**Section 1 - Product and Company Information**

**Product Name:** TETRACYCLINE

**Product Number:** 87128

**Brand:** Fluka Chemical

**Company:** Sigma-Aldrich

**Street Address:** 3050 Spruce Street

**City, State, Zip, Country:** SAINTLOUIS, MO 63103 US

**Technical Phone:** 314 771 5765

**Fax:** 800 325 5052

**Emergency Phone:** 414 273 3850 Ext. 5996

**Section 2 - Composition / Information on Ingredients**

**Substance Name:** TETRACYCLINE FREEBASE

**Formula:** C22H24N2O8


**CAS#:** 60-54-8

**ECno:** 200-481-9

**SARA313:** No

**Annex 1 Index Number:** N/A

**Section 3 - Hazards Identification**

**Emergency Overview:** Harmful.


**HMIS Rating:**
- **Health:** 3*
- **NPPARating:** Health: 3
- **Flammability:** 0
- **Reactivity:** 1

*Additional chronic hazard present.

For additional information on toxicity, please refer to Section 11.

**Section 4 - First Aid Measures**

**Oral Exposure:** If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Dermal Exposure:** In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**Eye Exposure:** In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**Section 5 - Fire Fighting Measures**

**Autoignition Temperature:** N/A

**Extinguishing Media:** Suitable noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

**Firefighting Procedure:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use extended stream of water, flooding, or misting to cool drums. Prevent drum from heating up to avoid generation of combustible gas.

**Specific Hazards:** Extinguishes very rapidly.

**Section 6 - Accidental Release Measures**

**Procedure to be Followed in Case of Leak or Spill:** Evacuate area. Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Procedure of Personal Protective Equipment:** Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

**Methods for Cleaning Up:**
- Avoid raising dust.
- Ventilate area.
- Wash spill site after material pickup is complete.

**Section 7 - Handling and Storage**

**Handling:**
- User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

**Storage:**
- Suitable: Keep tightly closed.
- Storage: Store at 2-8°C.

**Special Requirements:**
- Lightsensitive.

**Section 8 - Exposure Controls / Personal Protection**

**Engineering Controls:**
- Local exhaust ventilation, fume hood, or airborne ventilation.

**Personal Protective Equipment:**
- Respiratory: Government approved respirator.
- Hand: Compatible chemical-resistant gloves.

**Section 9 - Physical and Chemical Properties**

**Boiling Point:** N/A

**Flash Point:** N/A

**Vapor Density:** N/A

**Specific Gravity:** N/A

**Coefficient of Viscosity:** N/A

**Coefficient of Thermal Expansion:** N/A

**Section 10 -稳定性和反应性**

**Stability:** Stable.

**Reactivity:** Stable. (No known hazardous reactions)

**Hazardous Decomposition Products:** Oxides of carbon. Oxides of nitrogen.

**Section 11 - Toxicological Information on Ingested**

**Emergency Phone:** 414 273 3850 Ext. 5996

**Section 12 - Toxicological Information on Inhaled**

**Emergency Phone:** 414 273 3850 Ext. 5996

**Section 13 - Toxicological Information on Absorbed**

**Emergency Phone:** 414 273 3850 Ext. 5996

**Section 14 - Environmental Information**

**Environmental Hazards:** N/A

**Section 15 - Disposal Considerations**

**Disposal Method:** Encapsulate in inert material and place in a metal drum. Place in secure area. Follow local, state, and federal regulations for waste disposal.

**Section 16 - Other Information**

**Regulatory Information:**
- NFPA Rating: Health: 3, Flammability: 0, Reactivity: 1
- DOT Hazard Class: N/A
- DOT Prohibition: N/A
- DOT Required Group: N/A

**Section 17 - Other Information**

**Chemical Name:** TETRACYCLINE

**Section 1 - Identification and Hazardous Properties**

**Chemical Name:**

Fluka Chemical • 87128

**Chemical Abstracts Service Registry Number:**

CAS No.: 63-10-9

**MDL Reference Number:**

MDL No.: 08792

**UN Number:**

UN No.: 1234

**NF No.:**

NF No.: 0123

**NFPA Rating:**

Health: 1 Fire: 0 Reactivity: 3

**Hazard Class:**

UN 3333

**Primary Hazard:**

Combustible Solid

**Flash Point:**

-34°F (-38°C)

**Explosion Limits:**

Not applicable

**Flammability:**

Not applicable

**Autoignition Temperature:**

Not applicable

**Solubility:**

Not applicable

**Odor Threshold:**

Not applicable

**Oxidation State:**

Not applicable

**Vapor Pressure:**

Not applicable

**Vapor Density:**

Not applicable

**Saturated Vapor Concentration:**

Not applicable

**SG/Density:**

Not applicable

**Viscosity:**

Not applicable

**Evaporation Rate:**

Not applicable

**Partition Coefficient:**

Not applicable

**Decomposition Temperature:**

Not applicable

**Dissociation Constant:**

Not applicable

**Solubility:**

Not applicable

**Color:**

Yellow

**Form:**

Powder

**Solvent:**

MeOH

**Color of Solution:**

Yellow

**pH:**

4.44

**Molecular Weight:**

444.44 AMU

**Density:**

N/A

**Boiling Point:**

172°C

**Melting Point:**

N/A

**Freezing Point:**

N/A

**Density:**

N/A

**Odor Threshold:**

N/A

**Volatile %:**

4-11%

**VOC Content:**

N/A

**Water Content:**

N/A

**Solvent Content:**

N/A

**Evaporation Rate:**

N/A

**Viscosity:**

N/A

**Partition Coefficient:**

N/A

**Decomposition Temperature:**

N/A

**Flash Point °F:**

-34

**Flash Point °C:**

-38

**Explosion Limits:**

Not applicable

**Flammability:**

Not applicable

**Autoignition Temperature:**

Not applicable

**Optical Rotation:**

-291°(+/- 5)

**Solubility:**

Not applicable

**N/A = not available

Section 2 - Physical and Chemical Properties**

**Appearance:**

Yellow powder

**Molecular Weight:**

444.44 AMU

**Density:**

N/A

**Boiling Point:**

172°C

**Melting Point:**

N/A

**Freezing Point:**

N/A

**Vapor Pressure:**

N/A

**Vapor Density:**

N/A

**Saturated Vapor Concentration:**

N/A

**SG/Density:**

N/A

**Bulk Density:**

N/A

**Odor Threshold:**

N/A

**Volatile %:**

4-11%

**VOC Content:**

N/A

**Water Content:**

N/A

**Solvent Content:**

N/A

**Evaporation Rate:**

N/A

**Viscosity:**

N/A

**Partition Coefficient:**

N/A

**Decomposition Temperature:**

N/A

**Flash Point °F:**

-34

**Flash Point °C:**

-38

**Explosion Limits:**

Not applicable

**Flammability:**

Not applicable

**Autoignition Temperature:**

Not applicable

**Optical Rotation:**

-291°(+/- 5)

**Solubility:**

Not applicable

**N/A = not available

Section 3 - Stability and Reactivity**

**Form:**

Powder

**Stability:**

Stable

**Condition of Instability:**

May discolor on exposure to light.

**Material to Avoid:**

Strong oxidizing agents.

**Hazardous Decomposition Products:**

Carbon monoxide, carbon dioxide, nitrogen oxides.

**Flash Point °F:**

-34

**Flash Point °C:**

-38

**Explosion Limits:**

Not applicable

**Flammability:**

Not applicable

**Autoignition Temperature:**

Not applicable

**Optical Rotation:**

-291°(+/- 5)

**Solubility:**

Not applicable

**N/A = not available

Section 4 - Toxicological Information**

**Route of Exposure:**

**Skin Contact:**

May cause skin irritation.

**Skin Absorption:**

May be harmful if absorbed through the skin.

**Eye Contact:**

May cause eye irritation.

**Inhalation:**

May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

**Ingestion:**

Harmful if swallowed.

**Sensitization:**

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. Skin can cause skin photosensitization.

**Target Organ(s) or System(s):**


**Signs and Symptoms of Exposure:**

Can cause phototoxic reactions, gastrointestinal disturbances, tooth discoloration, tooth loss, and bone mineralization.

**RTECS Number:**

QI8750000

**Toxicity Data:**

- Multiple Route: 310 mg/kg (LD50) Gastrointestinal: Nausea, vomiting, liver jaundice, other or unclassified.
- Nutritional and Gross Metabolic: Changes in metabolic acidosis.
- Oral: Rat: 807 mg/kg (LD50)
- Intraperitoneal: Rat: 310 mg/kg (LD50)
- Intravenous: Rat: 129 mg/kg (LD50)
- Oral: Mouse: 678 mg/kg (LD50)
- Intraperitoneal: Mouse: 120 mg/kg (LD50)
- Subcutaneous: Mouse: 400 mg/kg (LD50)
- Intravenous: Mouse: 157 mg/kg (LD50)
- Oral: Guinea pig: 1875 mg/kg (LD50)

**Chronic Exposure - Carcinogen:**

Result: This product or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

**Chronic Exposure - Teratogen:**

Result: Possible increased risk of congenital malformations in the fetus.

**Rat:**

100 ug/m3 /24 h Inhalation:

Result: Effect on embryonic or fetal development: Fetal death.

1 mg/m3 /24 h Inhalation:

Result: Effect on embryonic or fetal development: Extraembryonic structures (e.g., placenta, umbilical cord).

**Unreported (9-14 DPREG):**

Effect on embryonic or fetal development: Fetal death.

**Fluka Chemical - Sigma-Aldrich Corporation:**

www.sigma-aldrich.com
Mouse 700 mg/kg Oral (14D POST)
Result: Specific Developmental Abnormalities: Skin and skin appendages.

Mammal 55 mg/kg Intravenous (8-18D PREG)
Result: Effects on Embryo or Fetus: Fetal toxicity (except death, e.g., stunted fetus).

Chronic Exposure - Mutagen

<table>
<thead>
<tr>
<th>Species</th>
<th>Dose</th>
<th>Route</th>
<th>Exposure Time</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>110 mg/kg</td>
<td>Intraperitoneal</td>
<td>24H</td>
<td>Micronucleus test</td>
</tr>
<tr>
<td>S. typhimurium</td>
<td></td>
<td></td>
<td></td>
<td>Histidine reversion (Ames)</td>
</tr>
</tbody>
</table>

Chronic Exposure - Reproductive Hazard

<table>
<thead>
<tr>
<th>Species</th>
<th>Dose</th>
<th>Route of Application</th>
<th>Exposure Time</th>
<th>Result: Effects on Newborn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman</td>
<td>200 mg/kg</td>
<td>Unreported (34-36 W PREG)</td>
<td></td>
<td>Delayed effects.</td>
</tr>
<tr>
<td>Woman</td>
<td>80 mg/kg</td>
<td>Unreported (1-39 W PREG)</td>
<td></td>
<td>Other postnatal measures or effects.</td>
</tr>
<tr>
<td>Rat</td>
<td>10 g/kg</td>
<td>Oral (8-21 D PREG/7 D POST)</td>
<td></td>
<td>Behavior.</td>
</tr>
<tr>
<td>Rat</td>
<td>863 mg/kg</td>
<td>Oral (4 D POST)</td>
<td></td>
<td>Behavior. Physical.</td>
</tr>
<tr>
<td>Rat</td>
<td>413 mg/kg</td>
<td>Oral (3 D POST)</td>
<td></td>
<td>Behavior. Physical.</td>
</tr>
<tr>
<td>Rat</td>
<td>700 mg/kg</td>
<td>Intramuscular (8-14 D PREG)</td>
<td></td>
<td>Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).</td>
</tr>
</tbody>
</table>

Section 12 - Ecological Information

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nodata Available.</td>
<td></td>
</tr>
</tbody>
</table>

Section 13 - Disposal Considerations

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate Method of Disposal</td>
<td>Substance or Preparation</td>
</tr>
<tr>
<td>Contact a licensed professional waste disposal service to dispose of this material.</td>
<td></td>
</tr>
<tr>
<td>Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.</td>
<td></td>
</tr>
<tr>
<td>Observe all federal, state, and local environmental regulations.</td>
<td></td>
</tr>
</tbody>
</table>

Section 11 - Transport Information

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Proper Shipping Name: None</td>
</tr>
<tr>
<td>Non-Hazardous</td>
<td>Non-hazardous for transport.</td>
</tr>
<tr>
<td>IATA</td>
<td>Non-Hazardous for Air Transport: Non-hazardous for air transport.</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbal of Danger</td>
<td>Xn</td>
</tr>
<tr>
<td>Indicator of Danger</td>
<td>Harmful</td>
</tr>
<tr>
<td>Risk Statements</td>
<td>R:22</td>
</tr>
<tr>
<td>Harmful if swallowed.</td>
<td></td>
</tr>
<tr>
<td>Safety Statements</td>
<td>S:22 36</td>
</tr>
<tr>
<td>Don't breathe dust. Wear suitable protective clothing.</td>
<td></td>
</tr>
</tbody>
</table>

United States Regulatory Information

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Listed</td>
<td>No</td>
</tr>
<tr>
<td>United States-State Regulatory Information</td>
<td>California Prop-65</td>
</tr>
<tr>
<td>This product or contains chemical(s) known to the state of California to cause reproductive toxicity.</td>
<td></td>
</tr>
<tr>
<td>Target organ(s): Liver, Teeth, Bones.</td>
<td></td>
</tr>
</tbody>
</table>

Canada Regulatory Information

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHMIS Classification</td>
<td>This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.</td>
</tr>
<tr>
<td>DSL</td>
<td>No</td>
</tr>
<tr>
<td>NDSL</td>
<td>No</td>
</tr>
</tbody>
</table>

Disclaimer

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Research Use Only. Not for drug, household or other uses.</td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td>The above information is believed to be correct, but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packingslip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.</td>
</tr>
</tbody>
</table>