

Order Number

Customer Number

1. Identification of the substance/preparation and of the company/undertaking

Product name : 17beta-Estradiol **Catalog #** : 3301

Chemical formula : C₁₈H₂₄O₂ **Supplier** : Manufactured by EMD Biosciences, Inc.
10394 Pacific Center Court
San Diego, CA 92121
(858)450-5558/(800)854-3417
FAX: (858)453-3552

Synonym : altrad; bardiol; dihydrofollicular hormone; dihydrofolliculin;
dihydromenformon; dihydrotheelin;
3,17-beta-dihydroxyestra-1,3,5(10)-triene;
3,17-beta-dihydroxy-1,3,5(10)-estratriene; dihydroxyestrin;
3,17-beta-dihydroxyoestra-1,3,5-triene; 3,17-beta-dihydroxy-1,3,5(10)-oestratriene; dihydroxyoestrin; dimenformon;
dimenformon prolongatum; diogyn; diogynets; e(sub 2);
3,17-epidihydroxyestratriene; 3,17-epidihydroxyoestratriene;
estradiol-17-beta; alpha-estradiol; beta-estradiol; 3,17-beta-estradiol;
17-beta-estradiol; cis-estradiol; d-estradiol; d-3,17-beta-estradiol;
estraldine; estra-1,3,5(10)-triene-3,17-beta-diol;
17-beta-estra-1,3,5(10)-triene-3,17-diol;
1,3,5-estratriene-3,17-beta-diol; estrovite; femestral; femogen;
gynergon; gynestrel; gynoestryl; lamdiol; macrodiol; macrol; microdiol;
nordicol; nsc-9895; oestergon; oestradiol; alpha-oestradiol;
beta-oestradiol; 3,17-beta-oestradiol; cis-oestradiol; d-oestradiol;
d-3,17-beta-oestradiol; oestradiol r; oestradiol-17-beta;
oestra-1,3,5(10)-triene-3,17-beta-diol;
17-beta-oestra-1,3,5(10)-triene-3,17-diol; oestroglandol; oestrogynal;
17-beta-oh-estradiol; 17-beta-oh-oestradiol; ovahormon; ovasterol;
ovastevol; ovociclina; ovocyclin; ovocycline; ovocylin; primofol; profoliol;
progynon; progynon-dh; syndiol; theelin, dihydro-; estradiol-17b

Emergency telephone number : Call Chemtrec®
(800)424-9300 (within U.S.A.)
(703)527-3887 (outside U.S.A.)

2. Composition / information on ingredients

Substance/Preparation : Substance

Chemical name*	CAS No.	EC Number	Symbol	R-Phrases
estradiol	50-28-2	200-023-8	T	R60, R63, R64

3. Hazards identification

Physical/chemical hazards : Not applicable.

Human health hazards : WARNING!
CANCER HAZARD.
CAN CAUSE CANCER.
POSSIBLE BIRTH DEFECT HAZARD.
MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA.
MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.

4. First-aid measures

First-Aid measures

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin Contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Eye Contact : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Aggravating conditions : Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

5. Fire-fighting measures

- Flammability of the Product** : May be combustible at high temperature.
- Extinguishing Media**
- Suitable** : SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
- Hazardous thermal (de)composition products** : These products are carbon oxides (CO, CO₂).
- Special fire-fighting procedures** : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Protection of fire-fighters** : Be sure to use an approved/certified respirator or equivalent.

6. Accidental release measures

- Personal precautions** : Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Small Spill and Leak** : Use appropriate tools to put the spilled solid in a convenient waste disposal container.
- Large Spill and Leak** : Use a shovel to put the material into a convenient waste disposal container.

7. Handling and storage

- Handling** : Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 4°C (39.2°F).
- Packaging materials**
- Recommended use** : Use original container.

8. Exposure controls/personal protection

- Engineering measures** : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
- Hygiene measures** : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

<u>Ingredient Name</u>	<u>Occupational Exposure Limits</u>
17beta-Estradiol	Not available.

Personal protective equipment

- Respiratory system** : Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Skin and body** : Lab coat.
- Hands** : Gloves.
- Eyes** : Safety glasses.
- Protective Clothing (Pictograms)** :



9. Physical and chemical properties

- Physical state** : Solid. (NEEDLES)
- Color** : Off-white.
- Molecular Weight** : 272.4 g/mole
- Melting Point** : 178.06 to 179.06°C (352.5 to 354.3°F)
- Solubility** : Not available.
- Flash point** : Not available.
- Explosive properties** : Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

10. Stability and reactivity

Stability	: The product is stable.
Conditions to avoid	: Not available.
Materials to avoid	: Reactive with oxidizing agents.
Hazardous Decomposition Products	: These products are carbon oxides (CO, CO2).

11. Toxicological information

RTECS #	: KG2975000
Local effects	
Skin irritation	: Not available.
Acute toxicity	: LD50: Not available. LC50: Not available.
Chronic toxicity	: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Other Toxic Effects on Humans	: Not available. No specific information is available in our database regarding the other toxic effects of this material for humans. May cause congenital malformations in the foetus. Not available.
Specific effects	
Carcinogenic effects	: Classified 1 (Proven for human.) by IARC. Classified 2 (Reasonably Anticipated To Be Human Carcinogens.) by NTP. Classified None. by NIOSH.
Mutagenic effects	: Not available.
Reproduction toxicity	: Not available.
Teratogenic effects	: Classified POSSIBLE for human.

12. Ecological information

Ecotoxicity	: Not available.
Toxicity of the Products of Biodegradation	: The products of degradation are less toxic than the product itself.


13. Disposal considerations

Methods of disposal; Waste of residues; Contaminated packaging	: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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14. Transport information

International transport regulations	
Land - Road/Railway	
ADR/RID Class	: Not controlled under ADR (Europe).
Sea	
IMDG Class	: Not controlled under IMDG.
Air	
IATA-DGR Class	: Not controlled under IATA.
Special Provisions for Transport	: Not applicable.

15. Regulatory information

EU Regulations	
Hazard symbol(s)	: 
Classification	: Toxic
Risk Phrases	: R48/20/21/22- Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. R60- May impair fertility. R63- Possible risk of harm to the unborn child. R64- May cause harm to breastfed babies.

Safety Phrases

: S53- Avoid exposure - obtain special instructions before use.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains

: - estradiol

U.S. Federal Regulations

: TSCA: No products were found.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: estradiol
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: estradiol: Delayed (Chronic) Health Hazard
SARA 313 toxic chemical notification and release reporting: No products were found.
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

HCS Classification

: CLASS: May cause cancer.

State Regulations

: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: estradiol
California prop. 65 (no significant risk level): estradiol
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: estradiol
Pennsylvania RTK: estradiol: (special hazard, generic environmental hazard)
Massachusetts RTK: estradiol
New Jersey: estradiol

WHMIS (Canada)

: CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

No products were found.

16. Other information

Hazardous Material Information System (U.S.A.)

Health	* 0
Fire Hazard	1
Reactivity	0
Personal Protection	E

National Fire Protection Association (U.S.A.)



Notice to Reader

*To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. **This product is intended for research use only.***

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