



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Thallium (I) Malonate/Formate Solution**

PRODUCT NO: 3553

CAS NO: 61971-47-9

SYNONYMS: Clerici's Solution

MANUFACTURER:

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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram



Signal Word

Danger

Hazard Statements

H301	Toxic if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H331	Toxic if inhaled
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Phrases

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/ eye protection/face protection
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P310	Immediately call a poison center or doctor/physician
P332 + P313	If skin irritation occurs get medical attention/advice
P403	Store in a well-ventilated place.
P405	Store locked up.

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

HMIS CLASSIFICATION:

Health: 3 Flammability: 0 Reactivity: 1

NFPA RATING:

Health: 3 Fire: 0 Reactivity Hazard: 1

POTENTIAL HEALTH EFFECTS: Inhalation, Ingestion, Skin absorption

EYE CONTACT: Can cause blindness

SKIN CONTACT: Causes irritation to skin. May be fatal if absorbed thru skin.

INHALATION: Causes irritation to respiratory system. May be fatal if inhaled.

INGESTION: May be fatal if swallowed. Highly toxic.

SUBACUTE AND CHRONIC TOXICITY: Main symptoms of thallium poisoning are peripheral neuropathy and loss of hair. Acute poisoning causes paresthesias, ataxia, alopecia, fever, coryza, abdominal pain, nausea and vomiting. Symptoms may progress to lethargy, speech disorders, tremors, convulsions, cyanosis, pulmonary edema, bronchopneumonia and death. Kidney, liver and brain damage can occur. Thallium poisoning during the first trimester of pregnancy can cause skeletal deformities, alopecia, low birth weight and premature birth. Chronic thallium poisoning may produce alopecia, salivation and a blue line on the gums. Damage to the gastrointestinal, endocrine system and kidneys may also occur.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: $\text{TIOOCCH}/(\text{TIOOC})_2\text{CH}_2$

Molecular Weight: No data

CHEMICAL NAME	CAS#	%	ACGIH (TWA)	OSHA (PEL)
Thallium (I) Malonate/Formate Solution	61971-47-9	100	No data	No data

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water (lukewarm if possible) for several minutes. Assure rinsing under eyelids. Seek immediate competent EMERGENCY medical attention.

SKIN EXPOSURE: Wash affected area with soap and water. Rinse skin thoroughly. Remove contaminated clothes if necessary. Seek immediate medical attention.

INHALATION: Remove victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance. Give oxygen if deemed necessary. If not breathing administer CPR. Get emergency care immediately.

INGESTION: Seek competent medical assistance immediately. Keep the victim calm. Do not induce vomiting. Wash out mouth if victim is conscious.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Not applicable

AUTO IGNITION TEMPERATURE: Not applicable

EXPLOSION LIMITS: Not applicable

EXTINGUISHING 'MEDIUM': Carbon dioxide, dry powder, foam or water spray.

SPECIAL FIRE FIGHTING PROCEDURES: If this product is involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: If involved in a fire this material may emit highly toxic fumes of Thallium, Carbon monoxide, Carbon dioxide.

UNUSUAL FIRE OR EXPLOSION HAZARDS: None known

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Evacuate unprotected persons. Ensure adequate ventilation. Use adequate protection when handling to avoid inhalation and contact with material.

ENVIRONMENTAL PRECAUTIONS: Do not allow product to reach ground water.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Isolate spillage. Absorb spill with inert materials, then place in applicable chemical waste container. Label container. Retain all contaminated solage for removal and treatment.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Open and handle container in controlled environment. HIGHLY TOXIC. Do not breathe vapor. Do not get in eyes, on skin, clothing or shoes.

CONDITIONS FOR SAFE STORAGE: Keep container tightly closed. Store in a dry-well ventilated area. Store away from oxidizing materials.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EYE PROTECTION: Always wear approved safety glasses w/ side shields, or safety goggles, and faceshield when handling a chemical substance in the laboratory.

SKIN PROTECTION: Chemical-resistant, impervious, rubber, neoprene

VENTILATION: Handle in an efficient chemical fume hood

RESPIRATOR: If ventilation is not available a high efficiency vapor/mist respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 19-10.134.

ADDITIONAL PROTECTION: Protection to avoid contact with clothing, shoes. (chemical-resistant lab apron, overalls, booties, and sleevelets.)

OTHER PROTECTIVE EQUIPMENT: Eye wash and quick-drench shower facilities should be available in work area. Use in a controlled environment. Do not smoke, eat or drink in area. Avoid prolonged or repeated exposure.

PRECAUTIONS: HIGHLY TOXIC. Avoid contact with skin, eyes, clothing, and shoes. Exposure to eyes can cause blindness. Irritant to skin and mucous membranes. Do not inhale vapor/mist. Use with adequate ventilation. May be fatal if swallowed, inhaled, absorbed thru skin. Avoid release into the environment. IRRITANT. Irritating to skin, eyes, mucous membranes. Danger of cumulative effects. TO BE HANDLED AND USED BY COMPETENT TRAINED PERSONNEL.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Liquid

MELTING POINT: No data

BOILING POINT: No data

SPECIFIC GRAVITY (WATER=1): 4.36 g/cm³

VAPOR PRESSURE: Not applicable

% VOLATILE BY VOLUME: Non volatile

SOLUBILITY IN WATER: No data

REFRACTIVE INDEX: 1.581

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: No data

INCOMPATIBILITY: Strong oxidizing agents

DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, Thallium

SECTION 11 TOXICOLOGICAL DATA

CARCINOGENIC EFFECTS: No data

MUTAGENIC EFFECTS: No data

TETRATOGENIC EFFECTS: No data

TARGET ORGANS: Kidneys. Eyes. Male reproductive system. Skin. Nerves. Cardiovascular system.

To the best of our knowledge the toxicological effects of this compound have not been fully investigated. For R & D use only. Not for drug, household, or other uses.

SECTION 12 ECOLOGICAL DATA

Toxic to fish. May cause long-term adverse effects in the aquatic environment. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Toxic for aquatic organisms. Do not allow material to be released to the environment without proper governmental permits.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local state and federal regulations.

SECTION 14 TRANSPORTATION DATA

Toxic liquid, organic, n.o.s. (Thallium malonate/formate solution)

CLASS 6.1

UN2810

PG II

DOT and IATA Regulated

SECTION 15 REGULATORY INFORMATION

TSCA: No data

SARA (TITLE 313): Not listed. Subject to SARA section 313 reporting requirement.

RCRA STATUS: Meets criteria for toxic material and should be managed as a hazardous material.

SECTION 16 OTHER INFORMATION

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