



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Material name</b>	<b>Component TE-H, TE-IH, TE-100, and TE-200 Implants with Tylan</b>
<b>Version #</b>	01
<b>Issue date</b>	11-08-2012
<b>CAS #</b>	Mixture
<b>Substance ID</b>	AH0515, AH0511
<b>Synonym(s)</b>	Component TE-H Implant with Tylan * Component TE-IH Implant with Tylan * Component TE-100 Implant with Tylan * Component TE-200 Implant with Tylan
<b>Manufacturer information</b>	Elanco Animal Health 2500 Innovation Way Greenfield, IN 46140 lilly_msds@lilly.com Phone: 00 + 1+ 317-276-2000 CHEMTREC: 1-800-424-9300 CHEMTREC: (Outside U.S) 00 + 1+703-527-3887

## 2. Hazards Identification

<b>Emergency overview</b>	Not hazardous if intact. Skin Permeable. May be irritating to eyes. May cause allergic respiratory and skin reactions. Cancer hazard - can cause cancer. Highly Potent. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Eyes</b>	May cause eye irritation.
<b>Skin</b>	This product may cause an allergic skin reaction. This product may be harmful if it is absorbed through the skin.
<b>Inhalation</b>	May cause allergic respiratory reaction.
<b>Chronic effects</b>	May cause sensitization by inhalation and skin contact. May cause cancer. May cause adverse reproductive effects - such as birth defects, miscarriages, or infertility based on animal data.
<b>Signs and symptoms</b>	Irritant effects. Sensitization. Rash. Coughing. Wheezing. Shortness of breath.  Intact implants are not considered hazardous under normal handling procedures. Caution should be used to avoid contact with the contents which contain trenbolone acetate and estradiol. In men, overexposure may lead to gynecomastia (breast tenderness, breast nodules or enlarged breasts), galactorrhea (secretion of milk), decreased libido and damage to the testes resulting in atrophy and infertility. In women, overexposure may cause menstrual irregularities (breakthrough bleeding, change in menstrual flow, spotting, amenorrhea), temporary infertility, breast changes (tenderness, enlargement, and secretion), hirsutism (excessive hair growth), and fluid retention. Increased breast size in boys and pseudoprecocious puberty in girls have been observed in children born to occupationally exposed women. Other effects of exposure to estradiol may include headache, nausea, vomiting, abnormal blood clotting, and increased incidence of cancer. An accelerated skeletal maturation, strong pigmentation of the sexual organs and a feminizing syndrome in boys has also been noted in children of parents who work in estrogen production.
<b>Potential environmental effects</b>	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 3. Composition / Information on Ingredients

<b>Components</b>	<b>CAS #</b>	<b>Percent</b>
Trenbolone Acetate	10161-34-9	50 - 59
Tylosin Tartrate	1405-54-5	8 - 19
Estradiol	50-28-2	5 - 6

<b>Composition comments</b>	This product consists of 4 to 10 Trenbolone Acetate and Estradiol Pellets packaged with a Tylosir Tartrate (Tylan) pellet as a single implant, with 20 implants encased in a single plastic cartridge belt that poses no exposure risk unless the belt is damaged.
<b>4. First Aid Measures</b>	
<b>First aid procedures</b>	
<b>Eye contact</b>	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately.
<b>Skin contact</b>	Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention immediately.
<b>Inhalation</b>	Move to fresh air. Oxygen or artificial respiration if needed. Get medical attention immediately.
<b>Ingestion</b>	If conscious, give the victim plenty of water to drink. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately.
<b>Notes to physician</b>	The estradiol may aggravate pre-existing estrogen-dependent neoplasias including malignancies of the female reproductive organs and breast, thromboembolic diseases, impaired liver or kidney function, and pregnancy.
<b>General advice</b>	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire Fighting Measures

<b>Flammable properties</b>	Dust may form explosive mixture with air.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water. Carbon dioxide (CO2). Dry chemical.
<b>Unsuitable extinguishing media</b>	None known.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	Hazardous decomposition products formed under fire conditions.
<b>Protective equipment and precautions for firefighters</b>	Wear self-contained breathing apparatus and protective clothing.
<b>Fire fighting equipment/instructions</b>	Not available.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Avoid inhalation of dust and contact with skin and eyes. See Section 8 of the MSDS for Personal Protective Equipment.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Prevent spilled material from flowing onto adjacent land or into streams, ponds, or lakes.
<b>Methods for cleaning up</b>	If pellets remain intact, scoop or scrape up material into containers for disposal. If pellets are broken, contain dry material by lightly misting with water, followed by vacuuming. Vacuum material with appropriate dust collection filter in place. If vacuum is not available, lightly mist/wet material and remove by mopping or wet wiping. Be aware of potential for dust explosion when using electrical equipment. Large spills due to traffic accidents, etc., should be reported immediately to CHEMTREC and Elanco Animal Health for assistance.

## 7. Handling and Storage

<b>Handling</b>	NOT INTENDED FOR HUMAN USE. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure Controls / Personal Protection

<b>Exposure guidelines</b>	IEG = Lilly Interim Exposure Guideline: 12 hour TWA 0.05 ug/m3 (Trenbolone Acetate)
	IEG = Lilly Interim Exposure Guideline: 8 hour TWA 0.07 ug/m3 (Trenbolone Acetate)
	LEG = Lilly Exposure Guideline: 12 hour TWA <100 ug/m3 (Tylosin Tartrate)

<b>Engineering controls</b>	Open handling is not recommended. Use appropriate control measures such as fume hood, ventilated enclosure, isolator (eg. glovebag, glovebox), or closed material transfer systems.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	Chemical resistant gloves and impermeable body covering to minimize skin contact.
<b>Respiratory protection</b>	Use an approved respirator. Select appropriate respirator for physical characteristics of material. Select respirator with appropriate protection factor. If material is handled in a fume hood or ventilated enclosure, consider using redundant respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<b>General hygiene considerations</b>	<p>The intact implant is not considered hazardous under normal handling procedures.</p> <p>In a manufacturing setting, wear chemical-resistant gloves and body covering to minimize skin contact. If handled in a ventilated enclosure, as in a laboratory setting, respirator and goggles or face shield may not be required. Safety glasses are always required.</p> <p>Under normal use and handling conditions, wear goggles to protect eyes and wear impermeable gloves and protective equipment to avoid direct contact with skin. Wash thoroughly with soap and water after handling.</p>

## 9. Physical & Chemical Properties

<b>Appearance</b>	Cylindrical pellets packaged as an implant.
<b>Form</b>	Solid.
<b>Color</b>	Blue (Tylosin Tartrate)
	Pale yellow (Testosterone Propionate and Estradiol Benzoate)
<b>Odor</b>	Odorless
<b>Odor threshold</b>	No data available
<b>pH</b>	No data available.
<b>Vapor pressure</b>	No data available.
<b>Vapor density</b>	No data available.
<b>Boiling point</b>	No data available.
<b>Melting point/Freezing point</b>	No data available.
<b>Solubility (water)</b>	No data available.
<b>Specific gravity</b>	No data available.
<b>Relative density</b>	No data available.
<b>Flash point</b>	No data available.
<b>Flammability limits in air, upper, % by volume</b>	No data available.
<b>Flammability limits in air, lower, % by volume</b>	No data available.
<b>Auto-ignition temperature</b>	No data available.
<b>Evaporation rate</b>	No data available.
<b>Viscosity</b>	No data available.
<b>Partition coefficient (n-octanol/water)</b>	No data available.
<b>Other data</b>	
<b>Decomposition temperature</b>	No data available.
<b>Density</b>	No data available.
<b>Explosive limit - lower (%)</b>	No data available.
<b>Explosive limit - upper (%)</b>	No data available.

<b>Explosive properties</b>	Not explosive
<b>Flammability (solid, gas)</b>	No test data available.
<b>Oxidizing properties</b>	No oxidizing properties.
<b>Potential for dust explosion</b>	No data available.

**Physical state** Solid.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	None known.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Hazardous decomposition products formed under fire conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

### Toxicological data

Components	Species	Test Results
Estradiol (50-28-2)		
<b>Acute</b>		
<i>Dermal</i>		
LD	Rabbit	> 100 mg/kg, No deaths or toxicity.
<i>Oral</i>		
LD	Rat	> 500 mg/kg, No deaths.
Trenbolone Acetate (10161-34-9)		
<b>Acute</b>		
<i>Oral</i>		
LD	Rat	> 5000 mg/kg
LD50	Mouse	2700 mg/kg
Tylosin Tartrate (1405-54-5)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 600 mg/m3, 1 h
<i>Oral</i>		
LD50	Rat	> 6200 mg/kg

**Sensitization** May cause sensitization by inhalation. May cause sensitization by skin contact.

**Routes of exposure** Not available.

**Local effects** May be irritating to eyes.

**Carcinogenicity** IARC Group 1 (sufficient evidence of carcinogenicity in humans).  
Estrogen-only menopausal therapy is carcinogenic to humans (Group 1)

IARC has not classified trenbolone acetate for carcinogenicity. NTP and OSHA have not listed trenbolone as a human carcinogen. Androgens as a class are considered probable human carcinogens.

Animal testing did not show any carcinogenic effects. (Tylosin Tartrate, as free base)

### US NTP Report on Carcinogens: Known carcinogen

Estradiol (CAS 50-28-2) Known To Be Human Carcinogen.

**Skin corrosion/irritation** This information is not available.

<b>Mutagenicity</b>	Negative in bacterial cells. Induced micronuclei but not chromosomal aberrations, aneuploidy, or sister chromatid exchanges in in-vitro human cell assays. Induced aneuploidy and unscheduled DNA synthesis but did not induce DNA strand breaks or sister chromatid exchanges in in-vitro rodent cell assays. Did not induce chromosomal aberrations in bone marrow cells of mice treated in-vivo. (Estradiol)
	Results in genetic toxicity assays (in vitro): Negative (Trenbolone Acetate)
	Mutagenic in one mammalian test system. Not mutagenic in bacterial cell tests and other mammalian cell tests. Unlikely to pose a genotoxic risk to man. (Tylosin Tartrate, as free base)
<b>Reproductive effects</b>	May damage fertility or the unborn child. May cause harm to breastfed babies.
<b>Symptoms and target organs</b>	Irritant effects. Sensitization. Rash. Coughing. Wheezing. Difficulty in breathing.

## 12. Ecological Information

### Ecotoxicological data Components

Components		Species	Test Results
Estradiol (50-28-2)			
Aquatic			
Fish	LC50	Medaka, high-eyes (Oryzias latipes)	0.002 µg/l, 96 h
		Rainbow Trout	> 0.5 mg/l, 96 h
Trenbolone Acetate (10161-34-9)			
Crustacea	NOEC	Daphnia magna	0.58 mg/l, 48 h
Acute			
Crustacea	EC50	Daphnia magna	1.34 mg/l, 48 h
Tylosin Tartrate (1405-54-5)			
Acute			
Crustacea	EC50	Daphnia magna	> 300 mg/l, (as free base)
Other	EC50	Pseudokirchnerella subcapitata	0.22 mg/l, (average specific growth rate) (as free base)
Aquatic			
Acute			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 300 mg/l, (as free base)
		Rainbow Trout	> 300 mg/l, (as free base)

<b>Ecotoxicity</b>	Very toxic to aquatic life with long lasting effects.
<b>Aquatic toxicity</b>	Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulation / Accumulation</b>	The product contains potentially bioaccumulating substances.

#### Bioaccumulative potential

##### Octanol/water partition coefficient log Kow

Tylosin Tartrate	17, (pH 7) 17, (pH 9)
Estradiol	4.01
Tylosin Tartrate	5, (pH 5)

#### Partition coefficient

Tylosin Tartrate	17, (pH 7) 17, (pH 9)
Estradiol	4.01
Tylosin Tartrate	5, (pH 5)

## 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
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## 14. Transport Information

### DOT

Not regulated as dangerous goods.

### IATA

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Trenbolone Acetate, Tylosin Tartrate)
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III
<b>ERG code</b>	9L

### IMDG

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Trenbolone Acetate, Tylosin Tartrate), MARINE POLLUTANT
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>EmS No.</b>	F-A, S-F

### IATA; IMDG



### Marine pollutant



## 15. Regulatory Information

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
CERCLA/SARA Hazardous Substances - Not applicable.

### Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2))

Not regulated.

### DEA Essential Chemical Code Number

Not regulated.

### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

### DEA Exempt Chemical Mixtures Code Number

Not regulated.

### CERCLA (Superfund) reportable quantity

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 302 extremely hazardous substance**

No

**Section 311 hazardous chemical**

No

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations****US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Estradiol (CAS 50-28-2) Listed: January 1, 1988 Carcinogenic.

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

Estradiol (CAS 50-28-2) Listed: April 1, 1990 Developmental toxin.

**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

Estradiol (CAS 50-28-2) Listed: April 1, 1990 Female reproductive toxin.

**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Estradiol (CAS 50-28-2) Listed: April 1, 1990 Male reproductive toxin.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

Estradiol (CAS 50-28-2) Listed.

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

Estradiol (CAS 50-28-2) Special hazard.

**16. Other Information****Lilly Lab Code**

Health: 2  
 Fire: 1  
 Reactivity: 0  
 Special 1: C  
 Special 2: R  
 Special 3: P  
 Special 4: A

**Disclaimer**

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. THIS MATERIAL SAFETY DATA SHEET SHALL NOT BE DEEMED TO CREATE ANY WARRANTY OF ANY KIND (INCLUDING WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE). In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

For additional information contact:

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**This data sheet contains changes from the previous version in section(s):**

Product and Company Identification: Synonyms  
Composition / Information on Ingredients: Ingredients  
Toxicological Information: Toxicological Data  
Transport Information: Material Transportation Information  
Regulatory Information: Risk Phrases - Class.