

SAFETY DATA SHEET

Diethylstilbestrol



Section 1. Identification of the Substance/Mixture and of the

1.1 Product Code: LS-H9-1000, LS-H9-5000, LS-H9-10000, LS-H9-25000

Product Name: Diethylstilbestrol

Synonyms: 4,4'[(1E)-1,2-diethyl-1,2-ethenediyl]bis-phenol;

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the supplier of the Safety Data Sheet:

MANUFACTURER: LifeSpan BioSciences, Inc.
ADDRESS: 2401 - 4th Avenue, Suite 900, Seattle, WA 98121
PHONE: 1-206-464-1554
FAX: 1-206-577-4565
WEBSITE: www.LSBio.com

1.4 Emergency contact and telephone number:

CHEMTEL EMERGENCY 1-800-255-3924 (United States, Canada, Puerto Rico, and the U.S. Virgin Islands)
PHONES: 1-813-248-0585 (Other locations)
CHEMTEL CONTRACT ID: MIS2559905

Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Carcinogenicity, Category 1B	Health hazard	Danger	May cause cancer
Toxic To Reproduction, Category 1B	Health hazard	Danger	May damage fertility or the unborn child
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness
Aquatic Toxicity (Acute), Category 1	Pollution	Warning	Very toxic to aquatic life
Aquatic Toxicity (Chronic), Category 1	Pollution	Warning	Very toxic to aquatic life with long lasting effects

GHS Hazard Phrases:
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H350: May cause cancer.
H360: May damage fertility or the unborn child.
H335: May cause respiratory irritation.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

GHS Precaution Phrases:
P264: Wash {hands} thoroughly after handling.
P280: Wear {protective gloves/protective clothing/eye protection/face protection}.
P362+364: Take off contaminated clothing and wash it before reuse.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.
P273: Avoid release to the environment.

GHS Response Phrases:
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P332+313: If skin irritation occurs, get medical advice/attention.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists, get medical advice/attention.
P308+313: IF exposed or concerned: Get medical attention/advice.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P391: Collect spillage.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:

Causes skin irritation.
Causes serious eye irritation.
Estrogen receptor agonist.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause cancer.
May cause respiratory irritation.
May damage fertility or the unborn child.
Very toxic to aquatic life with long lasting effects.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs:

Reproductive system, Liver.

LD 50 / LC 50:

Please refer to Section 11.

Medical Conditions Generally Aggravated By

No data available.

Exposure:

Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Diethylstilbestrol (DES)	56-53-1	100.0 %	200-278-5	R36/37/38-43-50/53 -40-60-61	WJ5600000

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation:

Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact:

Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact:

Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion:

Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2 Important Symptoms and Effects, Both Acute and Delayed:

No data available.

4.3 Indication of any immediate medical attention and special treatment needed:

No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media:

A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards:

No data available.

Flash Pt:

No data.

Autoignition Pt:

No data available.

Explosive Limits:	LEL: No data.	UEL: No data.
Hazardous Combustion Products:	No data available.	
5.3 Fire Fighting Instructions:	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.	

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).	
6.2 Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.	
6.3 Methods and Material For Containment and Cleaning Up:	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.	

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.	
7.2 Precautions To Be Taken in Storing:	Keep container tightly closed. Store in accordance with information listed on the product insert.	
Hazard Label Information:	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.	

Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Diethylstilbestrol (DES)	56-53-1	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Diethylstilbestrol (DES)	56-53-1	No data.	No data.	No data.

Protective Equipment Summary - Hazard Label Information:	Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood	
8.2.1 Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.	
8.2.2.1 Eye Protection:	Safety glasses	
8.2.2.2 Protective Gloves:	Compatible chemical-resistant gloves	
Other Protective Clothing:	Lab coat	
8.2.2.3 Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.	
Work/Hygienic/Maintenance Practices:	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.	
8.2.3 Environmental Exposure Controls:	No data available.	

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties	
Physical States:	<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid
Appearance and Odor:	A crystalline solid
Melting Point:	No data.
Boiling Point:	No data.

Flash Pt:	No data.
Evaporation Rate:	No data.
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Specific Gravity (Water = 1):	No data.
Solubility in Water:	No data.
Solubility Notes:	~0.15 mg/ml in 1:5 EtOH:PBS (pH 7.2); ~30 mg/ml in EtOH, DMF, & DMSO;
Autoignition Pt:	No data.
Explosive Properties:	No data available.
Oxidizing Properties:	No data available.
9.2 Other Information	
Percent Volatile:	No data.
Formula:	C ₁₈ H ₂₀ O ₂
Molecular Weight:	268.40

Section 10. Stability and Reactivity

10.1 Reactivity:	No data available.
10.2 Stability:	Unstable [] Stable [X]
10.3 Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid:	No data available.
10.3 Polymerization:	Will occur [] Will not occur [X]
10.5 Incompatibility - Materials To Avoid:	acid anhydrides acid chlorides strong oxidizing agents strong bases
10.6 Hazardous Decomposition Or Byproducts:	carbon dioxide carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:	The toxicological effects of this product have not been thoroughly studied.
Chronic Toxicological Effects:	Diethylstilbestrol (DES) - Toxicity Data: Oral TDLO (woman): 375 µg/kg/30D (intermittent); Oral LD50 (rat): >3 g/kg; Oral LD50 (mouse): >3 g/kg; Oral LD50 (mouse): 10.5 ml/kg; Oral TDLo (rat): 0.89 µg/kg/4D (continuous); Diethylstilbestrol (DES) - Investigated as a mutagen, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Diethylstilbestrol (DES) RTECS Number: WJ5600000
Carcinogenicity/Other Information:	IARC: Group 1: Carcinogenic to humans (Diethylstilbestrol (DES)) NTP: Known to be human carcinogen (Diethylstilbestrol (DES))

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Diethylstilbestrol (DES)	56-53-1	Known	1	n.a.	n.a.

Carcinogenicity: NTP? Yes IARC Monographs? Yes OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name Environmentally Hazardous Substance, solid, N.O.S. (Diethylstilbestrol)
DOT Hazard Class: 9
DOT Hazard Label: CLASS 9
UN/NA Number: 3077
Packing Group: III

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name Environmentally Hazardous Substance, solid, N.O.S. (Diethylstilbestrol)
UN Number: 3077
Hazard Class: 9 - CLASS 9
Packing Group: III

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name Environmentally Hazardous Substance, solid, N.O.S. (Diethylstilbestrol)
UN Number: 3077
Hazard Class: 9 - CLASS 9
Packing Group: III
IATA Classification: 9

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes T: Toxic; N: Dangerous for the environment; Reproductive Hazard: 1

European Community Risk and Safety Phrases

- R36/37/38 - Irritating to eyes, respiratory system and skin.
- R40 - Limited evidence of a carcinogenic effect
- R43 - May cause sensitization by skin contact.
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R60 - May impair fertility.
- R61 - May cause harm to the unborn child.
- S24/25 - Avoid contact with skin and eyes.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
- S53 - Avoid exposure - obtain special instructions before use.

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Diethylstilbestrol (DES)	56-53-1	No	Yes 1 LB	No	No

Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Diethylstilbestrol (DES)	56-53-1	No	No	Inventory, 5A(2), 12(b)	Yes

Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 07/10/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required