SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information

Product Name	17A-ETHYNYLESTRADIOL
Product Number	E4876
Brand	SIGMA
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
17A-ETHYNYLESTRADIOL	57-63-6	No

Formula $C_{20}H_{24}O_{2}$

Synonyms Amenoron * Aethinyoestradiol (German) * Chee-O-Gen * Chee-O-Genf * 3,17-beta-Dihydroxy-17-alpha-ethynyl-1,3,5(10)-oestratriene * 3,17-beta-Dihydroxy-17-alpha-ethynyl-1,3,5(10)-estratriene * Diognat-E * Diogyn-E * Diprol * Dyloform * EE * EE(sub 2) * EED * EO * Esteed * Estigyn * Estinyl * Eston-E * Estoral * Estoral (orion) * Estorals * Estradiol, 17-ethynyl- * Estra-1,3,5(10)-triene-3,17-beta-diol, 17-alpha-ethynyl- * Ethidol * Ethinoral * 17-alpha-Ethinyl-3,17-dihydroxy-delta(sup 1,3,5)-estratriene * Ethinyl estradiol * 17-Ethinylestradiol * 17-Ethinyl-3,17-estradiol * 17-alpha-Ethinylestradiol * 17-alpha-Ethinyl-17-beta-estradiol * 17-alpha-Ethinylestra-1,3,5(10)-triene-3,17-beta-diol * Ethinylestriol * Ethinyloestradiol * 17-Ethinyl-3,17-oestradiol * Ethinyl-oestranol * 17-alpha-Ethinyloestra-1,3,5(10)-triene-3,17-beta-diol * 17-alpha-Ethinyl-delta(sup 1,3,5(10))oestratriene-3,17-beta-diol * Ethinyloestriol * 17-Ethynyl-3,17-dihydroxy-1,3,5-oestratriene * Ethynylestradiol * 17-alpha-Ethynylestradiol * 17-alpha-Ethynylestradiol-17-beta * 17-alpha-Ethynyl-1,3,5(10)-estratriene-3,17-beta-diol * 17-alpha-Ethynylestra-1,3,5(10)-triene-3,17-beta-diol * Ethynyloestradiol * 17-Ethynyloestradiol * 17-alpha-Ethynyloestradiol * 17-alpha-Ethynyl-17-beta-oestradiol * 17-alpha-Ethynyloestradiol-17-beta * 17-alpha-Ethynyl-1,3,5-oestratriene-3,17-beta-dio

* 17-alpha-Ethynyl-1,3,5(10)-oestratriene-3,17-beta-diol *

17-alpha-Ethynyloestra-1,3,5(10)-triene-3,17-beta-diol * Eticyclin * Eticyc

RTECS Number: RC8925000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause cancer. Harmful if swallowed.

Target organ(s): Male reproductive system. Female reproductive system. Calif. Prop. 65 carcinogen.

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 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

N/A

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. Avoid all contact.

STORAGE

Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS

Light sensitive.

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

Property	Value	At Temperature or Pressure
Molecular Weight	296.41 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	182.0 - 183.0 °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	Solvent: 50 mg/ml EtOH clear, colorless

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.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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

TARGET ORGAN(S) OR SYSTEM(S)

Male reproductive system. Female reproductive system.

TOXICITY DATA

Oral
Rat
960 mg/kg
LD50

Intraperitoneal
Rat

471 MG/KG
LD50
Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Kidney, Ureter, Bladder:Other changes.

Subcutaneous
Rat
>2 GM/KG
LD50
Remarks: Behavioral:Somnolence (general depressed activity). Blood: Hemorrhage.

Oral
Mouse
950 mg/kg
LD50

Intraperitoneal
Mouse
250 MG/KG
LD50
Remarks: Behavioral:Ataxia. Behavioral:Convulsions or effect on seizure threshold. Kidney, Ureter, Bladder:Other changes.

Subcutaneous
Mouse
>3 GM/KG
LD50
Remarks: Behavioral:Somnolence (general depressed activity). Blood: Hemorrhage.

CHRONIC EXPOSURE - CARCINOGEN

Result: There is sufficient evidence for the carcinogenicity of ethinylestradiol in experimental animals. In the absence of adequate data in humans, it is reasonable, for practical purposes to regard ethinylestradiol as if it presented a carcinogenic risk to humans. Studies in humans strongly suggest that the administration of estrogens is causally related to an increased incidence of endometrial carcinoma; there is no evidence that ethinylestradiol is different from other estrogens in this respect. IARC Monograph, volume 21, page 249, 1979.

Species: Woman
Route of Application: Oral
Dose: 2738 UG/KG
Exposure Time: 10Y
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Angiosarcoma.

Species: Rat
Route of Application: Oral
Dose: 6 UG/KG
Exposure Time: 2Y
Frequency: C
Result: Skin and Appendages: Other: Tumors. Endocrine:Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Implant
Dose: 5 MG/KG
Result: Tumorigenic:Carcinogenic by RTECS criteria. Skin and Appendages: Other: Tumors.

Species: Hamster
Route of Application: Implant
Dose: 621 MG/KG
Result: Tumorigenic:Neoplastic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors.

Species: Rat
Route of Application: Oral
Dose: 245 MG/KG
Exposure Time: 35W
Frequency: C
Result: Tumorigenic Effects: Uterine tumors Tumorigenic Effects: Ovarian tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Hamster
Route of Application: Implant
Dose: 800 MG/KG
Exposure Time: 34W

Frequency: I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Kidney, Ureter, Bladder:Tumors.

Species: Woman
Route of Application: Oral
Dose: 102 MG/KG
Exposure Time: 5Y
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

Species: Rat
Route of Application: Implant
Dose: 5 MG/KG
Result: Skin and Appendages: Other: Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

NTP CARCINOGEN LIST

Rating: Anticipated to be a carcinogen.

CHRONIC EXPOSURE - TERATOGEN

Result: Laboratory experiments have shown teratogenic effects.

Species: Rat
Dose: 750 UG/KG
Route of Application: Oral
Exposure Time: (15-17D PREG)
Result: Specific Developmental Abnormalities: Skin and skin appendages.

Species: Rat
Dose: 600 UG/KG
Route of Application: Subcutaneous
Exposure Time: (17-20D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Mouse
Dose: 200 UG/KG
Route of Application: Oral
Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Effects on Embryo or Fetus: Fetal death.

Species: Mouse
Dose: 70 UG/KG
Route of Application: Oral
Exposure Time: (11-17D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Mouse
Dose: 180 UG/KG
Route of Application: Subcutaneous
Exposure Time: (11-19D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 5 NMOL/L
Cell Type: mammary gland
Mutation test: Unscheduled DNA synthesis

Species: Human
Dose: 50 UMOL/L
Cell Type: lymphocyte
Mutation test: DNA inhibition

Species: Human
Dose: 1 MG/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Human
Dose: 1 MG/L
Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Species: Rat
Route: Oral
Dose: 12600 UG/KG
Exposure Time: 6W
Mutation test: Morphological transformation.

Species: Rat
Dose: 10700 UG/L
Cell Type: Embryo
Mutation test: Morphological transformation.

Species: Rat
Route: Oral
Dose: 1390 NMOL/KG
Mutation test: DNA

Species: Rat
Dose: 10 NMOL/L
Cell Type: Other cell types
Mutation test: DNA

Species: Rat
Dose: 15 UMOL/L
Cell Type: liver
Mutation test: Unscheduled DNA synthesis

Species: Rat
Route: Oral
Dose: 500 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Rat
Route: Subcutaneous
Dose: 3500 UG/KG
Exposure Time: 7D
Mutation test: Unscheduled DNA synthesis

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

Species: Mouse
Route: Intraperitoneal
Dose: 1 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Dose: 10 UMOL/L
Cell Type: fibroblast
Mutation test: Morphological transformation.

Species: Mouse
Route: Subcutaneous
Dose: 400 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Mouse
Dose: 1 MG/L
Cell Type: Embryo
Mutation test: Unscheduled DNA synthesis

Species: Mouse
Dose: 740 UG/L
Cell Type: Other cell types
Mutation test: Other mutation test systems

Species: Mouse
Route: Intraperitoneal
Dose: 1 MG/KG
Mutation test: Sister chromatid exchange

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

Species: Hamster
Dose: 50 UMOL/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Species: Hamster
Route: Subcutaneous
Dose: 160 MG/KG
Exposure Time: 20W
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 10 UMOL/L
Cell Type: ovary
Mutation test: Sister chromatid exchange

Species: Hamster
Dose: 75 UMOL/L
Cell Type: fibroblast
Mutation test: SLN

Species: Domestic Animals
Dose: 74100 UG/L
Cell Type: Other cell types
Mutation test: Other mutation test systems

Species: Cattle, Horse
Dose: 7410 UG/L
Cell Type: Other cell types
Mutation test: Other mutation test systems

Species: Cattle, Horse
Dose: 7410 UG/L
Cell Type: Other cell types
Mutation test: Cytogenetic analysis

Species: Domestic Animals
Dose: 74100 UG/L
Cell Type: Other cell types
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Woman
Dose: 500 UG/KG

Route of Application: Oral
Exposure Time: (5D PRE)
Result: Maternal Effects: Uterus, cervix, vagina. Effects on Fertility: Other measures of fertility

Species: Woman
Dose: 500 UG/KG
Route of Application: Oral
Exposure Time: (5D PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders. Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Woman
Dose: 160 UG/KG
Route of Application: Oral
Exposure Time: (57W PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Woman
Dose: 20 UG/KG
Route of Application: Unreported
Exposure Time: (4D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Woman
Dose: 500 UG/KG
Route of Application: Unreported
Exposure Time: (1-5D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Rat
Dose: 560 UG/KG
Route of Application: Oral
Exposure Time: (14D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat
Dose: 4500 NG/KG
Route of Application: Oral
Exposure Time: (1-9D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 250 UG/KG
Route of Application: Oral
Exposure Time: (1-4D PREG)
Result: Effects on Fertility: Other measures of fertility Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Rat
Dose: 860 NG/KG
Route of Application: Oral
Exposure Time: (1D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Rat
Dose: 55 UG/KG

Route of Application: Oral
Exposure Time: (11D PRE)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Rat
Dose: 1 MG/KG
Route of Application: Subcutaneous
Exposure Time: (10D MALE)
Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands. Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 1 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Rat
Dose: 5 UG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PRE)
Result: Maternal Effects: Ovaries, fallopian tubes. Maternal Effects: Uterus, cervix, vagina. Effects on Fertility: Other measures of fertility

Species: Rat
Dose: 4 UG/KG
Route of Application: Subcutaneous
Exposure Time: (1D MALE)
Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat
Dose: 28 UG/KG
Route of Application: Subcutaneous
Exposure Time: (3-9D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat
Dose: 10 MG/KG
Route of Application: Implant
Exposure Time: (24D PRE)
Result: Effects on Fertility: Other measures of fertility Maternal Effects: Uterus, cervix, vagina. Maternal Effects: Ovaries, fallopian tubes.

Species: Rat
Dose: 130 UG/KG
Route of Application: Unreported
Exposure Time: (13D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 26 UG/KG
Route of Application: Unreported
Exposure Time: (13D PRE)
Result: Maternal Effects: Ovaries, fallopian tubes.

Species: Mouse
Dose: 300 NG/KG

Route of Application: Oral
Exposure Time: (3D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 40 UG/KG
Route of Application: Oral
Exposure Time: (3-4D PREG)
Result: Effects on Fertility: Abortion.

Species: Mouse
Dose: 120 UG/KG
Route of Application: Oral
Exposure Time: (1D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Mouse
Dose: 70 UG/KG
Route of Application: Oral
Exposure Time: (11-17D PREG)
Result: Effects on Newborn: Delayed effects.

Species: Mouse
Dose: 280 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (28D PRE)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Mouse
Dose: 1200 NG/KG
Route of Application: Subcutaneous
Exposure Time: (3D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 400 UG/KG
Route of Application: Subcutaneous
Exposure Time: (11-12D PREG)
Result: Tumorigenic Effects: Testicular tumors.

Species: Mouse
Dose: 280 MG/KG
Route of Application: Intravaginal
Exposure Time: (28D PRE)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Monkey
Dose: 500 UG/KG
Route of Application: Oral
Exposure Time: (1-6D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Rabbit
Dose: 4 UG/KG
Route of Application: Oral
Exposure Time: (1D PREG)
Result: Effects on Fertility: Other measures of fertility

Species: Rabbit

Dose: 100 UG/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rabbit
Dose: 25 UG/KG
Route of Application: Subcutaneous
Exposure Time: (1D PREG)

Result: Effects on Fertility: Other measures of fertility

Species: Rabbit
Dose: 6 UG/KG
Route of Application: Subcutaneous
Exposure Time: (1-3D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rabbit
Dose: 19 UG/KG
Route of Application: Unreported
Exposure Time: (1-19D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rabbit
Dose: 125 UG/KG
Route of Application: Unreported
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Hamster
Dose: 20 MG/KG
Route of Application: Oral
Exposure Time: (4D PRE)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles). Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Hamster
Dose: 90 MG/KG
Route of Application: Oral
Exposure Time: (1-9D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Hamster
Dose: 70 UG/KG
Route of Application: Oral
Exposure Time: (7D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Hamster
Dose: 20 MG/KG

Route of Application: Implant
Exposure Time: (10D PRE)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Hamster

Dose: 4 MG/KG
Route of Application: Implant
Exposure Time: (10D PRE)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles).

Species: Hamster
Dose: 160 MG/KG
Route of Application: Implant
Exposure Time: (55W MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.

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: 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: T
Indication of Danger: Toxic.
R: 45-22
Risk Statements: May cause cancer. Harmful if swallowed.
S: 53-45-36/37/39
Safety Statements: 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). Wear suitable protective clothing, gloves, and eye/face protection.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Toxic.

Risk Statements: May cause cancer. Harmful if swallowed.
Safety Statements: 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). Wear suitable protective clothing, gloves, and eye/face protection.
US Statements: Target organ(s): Male reproductive system. Female reproductive system. Calif. Prop. 65 carcinogen.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

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 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: No
NDSL: Yes

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.
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