

# **Trenbolone / Estradiol Formulation**

Version SDS Number: Date of last issue: 2024/05/16 Revision Date: 28281-00029 9.0 2024/07/06 Date of first issue: 2014/11/05

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Trenbolone / Estradiol Formulation Product name

Other means of identification COOPERS REVALOR 400 GROWTH PROMOTANT FOR

GRASS FED HEIFERS AND STEERS (48945)

COOPERS REVALOR FLEX GROWTH PROMOTANT FOR

NON BREEDING CATTLE (58656)

COOPERS REVALOR S STEER GROWTH PROMOTANT

AND FINISHING IMPLANTS (46111)

COOPERS REVALOR-H GROWTH PROMOTANT AND

FINISHING IMPLANTS (47248)

Coopers Revalor XR Growth Promotant and Finishing Implants

(90903)

Manufacturer or supplier's details

Company MSD

Address 126 E. Lincoln Avenue

Rahway, New Jersey U.S.A. 07065

Telephone 908-740-4000

Emergency telephone number : 1-908-423-6000

EHSDATASTEWARD@msd.com E-mail address

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product Restrictions on use : Not applicable

#### 2. HAZARDS IDENTIFICATION

**GHS Classification** 

Carcinogenicity Category 1A

Reproductive toxicity Category 1A

repeated exposure

Specific target organ toxicity - : Category 1 (Liver, Bone, Blood, Endocrine system)

repeated exposure (Oral)

Specific target organ toxicity - : Category 1 (Endocrine system, Blood)

Long-term (chronic) aquatic

hazard

Category 1



# **Trenbolone / Estradiol Formulation**

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 2024/05/16

 9.0
 2024/07/06
 28281-00029
 Date of first issue: 2014/11/05

**GHS** label elements

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, Endocrine 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 protec-

tion/ face 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.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

## Components

| Chemical name                                  | CAS-No.    | Concentration (% w/w) |
|--|------------|-----------------------|
| 17β-hydroxyestra-4,9,11-trien-3-one 17-acetate | 10161-34-9 | >= 58.8686 -<= 74.07  |
| Estradiol                                      | 50-28-2    | >= 6.9027 -<= 12.5    |



# Trenbolone / Estradiol Formulation

SDS Number: Date of last issue: 2024/05/16 Version Revision Date: 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

557-04-0 Magnesium stearate >= 1.4717 -<= 1.85

4. FIRST AID MEASURES

General advice In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

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.

If in eyes, rinse well with water. In case of eye contact

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

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. 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).

Treat symptomatically and supportively. Notes to physician

5. FIREFIGHTING MEASURES

Protection of first-aiders

Suitable extinguishing media Water spray

> Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

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 prod-

Carbon oxides Metal oxides

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-

gency procedures

Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

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

Sweep up or vacuum up spillage and collect in suitable con-

tainer 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 deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

#### 7. HANDLING AND STORAGE

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-

sessment

Keep container tightly closed.

Minimize dust generation and accumulation. Keep container closed when not in use.



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

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.

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

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

| Components   | CAS-No.   | Value type<br>(Form of<br>exposure)                | Control parameters / Permissible concentration | Basis    |  |
|--|---|--|--|----------|--|
| 17β-hydroxyestra-4,9,11-trien-<br>3-one 17-acetate | 10161-34-9  | TWA  | 0.2 μg/m3 (OEB<br>5)                           | Internal |  |
|  |   | Wipe limit   | 2 μg/100 cm <sup>2</sup>                       | Internal |  |
| Estradiol  | 50-28-2   | TWA  | 0.05 μg/m3 (OEB<br>5)                          | Internal |  |
|  | Further information: Skin   |  |  |          |  |
|  |   | Wipe limit   | 0.5 μg/100 cm <sup>2</sup>                     | Internal |  |
| Magnesium stearate                                 | 557-04-0  | NAB  | 10 mg/m3                                       | ID OEL   |  |
|  | Further information: Not classified as carcinogenic to humans. Not enough data to classify these materials as carcinogenic to humans or animals |  |  |          |  |
|  |   | TWA (Inhal-<br>able particu-<br>late matter)       | 10 mg/m3                                       | ACGIH    |  |
|  |   | TWA (Res-<br>pirable par-<br>ticulate mat-<br>ter) | 3 mg/m3  | ACGIH    |  |

## **Engineering measures**

Use closed processing systems or containment technologies to control at source (e.g., glove boxes/isolators) and to pre-

vent 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.



# Trenbolone / Estradiol Formulation

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection.

Filter type

Particulates type

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Eye 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 and body protection : Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, dis-

posable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

Hygiene measures : If exposure to chemical is likely during typical use, provide

eye flushing systems and safety showers close to the work-

ing 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Colour : yellow

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling :

range

No data available

Flash point : Not applicable



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

Evaporation rate : No data available

Flammability (solid, gas) : May form explosive dust-air mixture during processing, han-

dling 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

#### 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard. Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

May form explosive dust-air mixture during processing, han-

dling or other means.

Can react with strong oxidizing agents.



# **Trenbolone / Estradiol Formulation**

Version SDS Number: Date of last issue: 2024/05/16 Revision Date: 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

Conditions to avoid Heat, flames and sparks.

Avoid dust formation.

Incompatible materials Oxidizing agents

Hazardous decomposition No hazardous decomposition products are known.

products

#### 11. TOXICOLOGICAL INFORMATION

Information on likely routes of: Inhalation

Skin contact exposure

Ingestion Eye contact

**Acute toxicity** 

Not classified based on available information.

Components:

17β-hydroxyestra-4,9,11-trien-3-one 17-acetate:

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

LD50 (Mouse): 2,700 mg/kg

**Estradiol:** 

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

Acute toxicity (other routes of : LD50 (Rat): > 300 mg/kg

administration)

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 tox-

Remarks: Based on data from similar materials

LD50 (Rabbit): > 2,000 mg/kg Acute dermal toxicity

Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

**Components:** 

Magnesium stearate:

Species Rabbit

Result No skin irritation

Remarks Based on data from similar materials

Serious eye damage/eye irritation

Not classified based on available information.



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

#### Components:

**Estradiol:** 

Result : No eye irritation

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:**

## 17β-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

Test Type: Micronucleus test

Test system: Chinese hamster fibroblasts

Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse Result: negative



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

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 syn-

thesis 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)

Result: negative

Remarks: Based on data from similar materials

Carcinogenicity

May cause cancer.



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

#### **Components:**

## 17β-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 - Assess-

ment

: Limited evidence of carcinogenicity in animal studies

**Estradiol:** 

Species : Mouse
Application Route : Ingestion
Exposure time : 24 Months
LOAEL : 100 µg/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 - Assess-

ment

Positive evidence from human epidemiological studies

#### Reproductive toxicity

May damage fertility. May damage the unborn child.

## **Components:**

## 17β-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-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: oral (feed)

Developmental Toxicity: LOAEL: 20 mg/kg body weight

Result: Malformations were observed.

Reproductive toxicity - As- : Some evidence of adverse effects on sexual function and



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

sessment fertility, based on animal experiments., Some evidence of

adverse effects on development, based on animal experi-

ments.

**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 develop-

ment

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

Reproductive toxicity - As-

sessment

May damage fertility. May damage the unborn child.

Magnesium stearate:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

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 develop: Test Type: Embryo-foetal development

ment 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:**

## 17β-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:

# 17β-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)

Species : Rat

NOAEL : 0.04 mg/kg

LOAEL : 3.6 mg/kg

Application Route : Oral

Exposure time : 23 Weeks



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

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 : >= 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.

Experience with human exposure

**Components:** 

17β-hydroxyestra-4,9,11-trien-3-one 17-acetate:

Ingestion : Symptoms: male reproductive effects, gynecomastia, changes

in libido

**Estradiol:** 

Inhalation : Symptoms: tingling, Nose bleeding



# **Trenbolone / Estradiol Formulation**

Version SDS Number: Date of last issue: 2024/05/16 Revision Date: 28281-00029 9.0 2024/07/06 Date of first issue: 2014/11/05

Symptoms: Skin irritation, Redness, pruritis Skin contact

Symptoms: Headache, Gastrointestinal disturbance, Dizzingestion

ness. Vomiting, Diarrhoea, water retention, liver function change, changes in libido, breast tenderness, menstrual irreg-

ularities

#### 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

#### **Components:**

17β-hydroxyestra-4,9,11-trien-3-one 17-acetate:

Toxicity to fish (Chronic tox-NOEC (Pimephales promelas (fathead minnow)): 0.000035 icity)

Exposure time: 21 d

Method: OECD Test Guideline 229

Remarks: Based on data from similar materials

M-Factor (Chronic aquatic

toxicity)

: 1.000

**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

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 tox-

icity)

NOEC (Oryzias latipes (Japanese medaka)): 0.000003 mg/l

Exposure time: 160 d

Exposure time: 21 d

Method: OECD Test Guideline 210

NOEC (Daphnia magna (Water flea)): 0.2 mg/l

Toxicity to daphnia and other:

aquatic invertebrates (Chron-

ic toxicity) M-Factor (Chronic aquatic

: 1,000

toxicity)

Toxicity to microorganisms

EC50: > 100 mg/l

Exposure time: 3 h Test Type: Respiration inhibition

Method: OECD Test Guideline 209



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

> 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

#### 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



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

П

**Bioaccumulative potential** 

Components:

17β-hydroxyestra-4,9,11-trien-3-one 17-acetate:

Partition coefficient: n-

: log Pow: 3.77

octanol/water

Estradiol:

Partition coefficient: n-

log Pow: 4.01

octanol/water

Magnesium stearate:

Partition coefficient: n-

log Pow: > 4

octanol/water

Mobility in soil

**Components:** 

**Estradiol:** 

Distribution among environ-

mental compartments

: log Koc: 3.81

Other adverse effects

No data available

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 han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations

**UNRTDG** 

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Estradiol, 17β-hydroxyestra-4,9,11-trien-3-one 17-acetate)

Class : 9
Packing group : III
Labels : 9

Environmentally hazardous

: yes

IATA-DGR

UN/ID No. : UN 3077



# Trenbolone / Estradiol Formulation

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.

(Estradiol, 17β-hydroxyestra-4,9,11-trien-3-one 17-acetate)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo :

aircraft)

Packing instruction (passen-

ger aircraft)

Environmentally hazardous : yes

**IMDG-Code** 

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

956

956

(Estradiol, 17β-hydroxyestra-4,9,11-trien-3-one 17-acetate)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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.

#### 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health

Hazardous substances that must be registered : Not applicable

Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances

Hazardous substances approved for use : Not applicable

Prohibited substances : Not applicable

Restricted substances : Not applicable



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

# Regulation of the Ministry of Trade No. 7 of 2022 on Distribution and Control of Hazardous Materials

Type of hazardous materials subject to distribution and : Not applicable

control, Annex I

Type of hazardous materials subject to distribution and : Not applicable

control, Annex II

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

AICS : not determined

DSL : not determined

IECSC : not determined

#### 16. OTHER INFORMATION

Revision Date : 2024/07/06

**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 Agen-

cy, 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 : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ID OEL : Indonesia. Occupational Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average ID OEL / NAB : Long term exposure limit

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



# **Trenbolone / Estradiol Formulation**

Version Revision Date: SDS Number: Date of last issue: 2024/05/16 9.0 2024/07/06 28281-00029 Date of first issue: 2014/11/05

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 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.

ID / EN