

**SIGMA-ALDRICH**

**Material Safety Data Sheet**

Version 3.0  
Revision Date 07/13/2007  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : **beta -Estradiol**  
Product Number : E2758  
Brand : Sigma  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : 1,3,5-Estratriene-3,17beta -diol  
17beta -Estradiol  
3,17beta -Dihydroxy-1,3,5(10)-estratriene  
Dihydrofolliculin  
Formula : C18H24O2  
Molecular Weight : 272.39 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Estradiol			
50-28-2	200-023-8	-	-

**3. HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Hazards**

Delayed target organ effects  
Carcinogen  
Reproductive hazard

**Target Organs**

Female reproductive system., Male reproductive system.

**HMIS Classification**

Health Hazard: 0  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**

Health Hazard: 0

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Fire : 0  
Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** : May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** : May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** : May cause eye irritation.  
**Ingestion** : May be harmful if swallowed.

**4. FIRST AID MEASURES**

**General advice**  
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.  
**If inhaled**  
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.  
**In case of skin contact**  
Wash off with soap and plenty of water. Consult a physician.  
**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.  
**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES**

**Flammable properties**  
Flash point : no data available  
Ignition temperature : no data available  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
**Special protective equipment for fire-fighters**  
Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**  
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.  
**Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.  
**Methods for cleaning up**  
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

**Handling**  
Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.  
**Storage**  
Keep container tightly closed in a dry and well-ventilated place.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Safely glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form powder

Colour white

### Safety data

pH no data available

Melting point 176 °C (349 °F)

Boiling point no data available

Flash point no data available

Ignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Water solubility no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

#### Hazardous decomposition products formed under fire conditions.

Carbon oxides

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

no data available

### Irritation and corrosion

no data available

### Sensitisation

no data available

### Chronic exposure

The National Toxicology Program (Tenth Report on Carcinogens) has determined that steroidal 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. This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Genotoxicity in vitro - rat - Other cell types

DNA damage

Genotoxicity in vivo - rat - Oral

Morphological transformation.

May cause reproductive disorders.

### Signs and Symptoms of Exposure

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

### Potential Health Effects

#### Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

#### Skin

May be harmful if absorbed through skin. May cause skin irritation.

#### Eyes

May cause eye irritation.

#### Ingestion

May be harmful if swallowed.

#### Target Organs

Female reproductive system., Male reproductive system.,

## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

Toxicity to fish LC50 - *Oryzias latipes* - 0.002 µg/l - 96 h

### Further information on ecology

no data available

## 13. DISPOSAL CONSIDERATIONS

### Product

Observe all federal, state, and local environmental regulations. 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.

### Contaminated packaging

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**15. REGULATORY INFORMATION****OSHA Hazards**

Delayed target organ effects, Carcinogen, Reproductive hazard

**TSCA Status**

Not On TSCA Inventory

Estradiol

CAS-No.  
50-28-2**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Chronic Health Hazard

**Massachusetts Right To Know Components**

Estradiol

CAS-No.  
50-28-2      Revision Date  
1989-12-01**Pennsylvania Right To Know Components**

Estradiol

CAS-No.  
50-28-2      Revision Date  
1989-12-01**New Jersey Right To Know Components**

Estradiol

CAS-No.  
50-28-2      Revision Date  
1989-12-01**California Prop. 65 Components**

WARNING! This product contains a chemical known in the State of California to cause cancer.

Estradiol

CAS-No.  
50-28-2      Revision Date  
1992-11-09**16. OTHER INFORMATION****Further Information**

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