MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information

Product Name	Tetracycline hydrochloride, meets USP testing specifications
Product Number	T4062
Brand	SIAL
Company	Sigma-Aldrich Canada, Ltd
Address	2149 Winston Park Drive Oakville ON L6H 6J8 CA
Technical Phone:	9058299500
Fax:	9058299292
Emergency Phone:	800-424-9300

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
TETRACYCLIN HYDROCHLORIDE, MEETS USP TESTING SPECS.	64-75-5	Yes

Formula	C22H24N2O8 ˇ HCl
Synonyms	Achromycin hydrochloride * ALA TET * Amycin, hydrochloride * Artomycin * Bristacycline * Cancycline-250 * Cefracycline tablets * Chlorhydrate de tetracycline (French) * Chlorowodorku tetracykliny (Polish) * Cyclopar * Diacycine * Dumocyclin * Hostacycline * Medamycin * Mephacyclin * NCI-C55561 * Neocycline B * Paltet * Panmycin hydrochloride * Partrex * Piracaps * Polycycline hydrochloride * Polyotic ointment * Qidtet * Quadracycline * Quatrex * Remicyclin * Ricycline * Ro-Cycline * Sanclomycine * Steclin * Stilciclina * Subamycin * Sumycin * Supramycin * Tefilin * Teline * Telotrex * Tet-Cy * Tetrabakat * Tetrabid * Tetrablet * Tetracaps * Tetrachel * Tetraciclina cloridrato (Italian) * Tetracompren * Tetracycline chlorohydrate * Tetracycline hydrochloride * Tetra-D * Tetrakap * Tetralution * Tetramavan * Tetra-wedel * Tetrosol * Topicycline * Triphacyclin * U-5965 * Unicin * Unimycin * Vetquamycin-324
RTECS Number:	QI9100000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful.

Possible risk of harm to the unborn child. Irritating to eyes, respiratory system and skin.

Calif. Prop. 65 developmental hazard. Possible sensitizer. Target organ(s): Liver. Teeth.

HMIS RATING
HEALTH: 2*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards 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 contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
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(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, 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 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.
Store at -20˚C

SPECIAL REQUIREMENTS
Light sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance Physical State: Solid

Property	Value	At Temperature or Pressure
Molecular Weight	480.91 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	220.0 - 223.0 ˚C	
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	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	

Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions of Instability: May discolor on exposure to light.
Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen chloride gas.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

SENSITIZATION
Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

TARGET ORGAN(S) OR SYSTEM(S)
Teeth. Bones. Liver.

SIGNS AND SYMPTOMS OF EXPOSURE
Exposure can cause: Nausea, vomiting, diarrhea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral
Rat
6443 mg/kg
LD50

Intraperitoneal
Rat
318 MG/KG
LD50

Subcutaneous
Rat
700 MG/KG
LD50
Remarks: Gastrointestinal:Hypermotility, diarrhea.

Intravenous
Rat

128 MG/KG
LD50

Oral
Mouse
2759 mg/kg
LD50

Intraperitoneal
Mouse
368 MG/KG
LD50

Intravenous
Mouse
157 MG/KG
LD50

NTP CARCINOGEN LIST

Rating: No evidence.
Species: Mouse/rat
Route: Feed

CHRONIC EXPOSURE - TERATOGEN
Result: Possible risk of congenital malformation in the fetus.

Species: Rat
Dose: 14 GM/KG
Route of Application: Oral
Exposure Time: (3D MALE/3D PRE-22D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Urogenital system.

Species: Rat
Dose: 240 MG/KG
Route of Application: Subcutaneous
Exposure Time: (16-20D PREG)
Result: Effects on Embryo or Fetus: Other effects to embryo.

Species: Rat
Dose: 240 MG/KG
Route of Application: Intramuscular
Exposure Time: (10-15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 600 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8-13D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 150 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (10D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse

Dose: 2250 MG/KG
Route of Application: Subcutaneous
Exposure Time: (10-18D PREG)
Result: Specific Developmental Abnormalities: Urogenital system. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 500 UMOL/L
Cell Type: fibroblast
Mutation test: DNA damage

Species: Human
Dose: 750 UMOL/L
Cell Type: fibroblast
Mutation test: Unscheduled DNA synthesis

Species: Human
Dose: 1250 UMOL/L
Cell Type: fibroblast
Mutation test: DNA inhibition

Species: Rat
Dose: 200 UMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Mouse
Dose: 31600 UG/L
Cell Type: mammary gland
Mutation test: DNA inhibition

Species: Mouse
Dose: 31600 UG/L
Cell Type: mammary gland
Mutation test: Other mutation test systems

Species: Mouse
Dose: 31600 UG/L
Exposure Time: 24H
Cell Type: mammary gland
Mutation test: Cytogenetic analysis

Species: Mouse
Dose: 120 MG/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Species: Mouse
Dose: 100 MG/L
Cell Type: mammary gland
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster
Dose: 3 MG/L
Cell Type: Embryo
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 6 GM/KG
Route of Application: Oral
Exposure Time: (9-14D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 425 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (14-18D PREG)
Result: Effects on Fertility: Abortion. Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).

Species: Rat
Dose: 450 MG/KG
Route of Application: Unreported
Exposure Time: (7-15D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat
Dose: 765 MG/KG
Route of Application: Unreported
Exposure Time: (7-15D PREG)
Result: Effects on Fertility: Abortion.

Species: Rat
Dose: 100 MG/KG
Route of Application: Intrauterine
Exposure Time: (1D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 900 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8-13D PREG)
Result: Effects on Embryo or Fetus: Fetal death. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 750 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1-6D PREG)
Result: Effects on Fertility: Abortion.

Species: Mouse
Dose: 2250 MG/KG
Route of Application: Parenteral
Exposure Time: (10-18D PREG)
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Rabbit
Dose: 9 GM/KG
Route of Application: Oral

Exposure Time: (8-16D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

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.
R: 36/37/38-63
Risk Statements: Irritating to eyes, respiratory system and skin. Possible risk of harm to the unborn child.
S: 26-36/37
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Harmful.
Risk Statements: Possible risk of harm to the unborn child. Irritating to eyes, respiratory system and skin.
Safety Statements: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wear suitable protective clothing. Do not breathe dust.
US Statements: Calif. Prop. 65 developmental hazard. Possible sensitizer. Target organ(s): Liver. Teeth.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65
California Prop - 65: This product is or contains chemical(s)

known to the state of California to cause developmental toxicity. 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: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D or manufacturing use. Not for prescription compound 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.