

# Material Safety Data Sheet

| HAZARD WARNINGS | RISK PHRASES                                                                                                                               | PROTECTIVE CLOTHING                                                                                                                                                                                                                                                                                                                             |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | The health risks of this compound have not been fully determined. Exposure may cause irritation of the skin, eyes, and respiratory system. |     |

## Section I. Chemical Product and Company Identification

|                  |                                                 |                                 |                                                                                           |
|------------------|-------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------|
| Chemical Name    | <b>4,5-Ethylenedithio-1,3-dithiole-2-thione</b> |                                 |                                                                                           |
| Catalog Number   | E0429                                           | Supplier                        | TCI America<br>9211 N. Harborside St.<br>Portland OR<br>1-800-423-8616                    |
| Synonym          | Not available.                                  |                                 |                                                                                           |
| Chemical Formula | C <sub>3</sub> H <sub>4</sub> S <sub>5</sub>    |                                 |                                                                                           |
| CAS Number       | 59089-89-3                                      | In case of<br>Emergency<br>Call | <b>Chemtrec®</b><br><b>(800) 424-9300 (U.S.)</b><br><b>(703) 527-3887 (International)</b> |

## Section II. Composition and Information on Ingredients

| Chemical Name                            | CAS Number | Percent (%)    | TLV/PEL        | Toxicology Data |
|------------------------------------------|------------|----------------|----------------|-----------------|
| 4,5-Ethylenedithio-1,3-dithiole-2-thione | 59089-89-3 | Min. 98.0 (GC) | Not available. | Not available.  |

## Section III. Hazards Identification

|                        |                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute Health Effects   | No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound. |
| Chronic Health Effects | <b>CARCINOGENIC EFFECTS</b> : Not available.<br><b>MUTAGENIC EFFECTS</b> : Not available.<br><b>TERATOGENIC EFFECTS</b> : Not available.<br><b>DEVELOPMENTAL TOXICITY</b> : Not available.<br>Repeted or prolonged exposure to this compound is not known to aggravate existing medical conditions.                                                                                   |

## Section IV. First Aid Measures

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Contact  | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.                                                                                                                                                                                                                                                                                                |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.                                                                                                                                                                                                                                                        |
| Inhalation   | If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.                                                                                                                                                                                             |
| Ingestion    | INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. |

## Section V. Fire and Explosion Data

|                                      |                                                                                                                                                                                                        |                  |                |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|
| Flammability                         | May be combustible at high temperature.                                                                                                                                                                | Auto-Ignition    | Not available. |
| Flash Points                         | Not available.                                                                                                                                                                                         | Flammable Limits | Not available. |
| Combustion Products                  | These products are toxic carbon oxides (CO, CO <sub>2</sub> ), sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...).                                                                                  |                  |                |
| Fire Hazards                         | Not available.                                                                                                                                                                                         |                  |                |
| Explosion Hazards                    | Risks of explosion of the product in presence of mechanical impact: Not available.<br>Risks of explosion of the product in presence of static discharge: Not available.                                |                  |                |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder.<br>LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.<br>Consult with local fire authorities before attempting large scale fire-fighting operations. |                  |                |

**Section VI. Accidental Release Measures****Spill Cleanup  
Instructions**

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

**Section VII. Handling and Storage****Handling and Storage  
Information**

Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust.

Always store away from incompatible compounds such as oxidizing agents.

**Section VIII. Exposure Controls/Personal Protection****Engineering Controls**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection**

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**

Not available.

**Section IX. Physical and Chemical Properties****Physical state @ 20°C**

Solid. (Crystal, powder. Yellow - yellow red.)

**Solubility**

Not available.

**Specific Gravity**

Not available.

**Molecular Weight**

224.41

**Partition Coefficient**

Not available.

**Boiling Point**

Not available.

**Vapor Pressure**

Not applicable.

**Melting Point**

124°C (255.2°F)

**Vapor Density**

Not available.

**Refractive Index**

Not available.

**Volatility**

Not available.

**Critical Temperature**

Not available.

**Odor**

Not available.

**Viscosity**

Not available.

**Taste**

Not available.

**Section X. Stability and Reactivity Data****Stability**

This material is stable if stored under proper conditions. (See Section VII for instructions)

**Conditions of Instability**

Avoid excessive heat and light.

**Incompatibilities**

Reactive with oxidizing agents.

**Section XI. Toxicological Information****RTECS Number**

Not available.

**Routes of Exposure**

Eye Contact. Ingestion. Inhalation.

**Toxicity Data**

Not available.

**Chronic Toxic Effects**

**CARCINOGENIC EFFECTS** : Not available.

**MUTAGENIC EFFECTS** : Not available.

**TERATOGENIC EFFECTS** : Not available.

**DEVELOPMENTAL TOXICITY**: Not available.

Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

**Acute Toxic Effects**

No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound.

**Section XII. Ecological Information****Ecotoxicity**

Not available.

**Environmental Fate**

Not available.

**Section XIII. Disposal Considerations**

## Waste Disposal

Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

**Section XIV. Transport Information**

## DOT Classification

Not a DOT controlled material (United States).

## PIN Number

Not applicable.

## Proper Shipping Name

Not applicable.

## Packing Group (PG)

Not applicable.

## DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**TSCA Chemical Inventory  
(EPA)

This product is **NOT** on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:

- (i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.
- (ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on an MSDS sheet.

WHMIS Classification  
(Canada)

Not controlled under WHMIS (Canada).

## EINECS Number (EEC)

Not available.

## EEC Risk Statements

Not available.

## Japanese Regulatory Data

Not available.

**Section XVI. Other Information****Version 1.0**

**Validated on 2/21/2011.**

**Printed 2/21/2011.**

**Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. 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 chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.