Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: Tetracycline
Product Number: T3258
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3650 Squirrel Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 600 325 5052
Emergency Phone: 414 273 3800 Ext. 5896

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS No</th>
<th>SARA 313</th>
<th>EC No</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TETRACYCLINE FREE BASE</td>
<td>60-54-8</td>
<td>No</td>
<td>200-481-9</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula</th>
<th>Synonyms</th>
</tr>
</thead>
</table>
| C22H24N2O8 | Abrimycin, Abrucycline, Achromycin (naphthacene derivatives), Agromicina, Ambromycin, Ambrymacy, Amycy, Biocycline, Cetracycline suspension, Ceseocicin, Cyclodimycin, Cytorne, Deschloromobycyn, Hostacyclin, Liquamycin, Medycycline, 6-Methyl-1, 11-Diarylm-2-
| naphthacencarboxamide, Micyclcin, Neocycline, Oleicrin, Omepracyclin, Ostyrcycline, Pinnycyn, Polycycline (antibiotic), Resoxin, Roxacilin, Saniycin syrup, Tetacloxin, Tetra-Co, Tetracycline, Tetracycline I, Tetracycline II, Tetracycin, Tetralen, Tetrafli, Tsukelintolin, T-125, Veracin, Vetacyclinum |

Section 3 - Hazards Identification

Emergency Overview
Harmful if swallowed. Photosensitizer. Calif. Prop. 65 reproductive hazard. Target organ(s): Liver, Teeth, Bones.

HMIS Rating
Health: 3
Flammability: 0
Reactivity: 1

NFPA Rating
Health: 3
Flammability: 0
Reactivity: 1

*additional chronic hazards present.

Section 4 - First Aid Measures

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, wash 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. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media
Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spilt 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. Store at -20°C

Special Requirements
Light sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Mechanical exhaust required.

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

Sigma Chemical - T3258
Page 2
Sigma-Aldrich Corporation
www.sigma-aldrich.com
Section 9 - Physical/Chemical Properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Form</td>
<td>Powder</td>
</tr>
</tbody>
</table>

Molecular Weight: 444.44 AMU

pH: N/A

Boiling Point: N/A

Freezing Point: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Saturated Vapor Conc.: N/A

SG/Density: N/A

Bulk Density: N/A

Color Threshold: N/A

Volatile: N/A

VOC Content: N/A

Water Content: 4 - 11 %

Solvent Content: N/A

Evaporation Rate: N/A

Viscosity: N/A

Partition Coefficient: N/A

Decomposition Temp.: N/A

Flash Point °F: N/A

Flash Point °C: N/A

Explosion Limits: N/A

Flashiness: N/A

Autoignition Temp.: N/A

Optical Rotation: Degree of Rotation: -201 - 208 (+/A)

Solvent: MeOH; 10 g/l

Solvency: N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability: Stable

Conditions of Instability: May discolor on exposure to light.

Materials to Avoid: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

Section 11 - 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: Sensitization

Target Organ(s) or System(s): Liver, Teeth, Bones.

Signs and Symptoms of Exposure

Can cause phototoxic reactions, gastrointestinal disturbances, turn teeth yellow and reduce mineralization.

RTECS Number: QI8750000

Toxicity Data

Multiple - Woman: 310 MG/KG (LD50)

Remarks: Gastrintestinal nausea or 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 - Mice: 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 is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Chronic Exposure - Teratogen

Species: Dose: Route of Application: Exposure Time:

Rat: 100 UG/M3/24h Inhalation (1-2D PREG)

Result: Effects on Embryo or Fetus: Fetal death.

Rat: 1 MGG/M3/24h Inhalation (1-2D PREG)

Result: Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).

Rat: 3 GAA/KG Unreported (9-14 D PREG)

Result: Effects on Embryo or Fetus: Fetal death.
Section 12 - Ecological Information

No data available

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn

Indication of Danger: Harmful

Risk Statements

R: 22

Harmful if inhaled.
Harmful if swallowed.

Safety Statements

S: 22 36

Do not breathe dust. Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger: Harmful

Risk Statements

Harmful if swallowed.

Safety Statements

Do not breathe dust. Wear suitable protective clothing.

United States Regulatory Information

SARA Listed: No

United States - State Regulatory Information

California Prop - 65
This product is or contains chemical(s) known to the State of California to cause developmental toxicity.

Canada Regulatory Information

WHMIS Classification

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.

DSL: No
NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

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 packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.