

SAFETY DATA SHEET

THIRAM SC



Version 1.2 PRD Revision Date: 06/29/2017 SDS Number: 150000103721 SDSUS / EN / 0001 Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

SECTION 1. IDENTIFICATION

Product name : THIRAM SC

Product code : 51197-00, P5119701

EPA Registration Number : 45728-26

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive
Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone number : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Liver)

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Response:
P314 Get medical advice/ attention if you feel unwell.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

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Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|---------------|----------|-----------------------|
| Thiram | 137-26-8 | 44 |

SECTION 4. FIRST AID MEASURES

- General advice : Show this safety data sheet to the doctor in attendance.
Consult a physician.
- If inhaled : Move to fresh air.
Treat symptomatically.
If symptoms persist, call a physician.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Take off all contaminated clothing immediately.
Call a physician or poison control centre immediately.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
- If swallowed : Call a physician or poison control centre immediately.
Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : May cause damage to organs through prolonged or repeated exposure if inhaled.
Irregular cardiac activity
Headache
Nausea
Dermatitis
Shortness of breath
More severe effects if alcohol is consumed.
- Notes to physician : General advice for dithiocarbamates
Biomonitoring possible at chronic exposure: determination of TTCA in the urine at the end of the workday/week.
Bloodtesting for delayed effects: liver tests, kidney function, thyroid function

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO₂)
Dry chemical
Water spray
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : Thermal decomposition can lead to release of irritating gases and vapours.
- Hazardous combustion products : Nitrogen oxides (NO_x)
Sulphur oxides
Carbon oxides
- Further information : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.
- Environmental precautions : Avoid release to the environment.
- Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Keep product and empty container away from heat and sources of ignition.
- Advice on safe handling : Avoid inhalation of vapour or mist.
Do not swallow.
Ensure adequate ventilation.
Wash thoroughly after handling.
- Conditions for safe storage : Keep tightly closed.
Keep in a dry, cool and well-ventilated place.
Keep away from direct sunlight.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|------------|----------|------------------------------------|--|-----------|
| thiram | 137-26-8 | TWA (Inhalable fraction and vapor) | 0.05 mg/m ³ | ACGIH |
| | | TWA | 5 mg/m ³ | NIOSH REL |
| | | TWA | 5 mg/m ³ | OSHA Z-1 |
| | | TWA | 5 mg/m ³ | OSHA P0 |

Engineering measures : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection : Wear respiratory protection.

Hand protection

Remarks : Rubber gloves Neoprene gloves The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Eye protection : Wear safety glasses with side shields (or goggles).
Face-shield
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Skin and body protection : Complete suit protecting against chemicals

Protective measures : Remove respiratory and skin/eye protection only after vapours have been cleared from the area.
Ensure that eye flushing systems and safety showers are located close to the working place.
Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : white

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| | | |
|-------------------------------------|---|--------------------------------|
| Odour | : | odourless |
| pH | : | 6.5 Concentration: 10 g/l |
| Flash point | : | Not applicable |
| Density | : | 1.16 g/cm ³ (20 °C) |
| Solubility(ies) Water solubility | : | soluble |
| Auto-ignition temperature | : | > 400 °C |
| Viscosity Viscosity, dynamic | : | 270 - 2,680 mPa.s (20 °C) |

SECTION 10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|---|
| Reactivity | : | None reasonably foreseeable. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Hazardous decomposition products formed under fire conditions. |
| Conditions to avoid | : | Heat |
| Incompatible materials | : | Strong oxidizing agents Strong acids |
| Hazardous decomposition products | : | Carbon dioxide (CO ₂) Nitrogen oxides (NO _x) Sulphur oxides |

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

| | | |
|-----------------------|---|---------------------------|
| Acute oral toxicity | : | LD50 (Rat): > 2,000 mg/kg |
| Acute dermal toxicity | : | LD50 (Rat): > 2,000 mg/kg |

Components:

thiram:

| | | |
|---------------------------|---|---|
| Acute oral toxicity | : | LD50 Oral (Rat): 1,800 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): 4.42 mg/l Exposure time: 4 h |

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Test atmosphere: dust/mist

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Result: No skin irritation

Components:

thiram:

Species: Rabbit
Exposure time: 4 h
Result: Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result: No eye irritation

Components:

thiram:

Species: Rabbit
Result: irritating

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Result: Did not cause sensitisation on laboratory animals.

Components:

thiram:

Test Type: Skin sensitisation
Species: Guinea pig
Result: sensitizing

Germ cell mutagenicity

Not classified based on available information.

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Product:

Germ cell mutagenicity - Assessment : Did not show mutagenic effects in animal experiments.

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

IARC

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.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Product:

Reproductive toxicity - Assessment : Did not show teratogenic effects in animal experiments.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Product:

Exposure routes: Inhalation
Target Organs: Kidney, Liver

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Further information

Product:

Remarks: None known.

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

thiram:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.046 - 0.54 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.011 - 0.139 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Chlorella pyrenoidosa (aglae)): > 0.14 mg/l
Exposure time: 120 h

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.0046 mg/l
Exposure time: 33 d

Toxicity to microorganisms : IC50 (Bacteria): 3.11 mg/l
Exposure time: 3 h

Persistence and degradability

Product:

Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Mobility in soil

Product:

Distribution among environmental compartments : Koc: 2245 - 24526

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Thiram)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Thiram)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Thiram)
Class : 9
Packing group : III
Labels : Class 9 - Miscellaneous Dangerous Goods
ERG Code : 171
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

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 : Acute Health Hazard
Chronic Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

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thiram 137-26-8 42 %

EPA Labeling Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under the federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Harmful if inhaled. Causes moderate eye irritation. Avoid breathing spray mist or vapor. Do not take alcohol immediately before or after exposure to this product. The consumption of alcohol by the applicator can increase the toxicity of the product. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL
TSCA : On TSCA Inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New

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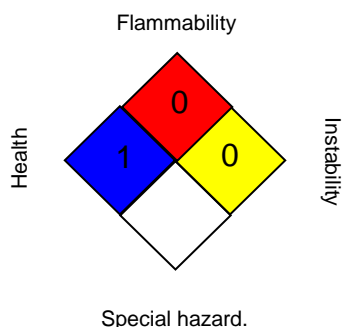


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Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

NFPA:



HMIS® IV:

| | | |
|------------------------|---|----------|
| HEALTH | * | 1 |
| FLAMMABILITY | | 0 |
| PHYSICAL HAZARD | | 0 |

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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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 is designed only as a 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 process, unless specified in the text.

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