

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name URETHANE
Product Number U2500
Brand SIGMA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
URETHANE	51-79-6	Yes

Formula C3H7NO2
Synonyms A 11032 * Aethylcarbamate (German) * Aethylurethan (German) * Carbamidsaeure-aethylester (German) * Ethyl carbamate * Ethylester kyseliny karbaminove (Czech) * Ethylurethan * Ethyl urethane * O-Ethylurethane * Leucethane * Leucothane * NSC 746 * Pracarbamin * Pracarbamine * RCRA waste number U238 * U-Compound * Uretan * Uretan etylowy (Polish) * Urethan * Urethane * X 41

RTECS Number: FA8400000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause cancer. May cause harm to the unborn child. Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Target organ(s): Liver. Bone marrow. Calif. Prop. 65 carcinogen & developmental hazard.

HMIS RATING

HEALTH: 2*

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

*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 breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

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

FLASH POINT

198 °F 92 °C Method: closed cup

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

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. Wear disposable coveralls and discard them after use.

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. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

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

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 full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
	Color: Colorless	
	Form: Fine crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	89.09 AMU	
pH	N/A	
BP/BP Range	182.0 - 184.0 °C	760 mmHg
MP/MP Range	48 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	3.07 g/l	
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	198 °F 92 °C	Method: closed cup
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.

Materials to Avoid: Strong oxidizing agents, Strong acids, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

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

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

Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Immune system. Liver. Bone marrow. Central nervous system.

SIGNS AND SYMPTOMS OF EXPOSURE

Causes depression of bone marrow and occasionally focal degeneration in the brain, can also produce CNS depression, nausea and vomiting. Can cause CNS depression.

TOXICITY DATA

Oral

Rat

1809 mg/kg

LD50

Intraperitoneal

Rat

1500 MG/KG

LD50

Intramuscular

Rat

1400 MG/KG

LD50

Oral

Mouse

2500 mg/kg

LD50

Intraperitoneal

Mouse

1539 MG/KG

LD50

Subcutaneous

Mouse

1750 MG/KG

LD50

Intravenous

Mouse
500 MG/KG
LD50

CHRONIC EXPOSURE - CARCINOGEN

Species: Rat
Route of Application: Oral
Dose: 30 GM/KG
Exposure Time: 52W
Frequency: C
Result: Liver:Tumors. Lungs, Thorax, or Respiration:Tumors.
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Intraperitoneal
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS
criteria. Tumorigenic Effects: Uterine tumors. Liver:Tumors.

Species: Rat
Route of Application: Intraperitoneal
Dose: 500 MG/KG
Result: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax,
or Respiration:Tumors.

Species: Rat
Route of Application: Subcutaneous
Dose: 8 GM/KG
Exposure Time: 8W
Frequency: I
Result: Sense Organs and Special Senses (Nose, Eye, Ear, and
Taste):Eye:Tumors. Tumorigenic:Equivocal tumorigenic agent by
RTECS criteria.

Species: Mouse
Route of Application: Oral
Dose: 12 GM/KG
Exposure Time: 15D
Frequency: C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Skin and
Appendages: Other: Tumors.

Species: Mouse
Route of Application: Inhalation
Dose: 2500 MG/M3
Exposure Time: 10D-
Frequency: C
Result: Lungs, Thorax, or Respiration:Tumors.
Tumorigenic:Carcinogenic by RTECS criteria.

Species: Mouse
Route of Application: Inhalation
Dose: 138 PPM
Exposure Time: 130D
Frequency: I
Result: Lungs, Thorax, or Respiration:Tumors.
Tumorigenic:Neoplastic by RTECS criteria.

Species: Mouse
Route of Application: Skin
Dose: 90 GM/KG
Exposure Time: 56W

Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors. Skin and Appendages: Other: Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Result: Tumorigenic: Neoplastic by RTECS criteria. Tumorigenic Effects: Uterine tumors. Tumorigenic Effects: Ovarian tumors.

Species: Mouse
Route of Application: Intraperitoneal
Result: Tumorigenic Effects: Uterine tumors. Tumorigenic: Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 7 MG/KG
Exposure Time: 39W
Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.

Species: Mouse
Route of Application: Subcutaneous
Result: Lungs, Thorax, or Respiration: Tumors. Tumorigenic Effects: Uterine tumors. Tumorigenic: Carcinogenic by RTECS criteria.

Species: Mouse
Route of Application: Subcutaneous
Result: Tumorigenic: Carcinogenic by RTECS criteria. Tumorigenic Effects: Uterine tumors. Lungs, Thorax, or Respiration: Tumors.

Species: Mouse
Route of Application: Subcutaneous
Dose: 200 MG/KG
Result: Tumorigenic Effects: Ovarian tumors. Tumorigenic: Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.

Species: Mouse
Route of Application: Intravenous
Result: Tumorigenic Effects: Uterine tumors. Lungs, Thorax, or Respiration: Tumors. Tumorigenic: Neoplastic by RTECS criteria.

Species: Mouse
Route of Application: Intravenous
Dose: 1 GM/KG
Result: Skin and Appendages: Other: Tumors. Lungs, Thorax, or Respiration: Tumors. Tumorigenic: Neoplastic by RTECS criteria.

Species: Mouse
Route of Application: Unreported
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic Effects: Uterine tumors. Lungs, Thorax, or Respiration: Tumors.

Species: Mouse
Route of Application: Unreported
Result: Tumorigenic Effects: Uterine tumors.

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.
Liver: Tumors.

Species: Monkey
Route of Application: Oral
Dose: 325 GM/KG
Exposure Time: 5Y
Frequency: I
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS
criteria. Lungs, Thorax, or Respiration: Tumors. Liver: Tumors.

Species: Hamster
Route of Application: Oral
Dose: 55 GM/KG
Exposure Time: 64W
Frequency: C
Result: Tumorigenic: Neoplastic by RTECS criteria.
Gastrointestinal: Tumors. Skin and Appendages: Other: Tumors.

Species: Hamster
Route of Application: Skin
Dose: 1000 MG/KG
Exposure Time: W
Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria. Skin and
Appendages: Other: Tumors.

Species: Hamster
Route of Application: Subcutaneous
Dose: 1 GM/KG
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS
criteria. Gastrointestinal: Tumors. Skin and Appendages: Other:
Tumors.

Species: Mouse
Route of Application: Oral
Dose: 1200 MG/KG
Exposure Time: 4W
Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria. Lungs,
Thorax, or Respiration: Tumors. Blood: Lymphomas including
Hodgkin's disease.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 880 MG/KG
Exposure Time: 7W
Frequency: I
Result: Tumorigenic: Carcinogenic by RTECS criteria.
Liver: Tumors. Sense Organs and Special Senses (Nose, Eye, Ear,
and Taste): Ear: Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 4990 UG/KG
Result: Tumorigenic: Neoplastic by RTECS criteria. Lungs, Thorax,
or Respiration: Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 800 MG/KG
Result: Tumorigenic: Neoplastic by RTECS criteria. Lungs, Thorax,

or Respiration:Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 10 MG/KG
Result: Lungs, Thorax, or Respiration:Tumors.
Tumorigenic:Neoplastic by RTECS criteria.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 400 MG/KG
Result: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax,
or Respiration:Tumors.

Species: Mouse
Route of Application: Subcutaneous
Dose: 500 MG/KG
Result: Tumorigenic:Tumor types after systemic administration
not seen spontaneously. Lungs, Thorax, or
Respiration:Bronchiogenic carcinoma. Tumorigenic:Neoplastic by
RTECS criteria.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 500 MG/KG
Result: Lungs, Thorax, or Respiration:Tumors.
Tumorigenic:Neoplastic by RTECS criteria.

Species: Mouse
Route of Application: Intraperitoneal
Result: Tumorigenic:Neoplastic by RTECS criteria. Tumorigenic
Effects: Uterine tumors. Lungs, Thorax, or Respiration:Tumors.

Species: Mouse
Route of Application: Oral
Dose: 1280 MG/KG
Exposure Time: 4W
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Lungs,
Thorax, or Respiration:Tumors. Blood:Lymphomas including
Hodgkin's disease.

IARC CARCINOGEN LIST

Rating: Group 2B

NTP CARCINOGEN LIST

Rating: Anticipated to be a carcinogen.

CHRONIC EXPOSURE - TERATOGEN

Result: May cause congenital malformation in the fetus.

Species: Rat
Dose: 7 GM/KG
Route of Application: Oral
Exposure Time: (6-12D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death,
e.g., stunted fetus).

Species: Rat
Dose: 2 GM/KG

Route of Application: Oral
Exposure Time: (8-9D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 1200 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (9D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 1250 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (9D PREG)
Result: Specific Developmental Abnormalities: Hepatobiliary system. Effects on Embryo or Fetus: Fetal death.

Species: Mouse
Dose: 1250 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (11D PREG)
Result: Specific Developmental Abnormalities: Respiratory system.

Species: Mouse
Dose: 45 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-14D PREG)
Result: Specific Developmental Abnormalities: Eye, ear.

Species: Mouse
Dose: 550 MG/KG
Route of Application: Subcutaneous
Exposure Time: (7-17D PREG)
Result: Specific Developmental Abnormalities: Immune and reticuloendothelial system. Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Species: Mouse
Dose: 30 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1-18D PREG)
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Respiratory system. Specific Developmental Abnormalities: Urogenital system.

Species: Mouse
Dose: 490 MG/KG
Route of Application: Intravenous
Exposure Time: (13-17D PREG)
Result: Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).

Species: Dog
Dose: 1 GM/KG
Route of Application: Intravenous
Exposure Time: (20D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Hamster
Dose: 499 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Skin and skin appendages. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Central nervous system.

Species: Hamster
Dose: 499 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Hamster
Dose: 400 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Species: Hamster
Dose: 400 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Hamster
Dose: 200 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Central nervous system.

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 3 MMOL/L
Cell Type: fibroblast
Mutation test: DNA damage

Species: Human
Dose: 10 UMOL/L
Cell Type: HeLa cell
Mutation test: Unscheduled DNA synthesis

Species: Human
Dose: 20 MG/L
Cell Type: fibroblast
Mutation test: Unscheduled DNA synthesis

Species: Human
Dose: 200 MMOL/L
Cell Type: fibroblast
Mutation test: DNA inhibition

Species: Human
Dose: 10 MMOL/L

Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Species: Rat
Route: Intraperitoneal
Dose: 15 GM/KG
Exposure Time: 10W
Mutation test: Micronucleus test

Species: Rat
Route: Oral
Dose: 600 MG/KG
Mutation test: Micronucleus test

Species: Rat
Route: Intraperitoneal
Dose: 800 MG/KG
Mutation test: Morphological transformation.

Species: Rat
Route: Oral
Dose: 5040 MG/KG
Exposure Time: 6W
Mutation test: Morphological transformation.

Species: Rat
Dose: 100 MMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Rat
Dose: 100 UMOL/L
Cell Type: liver
Mutation test: Unscheduled DNA synthesis

Species: Rat
Dose: 1 MOL/L
Cell Type: Other cell types
Mutation test: Unscheduled DNA synthesis

Species: Rat
Route: Intraperitoneal
Dose: 1 GM/KG
Mutation test: DNA inhibition

Species: Rat
Route: Intraperitoneal
Dose: 100 MG/KG
Mutation test: Other mutation test systems

Species: Rat
Route: Intraperitoneal
Dose: 400 MG/KG
Mutation test: Sister chromatid exchange

Species: Rat
Route: Intravenous
Dose: 800 MG/KG
Mutation test: Cytogenetic analysis

Species: Rat
Route: Intraperitoneal

Dose: 100 MG/KG
Mutation test: Cytogenetic analysis

Species: Rat
Route: Unreported
Dose: 400 MG/KG
Mutation test: Sister chromatid exchange

Species: Rat
Dose: 5 MMOL/L
Cell Type: liver
Mutation test: Sister chromatid exchange

Species: Mouse
Route: Intraperitoneal
Dose: 30 MG/KG
Exposure Time: 2D
Mutation test: Micronucleus test

Species: Mouse
Route: Parenteral
Dose: 40 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Route: Oral
Dose: 900 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Route: Skin
Dose: 2 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Route: Subcutaneous
Dose: 1 GM/KG
Mutation test: specific locus test

Species: Mouse
Dose: 1100 UMOL/L
Cell Type: Embryo
Mutation test: Morphological transformation.

Species: Mouse
Dose: 500 UG/L
Cell Type: fibroblast
Mutation test: Morphological transformation.

Species: Mouse
Route: Parenteral
Dose: 1 GM/KG
Mutation test: DNA damage

Species: Mouse
Route: Intraperitoneal
Dose: 400 MG/KG
Mutation test: DNA

Species: Mouse
Route: Parenteral
Dose: 750 MG/KG

Mutation test: Other mutation test systems

Species: Mouse

Route: Intraperitoneal

Dose: 750 MG/KG

Mutation test: Unscheduled DNA synthesis

Species: Mouse

Route: Intraperitoneal

Dose: 500 MG/KG

Mutation test: DNA inhibition

Species: Mouse

Route: Skin

Dose: 13600 UMOL/KG

Mutation test: DNA inhibition

Species: Mouse

Route: Subcutaneous

Dose: 1200 MG/KG

Mutation test: DNA inhibition

Species: Mouse

Route: Intraperitoneal

Dose: 741 MG/KG

Mutation test: Other mutation test systems

Species: Mouse

Route: Subcutaneous

Dose: 20 MG/KG

Mutation test: Cytogenetic analysis

Species: Mouse

Route: Intraperitoneal

Dose: 5 GM/KG

Exposure Time: 10D

Mutation test: Cytogenetic analysis

Species: Mouse

Route: Skin

Dose: 8 GM/KG

Mutation test: Cytogenetic analysis

Species: Mouse

Route: Inhalation

Dose: 1280 UG/L

Exposure Time: 48H

Mutation test: Cytogenetic analysis

Species: Mouse

Route: Intraperitoneal

Dose: 3300 UMOL/KG

Mutation test: Sister chromatid exchange

Species: Mouse

Route: Inhalation

Dose: 220 UG/L

Mutation test: Sister chromatid exchange

Species: Mouse

Route: Intravenous

Dose: 1100 UMOL/KG

Mutation test: Sister chromatid exchange

Species: Mouse
Route: Unreported
Dose: 400 MG/KG

Mutation test: Sister chromatid exchange

Species: Mouse
Dose: 670 MG/KG
Cell Type: E. coli
Mutation test: Host-mediated assay

Species: Mouse
Route: Intraperitoneal
Dose: 25 GM/KG
Exposure Time: 5D
Mutation test: sperm

Species: Hamster
Route: Intraperitoneal
Dose: 1 GM/KG
Mutation test: Morphological transformation.

Species: Hamster
Dose: 80 UG/L
Cell Type: kidney
Mutation test: Morphological transformation.

Species: Hamster
Dose: 10 GM/L
Cell Type: lung
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 8 GM/L
Exposure Time: 48H
Cell Type: fibroblast
Mutation test: Cytogenetic analysis

Species: Hamster
Route: Unreported
Dose: 400 MG/KG
Mutation test: Sister chromatid exchange

Species: Hamster
Dose: 10 MMOL/L
Cell Type: fibroblast
Mutation test: Sister chromatid exchange

Species: Hamster
Route: Intraperitoneal
Dose: 400 MG/KG
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 2 GM/KG
Route of Application: Oral
Exposure Time: (6-7D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 1200 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Rat
Dose: 10 GM/KG
Route of Application: Intraperitoneal
Exposure Time: (20D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rat
Dose: 1200 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Rat
Dose: 1300 MG/KG
Route of Application: Intravenous
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Mouse
Dose: 1600 MG/KG
Route of Application: Oral
Exposure Time: (4-7D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Mouse
Dose: 4 GM/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Mouse
Dose: 1500 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Tumorigenic Effects: Other reproductive system tumors.

Species: Mouse
Dose: 3750 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (5D PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders.

Species: Mouse
Dose: 3 GM/KG
Route of Application: Intraperitoneal
Exposure Time: (6D PRE)
Result: Effects on Fertility: Other measures of fertility
Maternal Effects: Ovaries, fallopian tubes.

Species: Mouse

Dose: 1200 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (7-9D 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).

Species: Mouse
Dose: 1 GM/KG
Route of Application: Intraperitoneal
Exposure Time: (18D PREG)
Result: Effects on Newborn: Biochemical and metabolic.

Species: Mouse
Dose: 1 GM/KG
Route of Application: Subcutaneous
Exposure Time: (15D PREG)
Result: Effects on Newborn: Stillbirth.

Species: Mouse
Dose: 418 MG/KG
Route of Application: Subcutaneous
Exposure Time: (6-14D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). 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. Observe all federal, state, and local environmental regulations. (DN)Requires special label: "Contains a substance which is regulated by Danish work environmental law due to the risk of carcinogenic properties."

Section 14 - Transport Information

DOT

Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.
UN#: 3077
Class: 9
Packing Group: Packing Group III
Hazard Label: Class 9
PIH: Not PIH

IATA

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

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.
R: 45
Risk Statements: May cause cancer.

S: 53-45

Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: May cause cancer. May cause harm to the unborn child. Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Target organ(s): Liver. Bone marrow. Calif. Prop. 65 carcinogen & developmental hazard.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 0.1 %

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 cancer.

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 use only. Not for drug, household or other uses.

WARRANTY

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