

TESTOSTERONE PROPIONATE

GHS SAFETY DATA SHEET

Version No:2.0
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

TESTOSTERONE PROPIONATE

OTHER NAMES

C22-H32-O3, "androst-4-en-3-one, 17-hydroxy-, (17-beta)-, propionate", "androst-4-en-3-one, 17-hydroxy-, (17-beta)-, propionate", "delta(sup 4)-androstene-17-beta-propionate-3-one", "delta(sup 4)-androstene-17-beta-propionate-3-one", "androst-4-en-3-one, 17-(1-oxypoxy)-(17-beta)-", "androst-4-en-3-one, 17-(1-oxypoxy)-(17-beta)-", testosterone-17-propionate, testosterone-17-propionate, testosterone-17-beta-propionate, testosterone-17-beta-propionate

PRODUCT USE

Testosterone is the androgenic hormone formed in the interstitial (Leydig) cells of the testes under the control of the anterior lobe of the pituitary gland.

Used in males for replacement therapy in hypogonadism, eunuchoidism and the male climacteric. Also used in the treatment of gynaecomastia (enlarged male breasts). In females provides a palliative treatment for inoperable neoplasms of the breast.

The propionate has a relatively short duration of action and is usually given by injection in oily liquids or aqueous suspension.

SUPPLIER

Company: S D FINE- CHEM LIMITED

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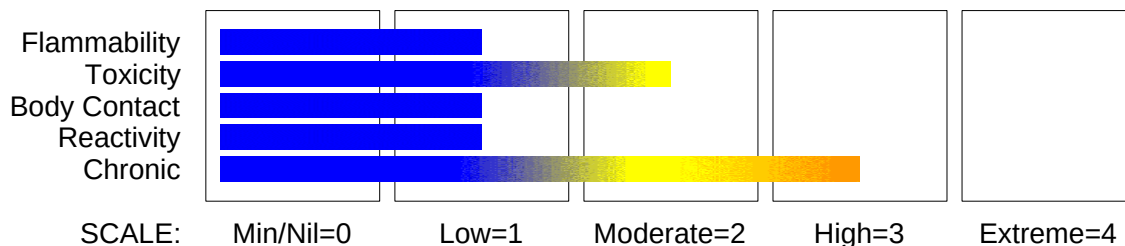
HAZARD RATINGS

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4
Reproductive Toxicity Category 1B



EMERGENCY OVERVIEW

HAZARD

DANGER
Determined by using GHS criteria:
H302 H360
Harmful if swallowed
May damage the unborn child

PRECAUTIONARY STATEMENTS

Prevention

Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wash hands thoroughly after handling.
Obtain special instructions before use.
Do not eat, drink or smoke when using this product.

Response

If exposed or concerned: Get medical attention advice.
Specific treatment: refer to Label or MSDS.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
testosterone propionate	57-85-2	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.
Poison Information Centres in each State capital city can provide additional assistance.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically.
Testosterone is largely metabolised in the liver to the weakly androgenic androsterone and inactive etiocholanolone which are subsequently excreted in the urine mainly as glucuronides and sulfates. Testosterone is extensively bound to a plasma globulin that also binds oestradiol and a small percentage is converted to oestrogenic derivatives in the body. Only about 2% of testosterone is unbound and the plasma half-life is about 10-20 mins. Testosterone is believed to be converted to the more active dihydrotestosterone in some target organs. [Martindale]

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

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FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Solid which exhibits difficult combustion or is difficult to ignite.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
 - Avoid contact with skin and eyes.
 - Wear impervious gloves and safety glasses.
 - Use dry clean up procedures and avoid generating dust.
 - Sweep up or
 - Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
 - Place spilled material in clean, dry, sealable, labelled container.
- Note: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type).

MAJOR SPILLS

- Clear area of personnel and move upwind.
 - Alert Fire Brigade and tell them location and nature of hazard.
 - Control personal contact by using protective equipment and dust respirator.
 - Prevent spillage from entering drains, sewers or water courses.
 - Recover product wherever possible. Avoid generating dust.
 - Sweep / shovel up.
 - If required, wet with water to prevent dusting.
 - Put residues in labelled plastic bags or other containers for disposal.
 - Wash area down with large quantity of water and prevent runoff into drains.
 - If contamination of drains or waterways occurs, advise emergency services.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

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Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid generating and breathing dust
- Avoid contact with skin and eyes.
- Wear nominated personal protective equipment when handling.
- Use in a well-ventilated area.
- Use good occupational work practices.
- Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER

- Glass container.
- Plastic container.
- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Observe manufacturer's storing and handling recommendations.
- Store in a cool area and away from sunlight.
- Store in a well-ventilated area.
- Store away from incompatible materials.
- Keep containers securely sealed.
- Check regularly for spills and leaks.
- Protect containers against physical damage.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+ X + X 0 +

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- testosterone propionate: CAS:57- 85- 2

MATERIAL DATA

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,

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- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

PERSONAL PROTECTION



EYE

No special equipment needed when handling small quantities of substance.

For bulk handling wear:

Chemical goggles or

Face shield.

HANDS/FEET

Rubber gloves

PVC gloves

Protective shoe covers

Head covering.

OTHER

No special equipment when handling small quantities of substance otherwise:

Coveralls

For Emergencies:

Vinyl suit

Safety shower

RESPIRATOR

High Efficiency Dust Respirator (P2, P3)

For non-routine emergencies wear full face mask self-contained breathing apparatus.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

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* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult
your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.

HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.

Barrier protection or laminar flow cabinets should be considered for laboratory scale handling.

When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6-12 air changes per hour) is preferred. Quantities up to 1 kilogram may require a designated laboratory using fume hood, biological safety cabinet, or approved vented enclosures. Quantities exceeding 1 kilogram should be handled in a designated laboratory or containment laboratory using appropriate barrier/ containment technology.

Manufacturing and pilot plant operations require barrier/ containment and direct coupling technologies.

Barrier/ containment technology and direct coupling (totally enclosed processes that create a barrier between the equipment and the room) typically use double or split butterfly valves and hybrid unidirectional airflow/ local exhaust ventilation solutions (e.g. powder containment booths). Glove bags, isolator glove box systems are optional. HEPA filtration of exhaust from dry product handling areas is required.

Fume-hoods and other open-face containment devices are acceptable when face velocities of at least 1 m/s (200 feet/minute) are achieved. Partitions, barriers, and other partial containment technologies are required to prevent migration of the material to uncontrolled areas. For non-routine emergencies maximum local and general exhaust are necessary. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:
solvent, vapours, etc. evaporating from tank (in still air)
aerosols, fumes from pouring operations,
intermittent container filling, low speed
conveyer transfers (released at low velocity
into zone of active generation)
direct spray, drum filling, conveyer loading,
crusher dusts, gas discharge (active generation
into zone of rapid air motion)

Air Speed:
0.25- 0.5 m/s (50- 100 f/min.)

0.5- 1 m/s (100- 200 f/min.)

1- 2.5 m/s (200- 500 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

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Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2.5 m/s (200-500 f/min.) for extraction of gases discharged 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

The need for respiratory protection should also be assessed where incidental or accidental exposure is anticipated: Dependent on levels of contamination, PAPR, full face air purifying devices with P2 or P3 filters or air supplied respirators should be evaluated.

The following protective devices are recommended where exposures exceed the recommended exposure control guidelines by factors of:

10; high efficiency particulate (HEPA) filters or cartridges

10-25; loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator.

25-50; a full face-piece negative pressure respirator with HEPA filters

50-100; tight-fitting, full face-piece HEPA PAPR

100-1000; a hood-shroud HEPA PAPR or full face-piece supplied air respirator operated in pressure demand or other positive pressure mode.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless or yellowish crystals or white crystalline powder;
does not mix with water. Soluble in alcohol (1:6), acetone (1:4),
arachis oil (1:35).

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Molecular Weight: 344.5

Melting Range (°C): 118- 123

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable.

Volatile Component (%vol): Negligible

Relative Vapour Density (air=1): Not applicable

Lower Explosive Limit (%): Not available.

Autoignition Temp (°C): Not available.

State: Divided solid

Boiling Range (°C): Not available.

Specific Gravity (water=1): Not available.

pH (as supplied): Not applicable

Vapour Pressure (kPa): Negligible

Evaporation Rate: Not applicable

Flash Point (°C): Not applicable

Upper Explosive Limit (%): Not available.

Decomposition Temp (°C): Not available.

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Side-effects associated with both natural and synthetic androgens include increases in nitrogen retention and skeletal weight, sodium, calcium, potassium, inorganic phosphates, and water retention, oedema, increased vascularisation of the skin, hypercalcaemia, and increased bone growth. Large and repeated doses in early puberty may cause closure of the epiphyses and stop linear growth. Jaundice, cholestatic hepatitis and abnormal liver -function tests may occur. Liver effects occur mainly with 17alpha alkylated derivatives. Other effects may include hypersensitivity characterised by skin manifestations and anaphylactoid reactions. In men, large doses suppress spermatogenesis and cause degenerative changes in seminiferous tubules. Excessive stimulation may be evidence of excessive doses especially in elder men.

In women androgens inhibit the activity of the anterior pituitary which results in the suppression of ovarian activity and menstruation. Continued administration of large doses may produce symptoms of virilism including male-pattern hirsutism, deepening of the voice , atrophy of the breasts and endometrial tissue, acne, seborrhea, and hypertrophy of the clitoris. Libido may be increased and lactation suppressed.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

The dust may produce eye discomfort causing transient smarting, blinking.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Toxic effects may result from skin absorption.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.

High doses of the androgens over prolonged periods may produce hepatic tumours. Androgens may also accelerate growth of malignant neoplasms of the prostate. The prolonged use of 17alpha alkylated derivatives in particular has been associated with the development of hepatic adenomas and hepatocellular carcinoma. In pregnant women, androgens may cause virilisation of the external genitalia of the female foetus. Large and repeated doses of androgens in early puberty may cause closure of the epiphyses (growth areas at the end of

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Section 11 - TOXICOLOGICAL INFORMATION

long bones) and prevent linear growth. Elderly males may become over-stimulated. In females, the inhibitory action of testosterone on the activity of the pituitary results in suppression of ovarian activity. In men, large doses suppress spermatogenesis and cause degenerative changes in the seminiferous tubules creating a form of sterility. Androgens may accelerate the growth of malignant tumours of the prostate. Liver cancers (hepatic angiosarcoma) have developed in patients undergoing androgen therapies for prolonged periods. This effect has also been noted amongst body builders self-administering anabolic steroids.

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 1000 mg/kg

Intraperitoneal (rat) LD50: 585 mg/kg

Subcutaneous (rat) LD50: >5000 mg/kg

IARC Cancer Review: Animal Sufficient Evidence.

Neoplastic by RTEC criteria

Equivocal tumorigen by RTEC criteria

Reproductive effector in woman

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

No data for testosterone propionate.

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible. Special hazard may exist - specialist advice may be required.
- Consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury or incinerate residue at an approved site.
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
- Puncture containers to prevent re-use and bury at an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable

No data available for testosterone propionate as CAS: 57-85-2.

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Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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