Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name:
Product Number:
Brand:
Company:
Address:
City, State, Zip, Country:
Technical Phone:
Fax:
Emergency Phone:

Section 2 - Composition/Information on Ingredient

Substance Name:
CAS No:
SARA 313:
EC no:
Annex 1 Index Number:

Section 3 - Hazards Identification

Emergency Overview
Toxic:
May cause cancer.
Target organ(s): Female reproductive system. Male reproductive system.

HMIS Rating
Health: D
Flammability: 0
Reactivity: 0

NFPA Rating
Health: 0
Flammability: 0
Reactivity: 0

Section 4 - First Aid Measures

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

Inhalation Exposure:
If inhaled, move 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. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp:
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, or clothing. Avoid prolonged or repeated exposure.

Section 10 - Other Information

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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
Government approved 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

<table>
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<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
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<tr>
<td>pH</td>
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</tr>
<tr>
<td>B/W/BP Range</td>
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<tr>
<td>MP/MP Range</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<td>Saturated Vapor Conc.</td>
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<td>SG/Density</td>
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<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatility</td>
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<tr>
<td>VOC Content</td>
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</tr>
<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<tr>
<td>Evaporation Rate</td>
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<tr>
<td>Viscosity</td>
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<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point °F</td>
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<tr>
<td>Flash Point °C</td>
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<tr>
<td>Explosion Limits</td>
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<td>Flammability</td>
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<td>Autoignition Temp</td>
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<tr>
<td>Optical Rotation Degree of Rotation</td>
<td>Solvent:EtOH:H2O:1:110 g/l</td>
</tr>
</tbody>
</table>

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Solubility
N/A
N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable.

Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

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

Ingestion
May be harmful if swallowed.

Target Organ(s) or System(s)
Female reproductive system. Male reproductive system.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number:
KG2975000

Chronic Exposure - Carcinogen
Result: There is sufficient evidence for the carcinogenicity of b-estradiol in experimental animals. In the absence of adequate data in humans, it is reasonable, for practical purposes, to regard b-estradiol 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 b-estradiol is different from other estrogens in this respect. IARC Monograph, volume 21, page 312, 1979. The National Toxicology Program (Tenth Report on Carcinogens) has determined that sternal estrogens are known to be human carcinogens based on sufficient evidence of carcinogenicity in humans, which indicates a causal relationship between exposure to steroidal estrogens and human cancer.

Rat - Intraperitoneal: 1400 MG/KG 13W 1
Result: Tumorigenic; Carcinogenic by RTECS criteria. Endocrine/Tumors.

Rat - Implant: 100 MG/KG 52W C
Result: Tumorigenic; Carcinogenic by RTECS criteria. Skin and Appendages: Other. Tumors.

Mouse - Oral: 84 MG/KG 20W C
Result: Tumorigenic; Carcinogenic by RTECS criteria. Tumorigenic Effects: Uterine tumors

Guinea pig - Subcutaneous: 7 MG/KG 12W 1
Result: Tumorigenic; Equivocal tumorgenic agent by RTECS criteria. Tumorigenic Effects: Uterine tumors

Guinea pig - Implant: 1200 UG/KG
Result: Tumorigenic; Equivocal tumorgenic agent by RTECS criteria. Tumorigenic; Tumors at site or application.

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<table>
<thead>
<tr>
<th>Species</th>
<th>Route of Application</th>
<th>Exposure Time</th>
<th>Chronic Exposure - Mutagen</th>
<th>Cell Type</th>
<th>Mutation Test</th>
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<tr>
<td>Human</td>
<td>5 UMOL/L</td>
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<td>Mouse</td>
<td>Mammary gland</td>
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<td>(8D PRE)</td>
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<td>Rat</td>
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<td>Oral</td>
<td>(28D PRE)</td>
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</tbody>
</table>

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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.

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.
Risk Statements: R: 45
May cause cancer.
Safety Statements: S: 53 45
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.
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).
US Statements
Target organ(s): Female reproductive system; Male reproductive system.

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 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: No

Section 16 - Other Information

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

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