SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier
Product Description: Thallous malonate
Cat No. 420790000; 420791000
Synonyms Propanedioic Acid, Dithallium Salt; Formomalenic Thallium; Thallium Malonate.

Relevant identified uses of the substance or mixture and uses advised against
Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet
Company Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium
E-mail address begel.sdsdesk@thermofisher.com

Emergency Telephone Number
For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
REGULATION (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>2</td>
</tr>
<tr>
<td>Acute Inhalation Toxicity - Dusts and Mists</td>
<td>2</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (repeated exposure)</td>
<td>2</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>2</td>
</tr>
</tbody>
</table>

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

Symbol(s) T+ - Very toxic
N - Dangerous for the environment
R33 - Danger of cumulative effects

R-phrase(s) R26/28 - Very toxic by inhalation and if swallowed
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
SECTION 2. HAZARDS IDENTIFICATION

Label Elements

Signal Word Danger

Hazard Statements
H300 - Fatal if swallowed
H411 - Toxic to aquatic life with long lasting effects
H373 - May cause damage to organs through prolonged or repeated exposure
H330 - Fatal if inhaled

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P310 - Immediately call a POISON CENTER or doctor/ physician
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P273 - Avoid release to the environment

Other Hazards
No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thallous malonate</td>
<td>EEC No. 220-414-7</td>
<td>98</td>
<td>2757-18-8</td>
<td>T+; R26/28 R33 N; R51-53</td>
<td>Acute Tox. 2 (H300) STOT RE 2 (H373) Aquatic Chronic 2 (H411)</td>
<td>-</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4. FIRST AID MEASURES
SECTION 4. FIRST AID MEASURES

<table>
<thead>
<tr>
<th>Description of first aid measures</th>
<th>Eye Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention. Take off contaminated clothing and shoes immediately.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately. If possible drink milk afterwards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes to Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treat symptomatically</td>
</tr>
</tbody>
</table>

SECTION 5. FIRE-FIGHTING MEASURES

**Extinguishing media**

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**
No information available.

**Special hazards arising from the substance or mixture**
Thermal decomposition can lead to release of irritating gases and vapors

**Advice for fire-fighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation

**Environmental precautions**
Prevent further leakage or spillage if safe to do so

**Methods and material for containment and cleaning up**
Sweep up or vacuum up spillage and collect in suitable container for disposal.

SECTION 7. HANDLING AND STORAGE
SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling
Avoid contact with skin and eyes. Avoid contact with clothing. Remove and wash contaminated clothing before re-use. Avoid breathing vapors or mists. Do not ingest. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities
Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

Specific End Uses

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>European Union</th>
<th>The United Kingdom</th>
<th>France</th>
<th>Belgium</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thallous malonate</td>
<td>STEL: 0.3 mg/m³ 15 min</td>
<td>TWA: 0.1 mg/m³ 8 hr Skin</td>
<td>Skin</td>
<td>VLA-ED: 0.1 mg/m³ 8 horas</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Italy</td>
<td>Germany</td>
<td>Portugal</td>
<td>The Netherlands</td>
<td>Finland</td>
</tr>
<tr>
<td>Thallous malonate</td>
<td>TWA: 0.1 mg/m³ 8 horas Skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Austria</td>
<td>Denmark</td>
<td>Switzerland</td>
<td>Poland</td>
<td>Norway</td>
</tr>
<tr>
<td>Thallous malonate</td>
<td>STEL: 1 mg/m³ 15 Minuten</td>
<td>TWA: 0.1 mg/m³ 8 Stunden Skin</td>
<td>MAK: 0.1 mg/m³ 8 Stunden</td>
<td>TWA: 0.1 mg/m³ 8 timer Skin</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Bulgaria</td>
<td>Croatia</td>
<td>Ireland</td>
<td>Cyprus</td>
<td>Czech Republic</td>
</tr>
<tr>
<td>Thallous malonate</td>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL)
No information available.

Predicted No Effect Concentration (PNEC)
No information available.

Exposure controls

Engineering measures
Ventilation systems

Personal protective equipment
- **Eye Protection**: Goggles
- **Hand Protection**: Protective gloves
- **Skin and body protection**: Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection
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.

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

Environmental exposure controls
No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
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<tr>
<td>Appearance</td>
<td>White</td>
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<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
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</tr>
<tr>
<td>Molecular Formula</td>
<td>C3 H2 O4 Ti2</td>
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<tr>
<td>Molecular Weight</td>
<td>510.8</td>
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</table>

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization
No information available.

Hazardous Reactions
No information available.

Conditions to Avoid

Incompatible products.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects
SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information
No acute toxicity information is available for this product

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rat)</th>
<th>LC50 Inhalation</th>
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</thead>
<tbody>
<tr>
<td>Thallous malonate</td>
<td>18.8 mg/kg</td>
<td>57.7 mg/kg</td>
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</tr>
</tbody>
</table>

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
No information available.

Developmental Effects
No information available.

Target Organs
No information available.

Endocrine Disruptor Information
None known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects
Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants

Persistence and degradability
No information available

Bioaccumulative potential
No information available.

Mobility in soil
No information available.

Results of PBT and vPvB assessment

Other adverse effects
No information available
SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products: Dispose of in accordance with local regulations

Contaminated Packaging: Empty containers should be taken to local recyclers for disposal

SECTION 14. TRANSPORT INFORMATION

IMDG/IMO

<table>
<thead>
<tr>
<th>UN-No</th>
<th>1707</th>
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<tbody>
<tr>
<td>Hazard Class</td>
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<tr>
<td>Packing Group</td>
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<tr>
<td>Proper Shipping Name</td>
<td>THALLIUM COMPOUND, N.O.S.</td>
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ADR

<table>
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IATA

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</tr>
</tbody>
</table>

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>CHINA</th>
<th>AICS</th>
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<tbody>
<tr>
<td>Thallous malonate</td>
<td>220-414-7</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
SECTION 16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R33 - Danger of cumulative effects
R26/28 - Very toxic by inhalation and if swallowed
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Date 19-Apr-2012
Revision Summary Not applicable
Reason for revision
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Disclaimer
The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet