

MATERIAL SAFETY DATA SHEET

Date Printed: 02/27/2008

Date Updated: 01/30/2006

Version 1.7

Section 1 - Product and Company Information

Product Name TESTOSTERONE—DEA SCHEDULE III
Product Number T1500
Brand SIGMA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
TESTOSTERONE	58-22-0	No

Formula C19H28O2

Synonyms Androlin * Androst-4-en-3-one, 17-hydroxy-, (17-beta)- * Andronaq * Androst-4-en-17beta-ol-3-one * delta(sup 4)-Androsten-17(beta)-ol-3-one * Androst-4-en-3-one, 17-beta-hydroxy- * Andrusol * Cristerone T * Geno-cristaux gremy * Homosteron * Homosterone * 17-beta-Hydroxy-delta(sup 4)-androsten-3-one * 17-beta-Hydroxyandrost-4-en-3-one * 17-beta-Hydroxy-4-androsten-3-one * 7-beta-Hydroxyandrost-4-en-3-one * Malestrone (amps) * Mertestate * Neo-testis * Oreton-F * Orquisteron * Perandren * Percutacrine androgenique * Primotest * Primoteston * Sustanone * Synandrol F * Teslen * Testandrone * Testiculosterone * Testobase * Testopropon * Testosteroid * Testosteron * trans-Testosterone * Testosterone hydrate * Testostosterone * Testoviron schering * Testoviron T * Testrone * Testryl * Viormone * Virosterone

RTECS Number: XA303000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause cancer. Possible risk of harm to the unborn child.

Target organ(s): Reproductive system. Calif. Prop. 65 carcinogen.

HMIS RATING

HEALTH: 1*

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material

pickup is complete.

ENVIRONMENTAL PRECAUTION(S)

Avoid contaminating water supply. Avoid contaminating sewers and waterways with this material.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	288.43 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	152 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	

Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	Degree of Rotation: 10 g/l Solvent: EtOH +133 - +112 (+/-2)
Miscellaneous Data	N/A
Solubility	Solubility in Water: Insoluble.

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Reproductive system.

TOXICITY DATA

Oral

Mammal

> 5000 mg/kg

LD50

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Species: Mouse

Route of Application: Oral

Dose: 6240 MG/KG

Exposure Time: 52D

Frequency: C

Result: Tumorigenic: Neoplastic by RTECS criteria. Tumorigenic Effects: Ovarian tumors.

Species: Mouse

Route of Application: Subcutaneous

Dose: 30 MG/KG

Exposure Time: 5D

Frequency: I

Result: Tumorigenic Effects: Other reproductive system tumors.
Endocrine:Adrenal cortex tumors. Tumorigenic:Neoplastic by RTECS
criteria.

Species: Mouse
Route of Application: Implant
Dose: 400 MG/KG
Exposure Time: 50D
Frequency: C
Result: Tumorigenic:Neoplastic by RTECS criteria. Tumorigenic
Effects: Ovarian tumors.

IARC CARCINOGEN LIST

Rating: Group 2A Group 2A

CHRONIC EXPOSURE - TERATOGEN

Result: Possible risk of congenital malformation in the fetus.

Species: Woman
Dose: 34600 UG/KG
Route of Application: Unreported
Exposure Time: (7-13W PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Rat
Dose: 100 MG/KG
Route of Application: Oral
Exposure Time: (17-20D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Rat
Dose: 8 MG/KG
Route of Application: Intramuscular
Exposure Time: (13-20D PREG)
Result: Specific Developmental Abnormalities: Skin and skin
appendages. Specific Developmental Abnormalities: Urogenital
system.

Species: Guinea pig
Dose: 86 MG/KG
Route of Application: Subcutaneous
Exposure Time: (18-60D PREG)
Result: Specific Developmental Abnormalities: Endocrine system.
Specific Developmental Abnormalities: Urogenital system.

Species: Domestic Animals
Dose: 6398 UG/KG
Route of Application: Implant
Exposure Time: (30-80D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Domestic Animals
Dose: 6491 UG/KG
Route of Application: Implant
Exposure Time: (13-20W PREG)
Result: Effects on Embryo or Fetus: Fetal death.

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 50 UMOL/L
Cell Type: lymphocyte

Mutation test: DNA inhibition

Species: Human
Dose: 100 UG/L
Cell Type: kidney
Mutation test: DNA inhibition

Species: Human
Dose: 100 UG/L
Cell Type: kidney
Mutation test: Cytogenetic analysis

Species: Rat
Route: Parenteral
Dose: 10 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Rat
Dose: 100 UMOL/L
Cell Type: liver
Mutation test: DNA inhibition

Species: Mouse
Dose: 100 UMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Hamster
Dose: 5 MG/L
Cell Type: Embryo
Mutation test: Morphological transformation.

Species: Mammal
Dose: 10 UMOL/L
Cell Type: lymphocyte
Mutation test: DNA damage

Species: Mammal
Dose: 1 UMOL/L
Cell Type: liver
Mutation test: DNA damage

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Man
Dose: 17 MG/KG
Route of Application: Implant
Exposure Time: (26W MALE)
Result: Paternal Effects: Other effects on male. Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rat
Dose: 64 MG/KG
Route of Application: Oral
Exposure Time: (10D MALE)
Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat

Dose: 25 MG/KG
Route of Application: Subcutaneous
Exposure Time: (17D PREG)
Result: Effects on Newborn: Delayed effects. Effects on Newborn: Physical.

Species: Rat
Dose: 7 MG/KG
Route of Application: Subcutaneous
Exposure Time: (10-16D PREG)
Result: Effects on Fertility: Abortion.

Species: Rat
Dose: 4 MG/KG
Route of Application: Subcutaneous
Exposure Time: (9D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Maternal Effects: Parturition.

Species: Rat
Dose: 20 MG/KG
Route of Application: Subcutaneous
Exposure Time: (5D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat
Dose: 8400 UG/KG
Route of Application: Subcutaneous
Exposure Time: (21D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.

Species: Rat
Dose: 1400 UG/KG
Route of Application: Subcutaneous
Exposure Time: (14D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Rat
Dose: 700 UG/KG
Route of Application: Subcutaneous
Exposure Time: (14D PRE)
Result: Maternal Effects: Ovaries, fallopian tubes. Maternal Effects: Uterus, cervix, vagina.

Species: Rat
Dose: 60 MG/KG
Route of Application: Intramuscular
Exposure Time: (3-7D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat
Dose: 280 UG/KG
Route of Application: Intramuscular
Exposure Time: (14D MALE)

Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands. Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat

Dose: 2500 UG/KG

Route of Application: Parenteral

Exposure Time: (10D PRE)

Result: Maternal Effects: Ovaries, fallopian tubes.

Species: Rat

Dose: 4 MG/KG

Route of Application: Parenteral

Exposure Time: (3W MALE)

Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat

Dose: 8 MG/KG

Route of Application: Parenteral

Exposure Time: (3W MALE)

Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rat

Dose: 10440 UG/KG

Route of Application: Implant

Exposure Time: (30D MALE)

Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat

Dose: 27 MG/KG

Route of Application: Implant

Exposure Time: (90D MALE)

Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat

Dose: 10920 UG/KG

Route of Application: Implant

Exposure Time: (91D MALE)

Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat

Dose: 33300 UG/KG

Route of Application: Implant

Exposure Time: (15W MALE)

Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Paternal Effects: Other effects on male. Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Rat

Dose: 24 MG/KG

Route of Application: Intratesticular

Exposure Time: (30D MALE)

Result: Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands. Paternal Effects: Testes, epididymis,

sperm duct.

Species: Mouse
Dose: 15 GM/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Species: Mouse
Dose: 40 MG/KG
Route of Application: Subcutaneous
Exposure Time: (10D PRE)
Result: Maternal Effects: Uterus, cervix, vagina. Maternal Effects: Other effects.

Species: Mouse
Dose: 168 MG/KG
Route of Application: Subcutaneous
Exposure Time: (3D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 10 MG/KG
Route of Application: Subcutaneous
Exposure Time: (5D PRE)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 4524 MG/KG
Route of Application: Parenteral
Exposure Time: (19D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Mouse
Dose: 9583 NG/KG
Route of Application: Parenteral
Exposure Time: (1D PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Monkey
Dose: 1426 UG/KG
Route of Application: Implant
Exposure Time: (70D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rabbit
Dose: 30 MG/KG
Route of Application: Subcutaneous
Exposure Time: (1-3D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rabbit
Dose: 6 MG/KG
Route of Application: Unreported

Exposure Time: (1-3D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Hamster
Dose: 180 MG/KG
Route of Application: Subcutaneous
Exposure Time: (3-8D PREG)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Domestic Animals
Dose: 13333 UG/KG
Route of Application: Subcutaneous
Exposure Time: (50D PREG)
Result: Effects on Newborn: Behavioral.

Species: Domestic Animals
Dose: 18 UG/KG
Route of Application: Implant
Exposure Time: (7-14W PREG)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact the Drug Enforcement Administration concerning the disposal of controlled substances. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.
R: 45-63
Risk Statements: May cause cancer. Possible risk of harm to the unborn child.
S: 53-36/37-45
Safety Statements: Avoid exposure - obtain special instructions before use. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: May cause cancer. Possible risk of harm to the unborn child.

Safety Statements: Avoid exposure - obtain special instructions before use. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Target organ(s): Reproductive system. Calif. Prop. 65 carcinogen.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer. This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.