

**Trenbolone / Estradiol LA Formulation**

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**Section 1: Identification**

**Product identifier** : Trenbolone / Estradiol LA Formulation

**Recommended use of the chemical and restrictions on use**

Recommended use : Veterinary product  
Restrictions on use : Not applicable

**Manufacturer or supplier's details**



Company : MSD  
Address : 50 Tuas West Drive  
Singapore - Singapore 638408  
Telephone : +1-908-740-4000  
Emergency telephone number : 65 6697 2111 (24/7/365)  
E-mail address : EHSDATASTEWARD@msd.com

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**Section 2: Hazard identification****Classification of the substance or mixture**

Carcinogenicity : Category 1A  
Reproductive toxicity : Category 1A  
Specific target organ toxicity - repeated exposure : Category 1 (Liver, Bone, Blood, Endocrine system)  
Specific target organ toxicity - repeated exposure (Oral) : Category 1 (Endocrine system, Blood)  
Long-term (chronic) aquatic hazard : Category 1

**GHS Label elements, including precautionary statements**

Hazard pictograms	:	 
Signal word	:	Danger
Hazard statements	:	H350 May cause cancer. H360FD May damage fertility. May damage the unborn child. H372 Causes damage to organs (Liver, Bone, Blood, Endo-

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crine system) through prolonged or repeated exposure.  
H372 Causes damage to organs (Endocrine system, Blood) through prolonged or repeated exposure if swallowed.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

**Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P391 Collect spillage.

**Storage:**  
P405 Store locked up.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

Dust contact with the eyes can lead to mechanical irritation.  
Contact with dust can cause mechanical irritation or drying of the skin.  
May form explosive dust-air mixture during processing, handling or other means.

**Section 3: Composition/information on ingredients**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate	10161-34-9	$\geq 50$ -< 70
Estradiol	50-28-2	$\geq 2.5$ -< 10
Magnesium stearate	557-04-0	$\geq 1$ -< 10

**Section 4: First-aid measures****Description of necessary first-aid measures**

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

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- If inhaled : If inhaled, remove to fresh air.  
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : If in eyes, rinse well with water.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention.  
Rinse mouth thoroughly with water.

**Most important symptoms and effects, both acute and delayed**

- Risks : May cause cancer.  
May damage fertility. May damage the unborn child.  
Causes damage to organs through prolonged or repeated exposure.  
Contact with dust can cause mechanical irritation or drying of the skin.  
Dust contact with the eyes can lead to mechanical irritation.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

**Indication of any immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically and supportively.
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**Section 5: Fire-fighting measures****Extinguishing media**

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : None known.

**Special hazards arising from the substance or mixture**

- Specific hazards during fire-fighting : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.  
Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides  
Metal oxides

**Special protective actions for fire-fighters**

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local cir-

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cumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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**Section 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

**Environmental precautions**

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up**

Methods for cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.  
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).  
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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**Section 7: Handling and storage****Precautions for safe handling**

Technical measures : Static electricity may accumulate and ignite suspended dust causing an explosion.  
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Do not breathe dust.  
Do not swallow.  
Avoid contact with eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

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assessment  
Keep container tightly closed.  
Minimize dust generation and accumulation.  
Keep container closed when not in use.  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.  
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

**Conditions for safe storage, including any incompatibilities**

Conditions for safe storage : Keep in properly labelled containers.  
Store locked up.  
Keep tightly closed.  
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

**Section 8: Exposure controls/personal protection****Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate	10161-34-9	TWA	0.2 $\mu$ g/m <sup>3</sup> (OEB 5)	Internal
		Wipe limit	2 $\mu$ g/100 cm <sup>2</sup>	Internal
Estradiol	50-28-2	TWA	0.05 $\mu$ g/m <sup>3</sup> (OEB 5)	Internal
	Further information: Skin			
		Wipe limit	0.5 $\mu$ g/100 cm <sup>2</sup>	Internal
Magnesium stearate	557-04-0	PEL (long term)	10 mg/m <sup>3</sup>	SG OEL
		TWA (Inhalable particulate matter)	10 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable par-	3 mg/m <sup>3</sup>	ACGIH

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**Appropriate engineering control measures** : Use closed processing systems or containment technologies to control at source (e.g., glove boxes/isolators) and to prevent leakage of compounds into the workplace. All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. No open handling permitted. Totally enclosed processes and materials transport systems are required. Operations require the use of appropriate containment technology designed to prevent leakage of compounds into the workplace.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection** : Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Skin protection** : Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

**Respiratory protection** : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type** : Particulates type

**Hand protection**

|| **Material** : Chemical-resistant gloves

|| **Remarks** : Consider double gloving.

**Section 9: Physical and chemical properties**

**Appearance** : powder

**Colour** : No data available

**Odour** : No data available

**Odour Threshold** : No data available

**pH** : No data available

**Melting point/freezing point** : No data available

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Initial boiling point and boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	No data available
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle characteristics Particle size	:	No data available

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**Section 10: Stability and reactivity**

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Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May form explosive dust-air mixture during processing, handling or other means. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks. Avoid dust formation.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

**Section 11: Toxicological information**

Information on likely routes of exposure :

- Inhalation
- Skin contact
- Ingestion
- Eye contact

**Acute toxicity**

Not classified based on available information.

**Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
		LD50 (Mouse): 2,700 mg/kg

**Estradiol:**

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg
Acute toxicity (other routes of administration)	:	LD50 (Rat): > 300 mg/kg Application Route: Subcutaneous

**Magnesium stearate:**

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 423 Assessment: The substance or mixture has no acute oral toxicity Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Remarks: Based on data from similar materials

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Magnesium stearate:**



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Species	: Rabbit
Result	: No skin irritation
Remarks	: Based on data from similar materials

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****Estradiol:**

Result	: No eye irritation
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**Magnesium stearate:**

Species	: Rabbit
Result	: No eye irritation
Remarks	: Based on data from similar materials

**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:****Estradiol:**

Exposure routes	: Skin contact
Species	: Guinea pig
Assessment	: Does not cause skin sensitisation.
Result	: negative

**Magnesium stearate:**

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative
Remarks	: Based on data from similar materials

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Test system: Salmonella typhimurium Result: negative
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Genotoxicity in vivo	:	Test Type: Micronucleus test Test system: Chinese hamster fibroblasts Result: negative
	:	Test Type: Micronucleus test Species: Mouse Result: negative
	:	Test Type: Micronucleus test Species: Rat Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

**Estradiol:**

Genotoxicity in vitro	:	Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Test system: mammalian cells Result: positive
	:	Test Type: Chromosome aberration test in vitro Test system: mammalian cells Result: positive
	:	Test Type: Chromosomal aberration Test system: mammalian cells Result: positive
Genotoxicity in vivo	:	Test Type: Chromosomal aberration Species: Rat Cell type: Bone marrow Result: negative
	:	Test Type: Chromosomal aberration Species: Mouse Cell type: Bone marrow Result: negative

**Magnesium stearate:**

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Result: negative Remarks: Based on data from similar materials
	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials
	:	Test Type: Bacterial reverse mutation assay (AMES)

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Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

May cause cancer.

**Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Species : Mouse, male and female  
Application Route : Oral  
Result : positive  
Target Organs : Liver

Species : Rat, male and female  
Application Route : Oral  
Result : positive  
Target Organs : Pancreas

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

**Estradiol:**

Species : Mouse  
Application Route : Ingestion  
Exposure time : 24 Months  
LOAEL : 100  $\mu$ g/kg  
Result : positive  
Target Organs : female reproductive organs

Species : Rat  
Application Route : Subcutaneous  
Exposure time : 13 weeks  
LOAEL : 20 mg/kg body weight  
Result : positive  
Target Organs : Endocrine system

Carcinogenicity - Assessment : Positive evidence from human epidemiological studies

**Reproductive toxicity**

May damage fertility. May damage the unborn child.

**Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat  
Application Route: Oral  
Fertility: LOAEL: 0.18 mg/kg body weight  
Result: Postimplantation loss.

Effects on foetal develop- : Test Type: Embryo-foetal development

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Species: Rat  
 Application Route: oral (feed)  
 Developmental Toxicity: LOAEL: 20 mg/kg body weight  
 Result: Malformations were observed.

Reproductive toxicity - Assessment

: Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of adverse effects on development, based on animal experiments.

**Estradiol:**

Effects on fertility

: Test Type: One-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Ingestion  
 Fertility: LOAEL: 0.5 mg/kg body weight  
 Result: Effects on fertility

Test Type: One-generation reproduction toxicity study  
 Species: Rat  
 Duration of Single Treatment: 90 d  
 Fertility: LOAEL: 0.69 mg/kg body weight  
 Result: Effects on fertility

Test Type: Two-generation study  
 Species: Mouse  
 Application Route: Oral  
 Fertility: LOAEL: 0.1 mg/kg body weight  
 Result: Effects on fertility

Effects on foetal development

: Test Type: Embryo-foetal development  
 Species: Mouse, female  
 Application Route: Subcutaneous  
 Teratogenicity: LOAEL: 4 mg/kg body weight  
 Symptoms: Malformations were observed.  
 Result: positive, Teratogenic effects

Test Type: One-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Subcutaneous  
 Teratogenicity: LOAEL: 2.5 µg/kg body weight  
 Symptoms: Reduced body weight  
 Result: positive, Embryotoxic effects and adverse effects on the offspring were detected.

Test Type: Embryo-foetal development  
 Species: Rat  
 Application Route: Subcutaneous  
 Developmental Toxicity: LOAEL: 0.2 mg/kg body weight  
 Symptoms: Early Resorptions / resorption rate, Reduced number of viable fetuses, Reduced body weight  
 Result: Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses

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Reproductive toxicity - Assessment : May damage fertility. May damage the unborn child.

**Magnesium stearate:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Causes damage to organs (Liver, Bone, Blood, Endocrine system) through prolonged or repeated exposure.

Causes damage to organs (Endocrine system, Blood) through prolonged or repeated exposure if swallowed.

**Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Exposure routes : Ingestion  
Target Organs : Endocrine system, Blood  
Assessment : Causes damage to organs through prolonged or repeated exposure.

**Estradiol:**

Target Organs : Liver, Bone, Blood, Endocrine system  
Assessment : Causes damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Species : Pig  
NOAEL : 0.004 mg/kg  
LOAEL : 0.08 mg/kg  
Exposure time : 14 Weeks  
Target Organs : Testis, Ovary, Liver, Uterus (including cervix)

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Species	: Rat
NOAEL	: 0.04 mg/kg
LOAEL	: 3.6 mg/kg
Application Route	: Oral
Exposure time	: 23 Weeks
Target Organs	: Blood

Species	: Monkey, female
NOAEL	: 0.01 mg/kg
LOAEL	: 0.04 mg/kg
Application Route	: Oral
Exposure time	: 122 Days
Target Organs	: female reproductive organs

Species	: Monkey, male
NOAEL	: 0.002 mg/kg
LOAEL	: 0.04 mg/kg
Application Route	: Oral
Exposure time	: 30 Days
Target Organs	: male reproductive organs

Species	: Rat
NOAEL	: 0.05 mg/kg
LOAEL	: 0.1 mg/kg
Application Route	: Oral
Exposure time	: 3 Months
Target Organs	: male reproductive organs, Ovary, Uterus (including cervix)

**Estradiol:**

Species	: Rat
LOAEL	: $\geq 0.17$ mg/kg
Application Route	: Ingestion
Exposure time	: 90 d
Target Organs	: Mammary gland, Ovary, Uterus (including cervix), Liver, Bone, Endocrine system, Blood, Testis

**Magnesium stearate:**

Species	: Rat
NOAEL	: $> 100$ mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Remarks	: Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

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## Experience with human exposure

Components:**17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Ingestion	: Symptoms: male reproductive effects, gynecomastia, changes in libido
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**Estradiol:**

Inhalation	: Symptoms: tingling, Nose bleeding
Skin contact	: Symptoms: Skin irritation, Redness, pruritis
Ingestion	: Symptoms: Headache, Gastrointestinal disturbance, Dizziness, Vomiting, Diarrhoea, water retention, liver function change, changes in libido, breast tenderness, menstrual irregularities

## Section 12: Ecological information

## Toxicity

Components:**17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 0.000035 mg/l Exposure time: 21 d Method: OECD Test Guideline 229 Remarks: Based on data from similar materials
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M-Factor (Chronic aquatic toxicity)	: 1,000
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**Estradiol:**

Toxicity to fish	: LC50 (Oryzias latipes (Japanese medaka)): 3.9 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 2.7 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: NOEC (Pseudokirchneriella subcapitata (green algae)): 1.7 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.7 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	: NOEC (Oryzias latipes (Japanese medaka)): 0.000003 mg/l Exposure time: 160 d Method: OECD Test Guideline 210

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.2 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1,000
Toxicity to microorganisms	:	EC50: > 100 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209
		NOEC: 100 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209

**Magnesium stearate:**

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): > 100 mg/l Exposure time: 48 h Method: DIN 38412 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 1 mg/l Exposure time: 47 h Test substance: Water Accommodated Fraction Method: Directive 67/548/EEC, Annex V, C.2. Remarks: Based on data from similar materials No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials No toxicity at the limit of solubility
		NOELR (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): > 100 mg/l Exposure time: 16 h Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials



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**Persistence and degradability****Components:****Estradiol:**

Biodegradability	:	Result: rapidly degradable
		Biodegradation: 84 %
		Exposure time: 24 hrs

**Magnesium stearate:**

Biodegradability	:	Result: Not biodegradable
		Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate:**

Partition coefficient: n-octanol/water	:	log Pow: 3.77
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**Estradiol:**

Partition coefficient: n-octanol/water	:	log Pow: 4.01
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**Magnesium stearate:**

Partition coefficient: n-octanol/water	:	log Pow: > 4
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**Mobility in soil****Components:****Estradiol:**

Distribution among environmental compartments	:	log Koc: 3.81
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**Other adverse effects**

No data available

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**Section 13: Disposal considerations****Disposal methods**

Waste from residues	:	Do not dispose of waste into sewer. Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

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**Section 14: Transport information****International Regulations**

**Trenbolone / Estradiol LA Formulation**

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**UNRTDG**

UN number	: UN 3077
UN proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Estradiol, 17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate)
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
Environmental hazards	: yes

**IATA-DGR**

UN/ID No.	: UN 3077
UN proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Estradiol, 17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate)
Transport hazard class(es)	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 956
Packing instruction (passenger aircraft)	: 956
Environmentally hazardous	: yes

**IMDG-Code**

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Estradiol, 17 $\beta$ -hydroxyestra-4,9,11-trien-3-one 17-acetate)
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**Section 15: Regulatory information****Safety, health and environmental regulations specific for the product in question**

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	: Not applicable
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Fire Safety (Petroleum and Flammable Materials) Regulations : Not applicable

**The components of this product are reported in the following inventories:**

AICS	: not determined
DSL	: not determined
IECSC	: not determined

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**Section 16: Other information**

Revision Date : 06.04.2024

**Further information**

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : dd.mm.yyyy

**Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
SG OEL	: Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances.

ACGIH / TWA	: 8-hour, time-weighted average
SG OEL / PEL (long term)	: Permissible Exposure Level (PEL) Long Term

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect

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Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

SG / EN