APOTEX
ADVANCING GENERICS

Material Safety Data Sheet

Section 1. Product Identification and Uses

Common/Trade name	**Letrozole Tablets, USP 2.5 mg**	**DSL#**	Not on the DSL list.
Synonyms	Not available.	**CAS#**	Not applicable.
Chemical name	Not available.	**Molecular weight**	Not applicable.
Chemical family	Triazole-benzonitrile derivative	**Chemical formula**	Not applicable.
Supplier	Apotex Corp. Weston, Florida 33326	**Chemical structure**	Not applicable.
Material uses	Pharmaceutical industry. Dosage form Therapeutic category: Antineoplastic (non-steroid aromatase inhibitor)	**Manufacturer**	Apotex Inc. 150 Signet Drive Weston, Ontario M9L 1T9 416-749-9300
Emergency phone	FOR EMERGENCIES INVOLVING DANGEROUS GOODS Call CANUTEC's 24-hr Number 613-996-6666 For general information call: 1-(416)-749-9300 ext. 8483 (8 AM-4 PM)	**DIN**	Not available.

Section 2. Hazards Identification

Potential Acute Health Effects

Not expected to be hazardous under normal handling conditions.

Potential Chronic Health Effects

Possible hypersensitization.

WHMIS

CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

Remark

Covered by Food & Drug Act and therefore not regulated under WHMIS

Apotex Hazard Classification (For Apotex internal practices only)

This material has been assigned hazard class: **2**

Section 3. First Aid Measures

Eye contact	Flush with copious quantities of water. If irritation persists, obtain medical advice.
Skin contact	Not expected to result in hazardous effects.
Hazardous skin contact	Flush with copious amounts of water. Seek medical attention if irritation persist.
Slight inhalation	Not expected to result in hazardous effects.
Hazardous inhalation	Remove from exposure. Persons developing serious hypersensitivity reactions must receive immediate medical attention. If not breathing give artificial respiration (use protective mask with one-way valve). If breathing is difficult give oxygen.
Slight ingestion	Flush out mouth with water.

Continued on Next Page

Hazardous ingestion Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water. If breathing has stopped, trained personnel should begin artificial respiration (use protective mask with one -way valve), or if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Seek medical attention.
Overdose treatment: Vomiting may be induced if patient is alert. Supportive care with frequent monitoring of vital signs is recommended.

Section 4. Hazardous Ingredients

Name	CAS #	% (w/w)
Letrozole	112809-51-5	1 - 5

Toxicity values of the hazardous ingredients

Refer to Sec. 11.

TLV Not established.

Section 5. Fire Fighting Measures

The product is: May be combustible at high temperature.

Autoignition temperature Not available.

Fire degradation products Decomposition products may include the following materials: carbon oxides (CO, CO_2), nitrogen oxides (NO, NO_2 etc.).

Flash points Not applicable.

Flammable limits Not available.

Fire extinguishing procedures Extinguisher media: water spray, dry chemical, carbon dioxide or foam as appropriate for surrounding fire and materials.
Special fire fighting procedures: As with all fires, evacuate personnel to safe area. Firefighters should use self-contained breathing equipment and protective clothing.

Flammability Emits toxic fumes under fire conditions.

Remark

No additional remark.

Risks of explosion Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Remark

No additional remark.

Section 6. Accidental Release Measures

Spill and leak Vacuum or sweep up spillage. Avoid dust. Place spillage into an appropriate labeled waste disposal container. Wash contaminated clothing before reuse. Ventilate area and wash spill site. Follow appropriate Safe Work Practices.

Protective Clothing Pictograms in case of large spill and/or high exposure levels

Protective clothing in case of large spill Covering uniform. Gloves. Half facepiece Air Purifying Respirator with combination particulate/organic vapour cartridge. Splash goggles.

Continued on Next Page

Section 7. Handling and Storage

Precautions	Avoid breathing dust. Women with childbearing potential shall avoid exposure to this product.
Storage	Store at 20° to 25°C (68° to 77°F) excursions permitted to 15° to 30°C (59° to 86°F) [see USP Controlled Room Temperature]. Protect from moisture.

Section 8. Exposure Controls/Personal Protection

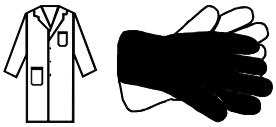
Engineering Controls

Exposure to this material can be controlled in many ways. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. This general information can be used to help develop specific control measures. Ensure that control systems are properly designed and maintained. Comply with occupational, environmental, fire, and other applicable regulations.
Engineering methods to control hazardous conditions are preferred. Methods include mechanical (local exhaust) ventilation, process or personnel enclosure and control of process conditions. Administrative controls and personal protective equipment may also be required. Supply sufficient replacement air to make up for air removed by exhaust system.

Personal Protection

Covering uniform. Gloves.

Protective Clothing (Pictograms)



PERSONAL PROTECTIVE EQUIPMENT/RESPIRATORY PROTECTION GUIDELINES :
Under normal work conditions, the use of respiratory protective equipment is not expected to be required. However major spills should require the use of designated personal protective equipment. Have appropriate equipment available for use in emergencies such as spills or fire.
If the physical state of the finished product is altered by crushing, grinding or breakage, appropriate PPE may be required including half facepiece Air Purifying Respirator with combination particulate/organic vapour cartridges.
The respirator use limitations specified by the approving agency and the manufacturer must be observed.
EYE/FACE PROTECTION : Not required under normal working conditions.
SKIN PROTECTION : The use of nitrile gloves is required for Good Manufacturing Practices (GMP) compliance.
RESISTANCE OF MATERIALS FOR PROTECTIVE CLOTHING : Resistance of specific materials can vary from product to product. Evaluate resistance under conditions of use and maintain clothing carefully.
EXPOSURE CONTROLS/PERSONAL PROTECTION COMMENTS: In the event clothing becomes contaminated, remove promptly. Launder before use. Inform laundry personnel of contaminant's hazards. Do not eat, drink or smoke in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.
PREGNANCY PRECAUTION:
Women with childbearing potential shall avoid exposure to this product unless:
True Barrier Technology Exists or
SAR (Supply Air Respirator) and Level A Environmental suit or
SCBA (Self Contained Breathing Apparatus) and Level A Environmental suit is worn.

Section 9. Physical and Chemical Properties

Physical state and appearance	Dark yellow, round, biconvex, film-coated tablets engraved "APO" on one side, "LET" over "2.5" on the other side.		
pH	Not available.	**Taste**	Not available.
Odor threshold	Not available.	**Odor**	Not available.
Volatility	Not available.		
Melting point/ Freezing point	Not available.		
Boiling point	Not available.		
Specific gravity	Not available.		
Vapor density	Not available.		
Vapor pressure	Not available.		
Partition Coefficient:	Not available.		
Ionicity (surface active agent)	Not available.		

Continued on Next Page

Critical temperature	Not available.
Instability temperature	Not available.
Conditions of instability	No additional remark.
Dispersion properties	See solubility.
Evaporation rate	Not available.
Solubility	Not available.

Section 10. Stability and Reactivity

Stability	The product is stable.
Hazardous decomp. products	Not available.
Degradability	Not available.
Corrosivity	Not corrosive
	Remark No additional remark.
Reactivity/ Incompatibility	Avoid exposure to moisture.
	Remark Not additional remark.

Section 11. Toxicological Information

Routes of entry	As the product is a solid dosage form, the major route of entry is ingestion. Other routes of entry, including inhalation, skin and eye contact may occur only under certain circumstances.
Toxicity data	Letrozole: RTECS: DI4957000 LD50: >2000 mg/kg (oral-rat) LD50: 6000 mg/m^2 TDLo: 1500 mg/kg/150 days intermittent (oral-woman) Irritancy data: rabbit/eye, skin: negative
Long-term effects	Possible hypersensitization. Target organs: Reproductive system Carcinogenicity: Not listed as carcinogen by IARC, NTP, ACGIH, or OSHA. Studies in animals have shown a dose-related increased incidence of benign ovarian tumors and hepatocellular adenoma and carcinoma at 0.6 to 60 mg/kg/day for two years, and ovarian hyperplasia at doses of 0.1 to 10 mg/kg/day. Reproductive and Developmental Effects: Pregnancy Category X. Letrozole causes a decrease in estrogen levels. In rats, at doses of 0.003 mg/kg and above and in rabbits at doses of 0.002 mg/kg, letrozole caused decreased fertility, embryo and fetal death, and abnormal fetal development. In baboons, letrozole caused miscarriage due to decreased maternal estrogen levels. Mutagenicity: Letrozole was not mutagenic in in vitro tests (Ames and E.coli bacterial tests) but was observed to be a potential clastogen in in vitro assays (CHO K1 and CCL 61 Chinese hamster ovary cells). Letrozole was not clastogenic in vivo (micronucleus test in rats).
	Remark Medical conditions aggravated by exposure: Hypersensitivity to material.
Short-term effects and Signs & Symptoms of overexposure	Adverse effects may include chest pain, shortness of breath, swelling of feet or lower legs, mental depression, nausea, loss of appetite, anxiety, joint pain, weakness, constipation, cough, diarrhea, dizziness, headache, hot flashes, increased sweating, muscle pain, skin rash or itching, sleepiness, stomach pain or upset, unusual tiredness, vomiting, weight gain, loss of hair, bone fracture, breast pain, chills, cough or hoarseness, fever, abdominal pain, confusion, incoherent speech, increased urination, thirst, metallic taste, altered sense of balance. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.
	Remark The above adverse effects are based on clinical studies.

Continued on Next Page

Section 12. Ecological Information

Ecological Information Not readily biodegradable.

Section 13. Disposal Considerations

Waste Disposal For internal Apotex waste disposal: Collect in sealed containers and place in appropriate labeled pharmaceutical solid waste class 261A.
For external waste disposal: Follow all appropriate safe work procedures and federal, provincial and local regulations for disposal. Use only licensed disposal and waste hauling companies.

Section 14. Transport Information TDG, IATA, IMDG

Not controlled under TDG (Canada).

UN Not applicable (PIN and PG).

Special Provisions for Transport Not applicable.

Section 15. Other Regulatory Information and Pictograms

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX

NFPA-HEALTH-blue :1-Slightly hazardous to health.
NFPA-FLAMMABILITY-red :1-Materials that must be preheated before ignition can occur.
NFPA-REACTIVITY-yellow :0-Normally stable.

National Fire Protection Association (U.S.A.)

Hazardous Material Information System (U.S.A.)

Health Hazard	*	1
Fire Hazard		1
Reactivity		0
Personal Protection		X

* - Chronic hazard indicator
X - See Section 8

HCS (Hazardous Communication System) (OHSA, U.S.A.)

Not an HCS controlled material in USA.

DOT (Department of Transportation) (U.S.A) (Pictograms) Not a DOT controlled material (United States).

EU Classification and Labelling Exempt from requirements of EU Dangerous Preparations directive - product regulated as a medicinal product, cosmetic product or medical device. R63- Possible risk of harm to the unborn child. R40-Limited evidence of a carcinogenic effect.

ADR (European Agreement of Dangerous goods by Road) (Pictograms) Not controlled under ADR (Europe).

Other Regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Continued on Next Page

Section 16. Other Information

References

The Merck Index
HSDB & RTECS Database
Poisindex 2005
RxList Monographs
Apotex Product Monograph

MSDS:

U.S. Pharmacopeia

Validation date: (year.month)

December 26, 2007

Revision date: 5/30/2012.

Apotex Inc.
150 Signet Drive
Weston (Toronto),
Ontario
Canada M9L 1T9
(416) 749-9300

Notice to Reader