SAFETY DATA SHEET

1. Identification

Product identifier **AVODART SOFT GELATIN CAPSULES**

Other means of identification

Synonyms AVODART SOFT GELATIN CAPSULES 0.5 MG * AVOLVE SOFT GELATIN CAPSULES 0.5 MG * DUAGEN SOFT GELATIN CAPSULES 0.5 MG * DUTASTERIDE SOFT GELATIN CAPSULES 0.5 MG * GI198745X SOFT GELATIN CAPSULES * PRODUCT CODE GX CE2 * DUTASTERIDE, FORMULATED PRODUCT

Recommended use Medicinal Product

This safety data sheet is written to provide health, safety and environmental information for people handling this formulated product in the workplace. It is not intended to provide information relevant to medicinal use of the product. In this instance patients should consult prescribing information/package insert/product label or consult their pharmacist or physician. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate safety data sheet for each ingredient.

Recommended restrictions No other uses are advised.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

GlaxoSmithKline US
5 Moore Drive
Research Triangle Park, NC 27709 USA
US General Information (normal business hours): +1-888-825-5249

Email Address: msds@gsk.com
Website: www.gsk.com

EMERGENCY PHONE NUMBERS -
TRANSPORT EMERGENCIES:
US / International toll call +1 703 527 3887
available 24 hrs/7 days; multi-language response

2. Hazard(s) identification

Classified hazards

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

Label elements

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

Hazard(s) not otherwise classified (HNOC)

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
DUTASTERIDE	GI198745X 4A, 6A, 8-TRIMETHYL-2-OXO-2, 4A, 4B, 5, 6, 6A, 7, 8, 9, 9A, 10, 11, 11A-TETRADECAHYDRO-1H-INDENO(5,4-F) QUINOLINE-7-CARBOXYLIC ACID(2,5-BIS-TRIFLUOROMETHYLPHENYL)-AMIDE 5-ARI GG745	164656-23-9	<1.0

Chemical name	Common name and synonyms	CAS number	%
2,6-DI-TERT-BUTYL-P-CRESOL	BUTYLATED HYDROXYTOLUENE 4-METHYL-2,6-DI-TERT-BUTYLPHENOL BUTYLHYDROXYTOLUENE DIBUTYLATED HYDROXYTOLUENE 2,6-DI-TERT-BUTYL-1-HYDROXY-4-METHYLBENZENE 3,5-DI-TERT-BUTYL-4-HYDROXYTOLUENE 2,6-BIS(1,1-DIMETHYLETHYL)-4-METHYLPHENOL 2,6-DI-TERT-BUTYL-4-METHYLPHENOL 2,6-TERT-BUTYL-4-METHYLPHENOL 2,6-DI-TERT-BUTYL-PARA-CRESOL	128-37-0	<0.1
Other components below reportable levels			>99.0

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation
In case of accident by inhalation: remove casualty to fresh air and keep at rest. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Skin contact
Immediately flush skin with plenty of water. Take off contaminated clothing and wash before reuse. Get medical attention if symptoms occur.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion
If swallowed, rinse mouth with water (only if the person is conscious). If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed
The following adverse effects have been noted with therapeutic use of this material: decrease in ejaculatory volume; mild reduction in sperm count; breast enlargement and tenderness in males; decrease in libido; symptoms of hypersensitivity (such as skin rash, hives, itching).

Indication of immediate medical attention and special treatment needed
No specific antidotes are recommended. Treat according to locally accepted protocols. For additional guidance, refer to the current prescribing information or to the local poison control information centre.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Pre-placement and periodic health surveillance is not usually indicated. The final determination of the need for health surveillance should be determined by local risk assessment.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
None known.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Collect spillage. Prevent product from entering drains. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

GSK

Components	Type	Value	Note
DUTASTERIDE (CAS 164656-23-9)	8 HR TWA	0.3 mcg/m3	REPRODUCTIVE HAZARD, SKIN
	OHC	5	REPRODUCTIVE HAZARD, SKIN
	Short Term Excursion	3 mcg/m3	REPRODUCTIVE HAZARD, SKIN

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)	TWA	2 mg/m3	Inhalable fraction and vapor.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)	TWA	10 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

General ventilation normally adequate.

Individual protection measures, such as personal protective equipment

Eye/face protection

Not normally needed. If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection

Not normally needed. For prolonged or repeated skin contact use suitable protective gloves.

Other

Not normally needed. Wear suitable protective clothing as protection against splashing or contamination.

Respiratory protection

No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. For advice on suitable monitoring methods, seek guidance from a qualified environment, health and safety professional. New or expectant mothers might be at greater risk from overexposure. Risk assessments must take this into consideration. Female employees anticipating pregnancy or with a confirmed pregnancy must be encouraged to notify an occupational health professional or their line manager. This will act as the trigger for individual re-assessment of the employee's work practices.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Capsule.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Fluorine.
Hazardous decomposition products	None known. Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Health injuries are not known or expected under normal use.
Eye contact	Health injuries are not known or expected under normal use. Direct contact with eyes may cause temporary irritation.
Ingestion	Health injuries are not known or expected under normal use. May be harmful if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms related to the physical, chemical and toxicological characteristics	The following adverse effects have been noted with therapeutic use of this material: decrease in ejaculatory volume; mild reduction in sperm count; breast enlargement and tenderness in males; decrease in libido; symptoms of hypersensitivity (such as skin rash, hives, itching).

Information on toxicological effects

Acute toxicity	Health injuries are not known or expected under normal use.

Components	Species	Test Results
2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)		
Acute		
Oral		
LD50	Rat	890 mg/kg
DUTASTERIDE (CAS 164656-23-9)		
Acute		
Dermal		
MLD	Rabbit	> 2000 mg/kg
Oral		
MLD	Mouse	> 2000 mg/kg
	Rat	> 1500 mg/kg
Subacute		
Oral		
NOAEL	Rat	< 2 mg/kg, 30 days female
		2 mg/kg, 30 days male

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Health injuries are not known or expected under normal use. Due to partial or complete lack of data the classification is not possible.

Irritation Corrosion - Skin

DUTASTERIDE
Acute dermal irritation; OECD 404, Primary dermal irritation index = 0.1
Result: Slightly irritating
Species: Rabbit

Serious eye damage/eye irritation Health injuries are not known or expected under normal use. Direct contact with eyes may cause temporary irritation.

Eye

DUTASTERIDE
Acute ocular irritation; OECD 405
Result: Slight to moderate conjunctival irritation; some iridial involvement
Species: Rabbit

Respiratory or skin sensitization

Respiratory sensitization No studies have been conducted.

Skin sensitization None known. This product is not expected to cause skin sensitization.

Sensitization

DUTASTERIDE
Buehler assay
Result: Negative
Species: Guinea pig

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Mutagenicity

DUTASTERIDE
Ames Assay, GLP assay
Result: Negative
Chromosomal Aberration Assay In Vitro, CHO cells
Result: Negative
Micronucleus Test, GLP assay; maximum dose = 1500 mg/kg Result: Negative
Species: Rat

Carcinogenicity Health injuries are not known or expected under normal use. Due to partial or complete lack of data the classification is not possible.

DUTASTERIDE
2 year bioassay
Result: Negative
Species: Mouse
2 year bioassay, Female
Result: Negative
Species: Rat

Carcinogenicity

DUTASTERIDE — 2 year bioassay, Male
Result: Increase in benign testicular interstitial cell tumours; high dose only (equivalent of 158X human therapeutic dose)
Species: Rat

IARC Monographs. Overall Evaluation of Carcinogenicity

2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0) — 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity — Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals. These effects are linked only to high doses of this substance; low doses did not produce this adverse effect.

Reproductivity

DUTASTERIDE
Embryo-foetal development - Oral
Result: Evidence of feminisation of male foetuses with 0.05 mg/kg/day or more; maternal and foetal toxicity with 2.5 mg/kg/day or more
Species: Rat
Embryo-foetal development - Oral
Result: No maternal toxicity with doses </= 200 mg/kg/day; evidence of feminisation of male foetuses with doses >/= 0.05 mg/kg/day
Species: Rabbit
Female Fertility / Early Embryonic Development
Result: Maternal and foetal toxicity (increased foetal resorptions, decreased foetal weight, feminisation of male foetuses) with doses of 2.5 mg/kg/day or more
Species: Rat
Fertility, Male
Result: Decreased fertility with doses of 0.05 mg/kg/day for up to 31weeks
Species: Rat
Pre- and Post-natal development
Result: Maternal toxicty (reduced weight and lengthened gestation) at 2.5 mg/kg/day or more; no toxic effect dose in male offspring (feminisation) <0.05 mg/kg/day; no toxic effect dose in female offspring = 0.05 mg/kg/day with adverse effects at 2.5 mg/kg/day or
Species: Rat

Specific target organ toxicity - single exposure — None known.

Specific target organ toxicity - repeated exposure — None known.

Aspiration hazard — Not likely, due to the form of the product.

Chronic effects — Not available.

Further information — Caution - Pharmaceutical agent. Occupational exposure to the substance or mixture may cause adverse effects.

12. Ecological information

Ecotoxicity — Contains a substance which causes risk of hazardous effects to the environment.

Components		Species	Test Results
2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)			
Aquatic			
Acute			
Algae	EC50	Green algae (Desmodesmus subspicatus)	> 0.4 mg/l, 72 hour EU Method C.3
Crustacea	EC50	Daphnia magna	0.61 mg/l, 48 hours OECD Guideline 202

Components		Species	Test Results
Fish	LC0	Danio rerio	> 0.57 mg/l, 96 hour Directive 84/449/EEC, C.1
Chronic			
Crustacea	NOEC	Daphnia magna	0.316 mg/l, 21 day OECD Guide-line 202, part 2 "Daphnia sp., Reproduction Test"
DUTASTERIDE (CAS 164656-23-9)			
Aquatic			
Acute			
Activated Sludge Respiration	IC50	Residential sludge	> 1000 mg/l, 3 hours
Crustacea	EC50	Water flea (Daphnia magna)	> 1 mg/l, 48 hours
	NOEC	Water flea (Daphnia magna)	> 1 mg/l, 48 hours
Chronic			
Fish	Growth test LOEC	Fathead minnow (Juvenile Pimephales promelas)	0.079 mg/l, 101 days Flow-through test, extended OECD 210
	Growth test NOEC	Fathead minnow (Juvenile Pimephales promelas)	0.021 mg/l, 101 days
Terrestrial			
Acute			
Earthworm	EC50	Manure worm (Eisenia foetida)	1010 mg/kg, 28 days
	NOEC	Manure worm (Eisenia foetida)	1010 mg/kg, 28 days

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Photolysis

UV/visible spectrum wavelength

DUTASTERIDE — 300, pH 2-11

Biodegradability

Percent degradation (Aerobic biodegradation-ready)

2,6-DI-TERT-BUTYL-P-CRESOL — 4.5 %, 28 days Modified MITI test, Activated sludge
< 10 %, 20 Days Closed bottle test, Residential sludge

DUTASTERIDE — < 1 %, 28 days Modified Sturm test.

Percent degradation (Aerobic biodegradation-soil)

DUTASTERIDE — < 2.3 %, 64 days

Percent degradation (Anaerobic biodegradation)

DUTASTERIDE — 12 %, 56 days

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

DUTASTERIDE — 3.87

Bioconcentration factor (BCF)

2,6-DI-TERT-BUTYL-P-CRESOL — 230 - 2500 Measured, Cyprinus carpio, carp

Mobility in soil Not available.

Mobility in general

Volatility

Henry's law

2,6-DI-TERT-BUTYL-P-CRESOL — 0.000004, 25 Estimated

DUTASTERIDE — 0 atm m^3/mol Calculated, 25 C

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as a dangerous good.

Read safety instructions, SDS and emergency procedures before handling.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	MARPOL Annex II applies to liquids used in a ship's operation that pose a threat to the marine environment. These materials may not be transported in bulk.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)

US. New Jersey Worker and Community Right-to-Know Act

2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)

US. Pennsylvania Worker and Community Right-to-Know Law

2,6-DI-TERT-BUTYL-P-CRESOL (CAS 128-37-0)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

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

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	10-24-2013
Revision date	10-26-2015
Version #	22
Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1* Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 0 Flammability: 0 Instability: 0
References	GSK Hazard Determination
Disclaimer	The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.