, moderate irritation observed. Therefore this product is classified to be Category 3.
Eye damage / irritation:		In eye irritation study conducted with aqueous dilution of this product (12.5% and 0.1%) in rabbit, no eye irritation noted exceeding criteria. Therefore this product is not classified as eye irritant.
Respiratory sensitization:		No data / information available.
Skin sensitization:		In skin sensitization study in Guinea pig (Buehler test), sensitization rates of 3% of this product for induction caused no skin reaction. Therefore this product is not classified as skin sensitization.
Mutagenicity:		Thiocyclam Tech. Not mutagenic <i>in vitro</i> and <i>in vivo</i> mutagenicity assays. Amorphous silica Not mutagenic. The relevant components in this product classified as not mutagenic. Therefore, this product is not classified as mutagenic.
Carcinogenicity:		Thiocyclam Tech. Not carcinogenic (rat and mouse). Amorphous silica Not carcinogenic. The relevant components in this product classified as not carcinogenic. Therefore, this product is not classified as carcinogenic.
Reproductive toxicity:		Thiocyclam Tech. Not toxic on reproduction. Not teratogenic (rat and rabbit). Amorphous silica Not toxic on reproduction. The relevant components in this product classified as not toxic on reproduction. Therefore, this product is not classified as toxic on reproduction.
Target organ toxicity (single exposure):		

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Specific toxicity / effects noted in nervous system at no lethal dose level in the single dose toxicity studies in rats via oral.

As the dose level was exceeding the guidance value range, however, findings were similar to them in the study using Thiocyclam Technical (Category 1 (nervous system)) and content of thiocyclam was exceeding cut-off value. Therefore, target organ toxicity (single exposure) for this product is classified as Category 1 (nervous system).

Target organ toxicity (repeated exposure):

Thiocyclam Technical is classified as Category 2 (nervous system) and toxic amount of this product converted by thiocyclam content is in the range of guidance value of Category 2.

Therefore, target organ toxicity (repeated exposure) for this product is classified to be Category 2 (nervous system).

Aspiration hazard:

thiocyclam	No information available	(Classification not possible)
xylene	May cause chemical pneumonitis by aspiration	(Cat. 2)
ethylbenzene	May cause chemical pneumonitis by aspiration	(Cat. 1)
Amorphous silica	No information available	(Classification not possible)

As no information available for thiocyclam and the concentration of xylene and ethylbenzene are less than 10%, the aspiration hazard category of this product is not classifiable.

## 12. ECOLOGICAL INFORMATION

GHS classification performed based on the data of THIOCYCLAM TECHNICAL.

Aquatics toxicity

Common carp:	Acute toxicity LC <sub>50</sub> = 0.32 mg/L (96 hours)
Rainbow trout:	Chronic toxicity NOEC = 0.04 mg/L (21 days)
Daphnia magna:	Acute immobilization EC <sub>50</sub> = 0.022 mg/L (48 hours)
	Chronic immobilization NOEC = 0.03 mg/L (21 days)
	Reproduction NOEC = 0.1 mg/L (21 days)
Green algae:	Growth inhibition E <sub>r</sub> C <sub>50</sub> = 2.37 mg/L (0–72 hours)

Based on the EC<sub>50</sub> for Daphnia, this product is classified to be Category: Acute 1.

Persistence and degradability: Rapidly degrade by photodegradation.  
 Degradation rate in water with less than DT<sub>50</sub> of 2 days (semi-field test using lysimeter)

Bioaccumulation potential: Unlikely to occur bioaccumulation (low log P<sub>OW</sub> = - 0.07).



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Degradation of thiocyclam is practically rapid and BCF calculated from log P<sub>OW</sub> value is low. In addition, based on the results of chronic toxicity studies, 0.01 mg/L < NOEC ≤ 0.1 mg/L, thiocyclam is classified to be Category: Chronic 2. This product consists of thiocyclam hydrogenoxalate (50%), therefore, this product is classified as Category: Chronic 2.

### 13. DISPOSAL CONSIDERATIONS

Product/packaging:	<p>Disposal of important amounts must be made by duly authorized specialists.</p> <p>Incineration should be made in authorized and specialized plant. Eliminate the product and its packaging with care and in a responsible way.</p> <p>Do not throw near ponds, rivers, ditches or into sewers.</p> <p>Wash contaminated surfaces with water and collect washing waters for treatment.</p> <p>Make sure that local Regulations are respected.</p>
Washing products:	<p>Do not throw into sewer.</p> <p>Do not contaminate natural waters.</p> <p>Clean up application materials on the treated area and eliminate waters by spraying on one area.</p>

### 14. TRANSPORT INFORMATION

Regulation	RID / ADR (Terrestrial)	IMDG (Maritime)	IATA (Aerial)
UN code:	2588	2588	2588
Class (+Subsidiary risk):	6.1	6.1	6.1
Proper shipping name:	PESTICIDE, SOLID, TOXIC, N.O.S. (THIOCYCLAM HYDROGENOXALATE)		
Marine pollutant:	Yes		
Packaging group:	III	III	III

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**15. REGULATORY INFORMATION**

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[Please refer to (any other) national measures that may be relevant.]

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**16. OTHER INFORMATION**

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## Reference:

- Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (4<sup>th</sup> revised edition) United Nations 2011.
- UN Recommendations on the Transport of Dangerous Goods - Model Regulations, 16<sup>th</sup> revised edition (2009) (ADR 2009).
- Pesticide Manual (15<sup>th</sup> Edition).

First issue of English edition: 14 March 2002

Updated:	24 February 2003	SDS re-compiled according to EU regulations.
	17 September 2004	Organization name changed.
	19 January 2009	SDS re-compiled according to GHS and organization name changed.
	16 December 2011	Data reviewed and revised according to 3 <sup>rd</sup> edition of GHS, based on the latest findings in acute toxicity studies conducted under GLP.
	24 May 2012	Data reviewed and revised according to 4 <sup>th</sup> edition of GHS and the latest international transport regulations.
	18 August 2014	Head office address changed.
Final updated edition:	26 July 2016	Data reviewed and correction of the content misprint

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