1. Product Identification

**Synonyms:** Formomalenic Thallium; Propanedioic Acid, Dithallium Salt; Thallium Malonate, Thallous Malonate.
**CAS No.:** 2757-18-8
**Molecular Weight:** 510.80
**Chemical Formula:** \( C_3H_2O_4Ti_2 \)
**Product Codes:** CHEM-336 and others.

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thallous Malonate</td>
<td>2757-18-8</td>
<td>98</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

**Emergency Overview**

**Danger!** May be fatal if swallowed. May be fatal if absorbed through the skin. Causes respiratory tract irritation. Causes eye and skin irritation. May cause digestive tract irritation. May cause central nervous system effects. May cause liver and kidney damage. May cause cardiac disturbances.

**SAF-T-DATA**\(^{\text{tm}}\) Ratings

- **Health Rating:** 3 - Severe (Poison)
- **Flammability Rating:** 0 - None
- **Reactivity Rating:** 1 - Slight
- **Contact Rating:** 2 - Moderate
- **Lab Protective Equip:** GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
- **Storage Color Code:** Blue (Health)

**Potential Health Effects:**

**Eye:**
Causes eye irritation. May cause conjunctivitis.

**Skin:**
Causes skin irritation. May be fatal if absorbed through the skin. Prolonged and/or repeated contact may cause irritation and/or dermatitis. Absorption into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood).
**Ingestion:**
May be fatal if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause hemorrhaging of the digestive tract. May cause alopecia (loss of hair). May cause cardiopulmonary system effects. Human fatalities have been reported from acute poisoning. Ingested thallium compounds are extremely toxic, causing convulsions, coma, conjunctivitis, runny nose, polyneuritis, motor and sensory peripheral neuropathy, encephalopathy, arterial hypertension, rapid heart rate, and skin eruptions.

**Inhalation:**
Causes respiratory tract irritation. May cause dyspnea (difficult or labored breathing). May cause corneal irritation, dyspnea (labored breathing), bronchospasm, chest pain, and pulmonary edema, which may be fatal.

**Chronic:**
Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage.

**Target Organs:**
Kidneys, central nervous system, liver, cardiovascular system. Effects may be delayed.

### 4. First Aid Measures

**Eyes:**
Immediately 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:**
Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**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. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:**
Treat symptomatically and supportively.

### 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:**
Use extinguishing media most appropriate for the surrounding fire. For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam.

**Flash Point:**
Not applicable.

**Autoignition Temperature:**
Not applicable.

**Explosion Limits, Lower:**
Not available.
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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

7. Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Poison room locked.

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.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thallous Malonate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
Thallous Malonate: 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 protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
9. Physical and Chemical Properties

Physical State:
Solid
Appearance:
Almost white
Odor:
Not available.

pH:
Not available.
Vapor Pressure:
Not available.
Vapor Density:
Not available.
Evaporation Rate:
Not available.
Viscosity:
Not available.
Boiling Point:
Not available.
Freezing/Melting Point:
Not available.
Decomposition Temperature:
Not available.
Solubility:
Not available.
Specific Gravity/Density:
Not available.

10. Stability and Reactivity

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:
Incompatible materials, dust generation, excess heat, strong oxidants.

Incompatibilities with Other Materials:
Strong oxidizing agents, strong acids, air.

Hazardous Decomposition Products:
Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, fluoride fumes, thallium fumes.

Hazardous Polymerization:
Has not been reported

11. Toxicological Information

RTECS#:
CAS# 2757-18-8: OO1770000

LD$_{50}$/LC$_{50}$:
CAS# 2757-18-8:
Oral, rat: LD$_{50} = 18800$ ug/kg;
Skin, rat: LD$_{50} = 57700$ ug/kg.
Carcinogenicity:
CAS# 2757-18-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:
No information found

Teratogenicity:
No information found

Reproductive Effects:
No information found

Mutagenicity:
No information found

Neurotoxicity:
No information found

12. Ecological Information

Ecotoxicity:
No data available. No information available.

Environmental:
In reducing environments, thallous may precipitate as a sulfide; otherwise, it will remain in solution. Aquatic: Concentrations decrease slowly in the water and increase tenfold in the vegetation and fish. Will bioconcentrate but may not biodegrade.

Physical:
No information available.

Other:
For more information, see HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA.

13. Disposal Considerations
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. Transport Information

US DOT:
Shipping Name: TOXIC SOLIDS, ORGANIC, N.O.S
Hazard Class: 6.1
UN Number: UN2811
Packing Group: III

15. Regulatory Information

US FEDERAL:
TSCA:
CAS# 2757-18-8 is listed on the TSCA inventory.

Health & Safety Reporting List:
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
CAS# 2757-18-8: 100 lb TPQ (lower threshold); 10000 lb TPQ (upper threshold)

SARA Codes
CAS # 2757-18-8: immediate, delayed.

Section 313:
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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

STATE
CAS# 2757-18-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65:
California No Significant Risk Level: None of the chemicals in this product are listed.

16. Other Information

Product Use:
Laboratory Reagent and Consumer Hobby.

Revision Information:
None

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