



## Material Safety Data Sheet Mercuric Thiocyanate

### Section 1 - Chemical Product and Company Identification

**MSDS Name:**

Mercuric Thiocyanate

**Catalog Numbers:**

LC16710

**Synonyms:**

Mercuric sulfocyanate, mercury dithiocyanate.

**Company Identification:**

LabChem Inc

200 William Pitt Way

Pittsburgh, PA 15238

**Company Phone Number:**

(412) 826-5230

**Emergency Phone Number:**

(800) 424-9300

**CHEMTREC Phone Number:**

(800) 424-9300

### Section 2 – Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
592-85-8	Mercuric Thiocyanate	100

### Section 3 - Hazards Identification

#### Emergency Overview

**Appearance:** White powder.

**Danger!** May be fatal if swallowed. May be fatal if absorbed through the skin. Causes severe eye and skin irritation with possible burns. Causes digestive and respiratory tract irritation with possible burns. May impair fertility. May cause harm to the unborn child. Harmful if inhaled. May cause allergic skin reaction. May cause kidney damage. May cause central nervous system effects. Light sensitive. Severe marine pollutant. Contact with acids liberates very toxic gas.

**Target Organs:** Kidneys, central nervous system, reproductive system.

#### Potential Health Effects

**Eye:**

Exposure to mercury or mercury compounds can cause discoloration on the front surface of the lens, which does not interfere with vision. Causes severe eye irritation and possible burns. Contact with mercury or mercury compounds can cause ulceration of the conjunctiva and cornea.

**Skin:**

May be fatal if absorbed through the skin. Causes severe skin irritation and possible burns. May cause allergic contact dermatitis.



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**Ingestion:**

May be fatal if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Causes gastrointestinal tract burns. May cause muscle tremor and impaired motor function. May cause cardiac disturbances. Symptoms of acute mercury salt poisoning include nausea, vomiting, bloody diarrhea, foul taste, loosened teeth, circulatory collapse, peripheral neurological disease, and kidney damage requiring dialysis.

**Inhalation:**

May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability. May cause gastrointestinal effects including gum and mouth inflammation, jaw necrosis, and loosening of the teeth. May cause burns to the respiratory tract. Acute exposure to high concentrations of mercury vapors may cause severe respiratory tract irritation.

**Chronic:**

Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause reproductive and fetal effects. Chronic ingestion may cause accumulation of mercury in body tissues. Laboratory experiments have resulted in mutagenic effects. May be rapidly transferred across the placenta and cause adverse fetal effects. Chronic mercury poisoning involves kidney damage, visual defects, tremor, and severe psychological changes. The brain is the critical organ for chronic mercury poisoning. The half-life of mercury in the brain is 10 years. Cumulative toxicity is a major consideration with chronic exposure.

### Section 4 - First Aid Measures

**Eyes:**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:**

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:**

Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:**

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:**

The concentration of mercury in whole blood is a reasonable measure of the body-burden of mercury and thus is used for monitoring purposes. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.

**Antidote:**

The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.



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### Section 5 - Fire Fighting Measures

**General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible.

**Extinguishing Media:**

Use water fog, dry chemical, carbon dioxide or chemical foam.

**Autoignition Temperature:**

Not available

**Flash Point:**

Not available

**NFPA Rating:**

(estimated) Health: 3; Flammability: 1; Instability: 0

**Explosion Limits:**

Lower: n/a Upper: n/a

### Section 6 - Accidental Release Measures

**General Information:**

Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:**

Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches, which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

### Section 7 - Handling and Storage

**Handling:**

Wash thoroughly after handling. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Store protected from light. Use only with adequate ventilation. Extreme care should always be taken to prevent skin and gastrointestinal absorption because these routes of entry can greatly increase the total body burden and are often overlooked in occupational settings.

**Storage:**

Store in a tightly closed container. Keep away from food and drinking water. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light.

### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.



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### Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Mercuric thiocyanate	0.025 mg/m <sup>3</sup> TWA (as Hg) (listed under Mercury inorganic compounds).Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Mercury inorganic compounds).	0.05 mg/m <sup>3</sup> TWA (vapor, except organo alkyls, as Hg) (listed under Mercury compounds).10 mg/m <sup>3</sup> IDLH (as Hg, except organo(alkyl) compounds) (listed under Mercury compounds).	none listed

### OSHA Vacated PELs:

Mercury(II) chloride: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

#### Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### Skin:

Wear appropriate gloves to prevent skin exposure.

#### Clothing:

Wear appropriate protective clothing to prevent skin exposure.

#### Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

<b>Physical State:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Odorless
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	Not available
<b>Vapor Density:</b>	Not available
<b>Evaporation Rate:</b>	Not available
<b>Viscosity:</b>	Not available
<b>Boiling Point:</b>	Not available
<b>Freezing/Melting Point:</b>	165°C
<b>Decomposition Temperature:</b>	>165°C
<b>Solubility in water:</b>	Slightly soluble in cold water
<b>Specific Gravity/Density:</b>	Not available
<b>Molecular Formula:</b>	Hg(CNS) <sub>2</sub>
<b>Molecular Weight:</b>	316.78



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### Section 10 - Stability and Reactivity

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Light, dust generation, excess heat.

**Incompatibilities with Other Materials:**

Strong oxidizing agents, strong bases, acids, ammonia, copper, iron, silver salts, potassium, antimony, sodium, lead, hypophosphites, formates, sulfites, phosphates, albumin, gelatin, alkalies, alkaloid salts, lime water, arsenic, bromides, borax, carbonates, reduced iron, infusions of cinchona, columbo, oak bark or senna, tannic acid, metallic halides, vegetable astringents.

**Hazardous Decomposition Products:**

Mercury/mercury oxides, oxides of carbon, oxides of sulfur.

**Hazardous Polymerization:**

Has not been reported.

### Section 11 - Toxicological Information

**RTECS:**

CAS# 592-85-8: XL1550000

**LD50/LC50:**

CAS# 592-85-8:

Oral, rat: LD50 = 46 mg/kg

Oral, mouse: LD50 = 24.5 mg/kg

Dermal, rat: LD50 = 685 mg/kg

**Carcinogenicity:**

CAS# 592-85-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:**

See entry in the Documentation of the Threshold Limit Values and Biological Exposure Indices issued by ACGIH.

**Teratogenicity:**

Mercuric chloride has been embryotoxic, fetotoxic, and teratogenic in experimental animals, and has affected fertility in male mice. Inorganic mercury has been implicated in male impotence, menstrual disorders, and spontaneous abortions in humans.

**Reproductive:**

Data clearly indicate that mercury can affect both male & female reproductive outcomes. It has not been possible to unequivocally determine a safe exposure level for protection of reproduction function in either male or female workers, particularly since many studies didn't adequately evaluate dermal exposure. Those planning to have children should keep their exposure to mercury as low as possible by engineering controls, personal protective equipment for skin & respiratory tract, & good personal hygiene.

**Mutagenicity:**

Micronucleus Test: Human, Lymphocyte = 5 umol/L.; Mutation Test Systems - not otherwise specified: Human, Lymphocyte = 2 umol/L.; Cytogenetic Analysis: Human, HeLa cell = 10 mg/L.; Cytogenetic Analysis: Human, Lymphocyte = 2 umol/L.

**Neurotoxicity:**

Refer to Patty's Industrial Hygiene and Toxicology for specific nervous system abnormalities.



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### Section 12 - Ecological Information

**Ecotoxicity:**

Fish: Rainbow trout: LC50 = 0.903 mg/L; 24 Hr; Unspecified Fish: Fathead Minnow: LC50 = 0.037 mg/L; 48 Hr; Unspecified Fish: Bluegill/Sunfish: LC50 = 0.16 mg/L; 96 Hr; Static at 13.5-16.2°C (pH 7.1-7.3) Water flea Daphnia: LC50 = 0.093 mg/L; 48 Hr; Unspecified No data available.

**Environmental:**

Mercury can be accumulated from water by many organisms (up to 10,000 fold).

**Physical:**

Compound decomposes to metallic mercury when in contact with organic matter and sunlight.

### Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

### Section 14 - Transport Information

**US DOT**

**Shipping Name:** Mercuric thiocyanate  
**Hazard Class:** 6.1  
**UN Number:** UN1646  
**Packing Group:** II

### Section 15 - Regulatory Information

**US Federal****TSCA:**

CAS# 592-85-8 is listed on the TSCA inventory.

**SARA Reportable Quantities (RQ):**

None of the chemicals in this material have an RQ.

**CERCLA/SARA Section 313:**

This material contains Mercuric thiocyanate (listed as Mercury compounds), 100%, (CAS# 592-85-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**OSHA - Highly Hazardous:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**US State****State Right to Know:**

CAS# 592-85-8 can be found on the following state right to know lists: California, (listed as Mercury compounds), New Jersey, Pennsylvania, Massachusetts.

**California Regulations:**



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WARNING: This product contains Mercury (II) chloride, listed as 'Mercury compounds', a chemical known to the state of California to cause developmental reproductive toxicity.

### European/International Regulations

#### Canadian DSL/NDSL:

CAS# 592-85-8 is listed on Canada's DSL List.

#### Canada Ingredient Disclosure List:

CAS# 592-85-8 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Other Information

MSDS Creation Date: November 15, 2007

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