



# Safety Data Sheet

## 17 $\beta$ -Estradiol-16,16-d<sub>2</sub>

### Section 1. Chemical product and company identifications

**Product code:** D-5433

**Chemical formula:** C<sub>18</sub>H<sub>22</sub>D<sub>2</sub>O<sub>2</sub>

**CAS:** 3188-46-3

**CAS (unlabelled):** 50-28-2

**Synonyms:** 3,17 $\beta$ -Dihydroxy-1,3,5(10)-estratriene, 1,3,5-Estratriene-3,17 $\beta$ -diol, Dihydrofolliculin,  $\beta$ -Estradiol

**Supplier / Manufacturer:**

**C/D/N Isotopes Inc.**

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**In case of emergency:**

**TOXYSKAN HOTLINE: 1-855-780-0599**

### Section 2. Hazards identifications

**Physical state:** Solid

**Warning:** Suspected of causing cancer. May damage fertility or the unborn child.

**Routes of entry:** Inhalation, ingestion, skin and eyes

**GHS (Globally Harmonized System of Classification and Labelling of Chemicals):**

**GHS Classification:**

- Carcinogenicity (Category 2)
- Reproductive toxicity (Category 1A)
- Effects on or via lactation

**GHS Label elements:**

- Pictograms: 
- Signal word: Danger

**Hazards statement:**

- H351 Suspected of causing cancer.
- H360 May damage fertility or the unborn child.
- H362 May cause harm to breast-fed children.

**Precautionary statement:**

- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P318 IF exposed or concerned, get medical advice.

### Section 3. Composition and information on ingredients

| <u>Name</u>                                | <u>CAS</u> | <u>Concentration %</u> |
|--|------------|------------------------|
| 17 $\beta$ -Estradiol-16,16-d <sub>2</sub> | 3188-46-3  | > 98                   |

### Section 4. First aid measures

**Eye contact:** Flush eyes with water as a precaution.

**Skin contact:** Wash off with soap and plenty of water. Consult a physician.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

## **Section 5. Firefighting measures**

**Flammability of the product:** Not flammable or combustible.

**Lower explosion limit:** No data available

**Upper explosion limit:** No data available

**Auto-ignition temperature:** No data available

**Flash point:** No data available

**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides.

**Firefighting media and instructions:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

## **Section 6. Accidental release measures**

**Personal precautions:** Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Avoid breathing dust.

**Environmental precautions:** 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.

## **Section 7. Handling and storage**

**Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation.

**Storage:** Store at room temperature. Adequate ventilation.

## **Section 8. Exposure Controls, Personal Protections**

**Engineering controls:** Use mechanical exhaust or laboratory fumehood to avoid exposure.

**Eyes:** Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).

**Respiratory:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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).

**Hands:** Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Skin/body:** Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## **Section 9. Physical and chemical properties (unlabelled)**

**Molecular weight:** 272.38 g/mol

**Physical status:** Solid

**Color:** White to off-white

**Odour:** No data available

**Density:** No data available

**Melting point:** 176 - 180 °C (349 - 356 °F)

**Boiling point:** No data available

**Vapour pressure:** No data available

**Vapour density:** No data available

**Partition coefficient (octanol/water):** log Pow: 4.01

**Water solubility:** 3.6 mg/L

## **Section 10. Stability and reactivity**

**Stability and reactivity:** Stable under recommended storage conditions.

**Incompatibility:** Strong oxidizing agents.

**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides.

**Reactivity conditions:** No data available.

## **Section 11. Toxicological information (unlabelled)**

**Toxicological data:** 17 $\beta$ -Estradiol

### **Information on ingredients:**

| <u>Name</u>           | <u>CAS</u> | <u>LD<sub>50</sub></u> | <u>LC<sub>50</sub></u> |
|-----------------------|------------|------------------------|------------------------|
| 17 $\beta$ -Estradiol | 50-28-2    | No data available      | No data available      |

### **Potential acute effects**

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

### **Potential chronic effects**

- **Carcinogenic effects:** This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. IARC: 2B - Group 2B: Possibly carcinogenic to humans (17 $\beta$ -Estradiol). ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **Mutagenic effects:** No data available.
- **Teratogenic effects:** Suspected of damaging the unborn child. Suspected human reproductive toxicant.
- **Medical conditions aggravated by overexposure:** No data available.

## **Section 12. Ecological information**

### **Ecological data:**

| <u>Name</u>           | <u>Results</u>  | <u>Species</u>      | <u>Period</u> |
|-----------------------|-----------------|---------------------|---------------|
| 17 $\beta$ -Estradiol | > 0.5 mg/l LC50 | Oncorhynchus mykiss | 96 h          |

**Effects on environment:** No data available.

**Mobility:** No data available.

**Environmental precautions:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

## **Section 13. Disposal considerations**

**Waste disposal:** Contact a licensed professional waste disposal service to dispose of this material.

## **Section 14. Transportation information**

### **Classification DOT/IMDG/IATA label:**

**Shipping name:** Not dangerous goods

**UN number:** None

**Class:** None

**Packaging group:** None

**Additional information:** None

## **Section 15. Regulatory information**

### **UNITED STATES: NFPA classification**



Health: 1  
Flammable: 0  
Reactivity: 0  
Special conditions: None

**Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous**

### **U.S. Federal regulations:**

**TSCA 8(b) inventory:** 17 $\beta$ -Estradiol

**SARA 302/304/311/312 extremely hazardous substances:** Not Listed

**SARA 302/304 emergency planning and notification:** Not Listed

**SARA 302/304/311/312 hazardous chemicals:** Not Listed

**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Not Listed

**CWA (Clean Water Act) 307:** Not Listed

**CWA (Clean Water Act) 311:** Not Listed

**CAA (Clean Air Act) 112 accidental release prevention:** Not Listed

**CAA (Clean Air Act) 112 regulated flammable substances:** Not Listed

**CAA (Clean Air Act) 112 regulated toxic substances:** Not Listed

### **State regulations:**

**DEA List I Chemicals (Precursor Chemicals):** Not Listed

**DEA List II Chemicals (Essential Chemicals):** Not Listed

**Substances in Massachusetts:** Not Listed

**Dangerous substances in New Jersey:** Not Listed

**New York – Dangerous substances with acute effects:** Not Listed

**Dangerous substances in Pennsylvania – right to know:** Not Listed

### **WHMIS (Canada):**



D2A - Very toxic material causing other toxic effects

## **Section 16. Additional information**

### **References:**

- ANSI Z400.1, MSDS Standard, 2001.
- Manufacturer's Material Safety Data Sheet.
- 29CFR Part1910.1200 OSHA MSDS Requirements.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Federal act on the controlled products
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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**Elaborated by:** Toxyscan Inc., 1-866-780-0599

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