

# Droloxifene

sc-205660



The Power to Question

## Material Safety Data Sheet

Hazard Alert Code  
Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

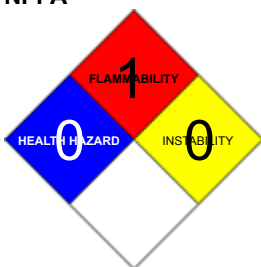
### PRODUCT NAME

Droloxifene

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY

ChemWatch

Within the US & Canada: 877-715-9305

Outside the US & Canada: +800 2436 2255

(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

C26-H29-N-O2, "phenol, 3-[1-(4-(2-dimethylamino)ethoxy)phenyl]-2-phenyl-1-butenyl]", "(E)-", "(E)-1-[4'-(2-dimethylamino)ethoxy)phenyl]-2-phenyl-1-butenyl]phenol", "(E)-alpha-[para-(2-(dimethylamino)ethoxy)phenyl]-alpha'-ethyl-3-", stilbenol, "(E)-1-(4'-(2-dimethylaminoethoxy)phenyl)-1-(3-hydroxyphenyl)-", 2-phenylbut-1-ene, trans-1-(4-beta-dimethylaminoethoxyphenyl)-1-(3-hydroxyphenyl)-, E-droloxifene, 3-hydroxytamoxifen, "tamoxifen, 3-hydroxy-", K-060, K-060E, K-21060E, "anti-oestrogen/ anti-neoplastic"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

|              |   | Min | Max |
|--------------|---|-----|-----|
| Flammability | 1 |     |     |
| Toxicity     | 2 |     |     |
| Body Contact | 2 |     |     |
| Reactivity   | 1 |     |     |
| Chronic      | 3 |     |     |

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## **EMERGENCY OVERVIEW**

### **RISK**

May impair fertility.

May cause harm to the unborn child.

May cause harm to breastfed babies.

Toxic danger of serious damage to health by prolonged exposure if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## **POTENTIAL HEALTH EFFECTS**

### **ACUTE HEALTH EFFECTS**

#### **SWALLOWED**

■ Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

■ Harmful effects of tamoxifen and related products include hot flushes, oedema, vaginal bleeding, itching in the genitals, digestive upsets, dizziness, rashes, low blood calcium and tumour pain. Transient loss of white cells and platelets have been reported. There have also been reports of headache, depression, fatigue, confusion, leg cramps, hair loss and dry skin. Tamoxifen is excreted very slowly.

#### **EYE**

■ There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

■ Systemic tamoxifen may be secreted in tears and deposited on the cornea, producing complications. Deposits are made in a whorl pattern of granules. Because the drug is not very soluble in tears, the whorls may be created by successive positions of the lid margins as the tear film evaporates.

#### **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.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### **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.

### **CHRONIC HEALTH EFFECTS**

■ Toxic danger of serious damage to health by prolonged exposure if swallowed.

This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. This has been demonstrated via both short- and long-term experimentation.

Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.

Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

Clinical trials in postmenopausal women with metastatic breast cancer, undergoing treatment with tamoxifen, showed dose-related changes in hormone levels. In patients receiving tamoxifen for more than a year, deposits and swelling around the eye were reported. Long-term exposure to tamoxifen and related compounds may produce changes in sex organs, intestines and blood-producing industries.

Tamoxifen produces endometrial cancer in humans, the risk being increased about 2-3 fold.

Droloxifene was studied in rats for its modulation of chemically induced mammary tumours. In one study with 7,12-dimethylbenz[a]anthracene, inhibition of mammary tumours was observed, while in another study with N-methyl-N-nitrosourea, there was no effect or a slight increase in the incidence of mammary tumours.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME        | CAS RN     | %   |
|-------------|------------|-----|
| droloxifene | 82413-20-5 | >98 |

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

#### EYE

If this product comes in contact with the eyes

- Wash out immediately with fresh 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.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- 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.

Droloxifene is well absorbed in humans after oral doses. It undergoes both oxidative metabolism and direct glucuronidation, and the elimination half-life is about 24 hours.

### Section 5 - FIRE FIGHTING MEASURES

|                            |                |
|----------------------------|----------------|
| Vapor Pressure (mmHG)      | Negligible     |
| Upper Explosive Limit (%)  | Not available. |
| Specific Gravity (water=1) | Not available  |
| Lower Explosive Limit (%)  | Not available  |

#### EXTINGUISHING MEDIA

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

#### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent 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.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

#### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.

- 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 (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds.; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
- In the same way as gases and vapors, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL).are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC)
- A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.
- Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.
- Dry dust can 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-meter/sec
- A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source
- One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapors).
- Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.

Combustion products include carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.

#### **FIRE INCOMPATIBILITY**

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

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

### **MINOR SPILLS**

Environmental hazard - contain spillage.

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

### **MAJOR SPILLS**

Environmental hazard - contain spillage.

Moderate hazard.

- CAUTION Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise Emergency Services.

## **Section 7 - HANDLING AND STORAGE**

### **PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

- DO NOT enter confined spaces until atmosphere has been checked.
  - DO NOT allow material to contact humans, exposed food or food utensils.
  - Avoid contact with incompatible materials.
  - When handling, DO NOT eat, drink or smoke.
  - Keep containers securely sealed when not in use.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately. Launder contaminated clothing before re-use.
  - Use good occupational work practice.
  - Observe manufacturer's storing and handling recommendations.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
  - In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorization or permit.

### RECOMMENDED STORAGE METHODS

- Glass container is suitable for laboratory quantities
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations

For major quantities

- Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).
- Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

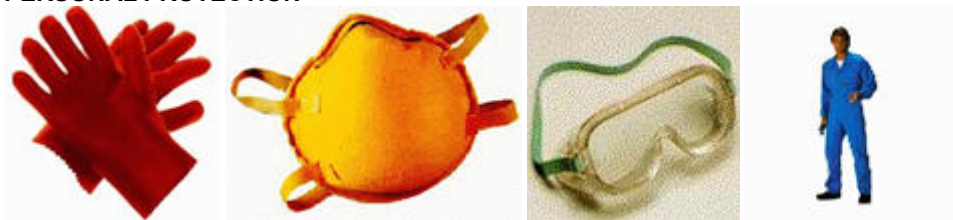
## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- droloxifene CAS82413-20-5

### PERSONAL PROTECTION



### RESPIRATOR

- Particulate. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

### EYE

When handling very small quantities of the material eye protection may not be required.

For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs

- Chemical goggles
- Face shield. Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

## HANDS/FEET

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference.
- Double gloving should be considered.
- PVC gloves.
- Change gloves frequently and when contaminated, punctured or torn.
- Wash hands immediately after removing gloves.
- Protective shoe covers. [AS/NZS 2210]
- Head covering.

## OTHER

- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.
- Eye wash unit.
- Ensure there is ready access to an emergency shower.
- For Emergencies Vinyl suit

## ENGINEERING CONTROLS

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

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

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                                                                                                                                             | Air Speed                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| solvent, vapors, etc. evaporating from tank (in still air)                                                                                                      | 0.25-0.5 m/s (50-100 f/min.)    |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.)      |
| direct spray, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)                                    | 1-2.5 m/s (200-500 f/min.)      |
| Within each range the appropriate value depends on                                                                                                              |                                 |
| Lower end of the range                                                                                                                                          | Upper end of the range          |
| 1 Room air currents minimal or favorable to capture                                                                                                             | 1 Disturbing room air currents  |
| 2 Contaminants of low toxicity or of nuisance value only.                                                                                                       | 2 Contaminants of high toxicity |
| 3 Intermittent, low production.                                                                                                                                 | 3 High production, heavy use    |

#### 4 Large hood or large air mass in motion

#### 4 Small hood-local control only

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

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

|                           |                |                                |                |
|---------------------------|----------------|--------------------------------|----------------|
| State                     | Divided solid  | Molecular Weight               | 387.51         |
| Melting Range (°F)        | 320- 325       | Viscosity                      | Not Applicable |
| Boiling Range (°F)        | Not available  | Solubility in water (g/L)      | Immiscible     |
| Flash Point (°F)          | Not available  | pH (1% solution)               | Not applicable |
| Decomposition Temp (°F)   | Not available. | pH (as supplied)               | Not applicable |
| Autoignition Temp (°F)    | Not available  | Vapor Pressure (mmHG)          | Negligible     |
| Upper Explosive Limit (%) | Not available. | Specific Gravity (water=1)     | Not available  |
| Lower Explosive Limit (%) | Not available  | Relative Vapor Density (air=1) | >1             |
| Volatile Component (%vol) | Negligible     | Evaporation Rate               | Not applicable |

### APPEARANCE

Powder; does not mix well with water.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

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

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

droloxifene

### TOXICITY AND IRRITATION

DROLOXIFENE

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

#### TOXICITY

#### IRRITATION

Oral (rat) LD50 >4500 mg/kg

Nil Reported

Intraperitoneal (rat) LD50 >2250 mg/kg

Oral (mouse) LD50 >3000 mg/kg

Intraperitoneal (mouse) LD50 >1500 mg/kg

■ **The substance is classified by IARC as Group 3**

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

**CARCINOGEN**

|                         |                                                                                             |              |                                |
|-------------------------|---------------------------------------------------------------------------------------------|--------------|--------------------------------|
| Droloxifene             | International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs | Group        | 3                              |
| TAMOXIFEN AND ITS SALTS | US Environmental Defense Scorecard Recognized Carcinogens                                   | Reference(s) | P65                            |
| TAMOXIFEN AND ITS SALTS | US Environmental Defense Scorecard Suspected Carcinogens                                    | Reference(s) | P65                            |
| droloxifene             | US - Maine Chemicals of High Concern List                                                   | Carcinogen   | CA Prop 65; IARC; NTP 11th ROC |

**Section 12 - ECOLOGICAL INFORMATION**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

**Ecotoxicity**

| Ingredient  | Persistence: Water/Soil | Persistence: Air  | Bioaccumulation | Mobility |
|-------------|-------------------------|-------------------|-----------------|----------|
| droloxifene | HIGH                    | No Data Available | LOW             | LOW      |

**Section 13 - DISPOSAL CONSIDERATIONS**

**Disposal Instructions**

All waste must be handled in accordance with local, state and federal regulations.

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorized landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)



- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## Section 14 - TRANSPORTATION INFORMATION



### DOT:

|                                            |          |                                                |                                           |
|--------------------------------------------|----------|------------------------------------------------|-------------------------------------------|
| Symbols:                                   | G        | Hazard class or Division:                      | 9                                         |
| Identification Numbers:                    | UN3077   | PG:                                            | III                                       |
| Label Codes:                               | 9        | Special provisions:                            | 8, 146, 335, B54, IB8, IP3, N20, T1, TP33 |
| Packaging: Exceptions:                     | 155      | Packaging: Non-bulk:                           | 213                                       |
| Packaging: Exceptions:                     | 155      | Quantity limitations: Passenger aircraft/rail: | No limit                                  |
| Quantity Limitations: Cargo aircraft only: | No limit | Vessel stowage: Location:                      | A                                         |
| Vessel stowage: Other:                     | None     |                                                |                                           |

Hazardous materials descriptions and proper shipping names:  
Environmentally hazardous substance, solid, n.o.s

### Air Transport IATA:

|                     |      |                    |      |
|---------------------|------|--------------------|------|
| ICAO/IATA Class:    | 9    | ICAO/IATA Subrisk: | None |
| UN/ID Number:       | 3077 | Packing Group:     | III  |
| Special provisions: | A97  |                    |      |

### Cargo Only

|                                      |      |                                      |         |
|--------------------------------------|------|--------------------------------------|---------|
| Packing Instructions:                | 956  | Maximum Qty/Pack:                    | 400 kg  |
| Passenger and Cargo                  |      | Passenger and Cargo                  |         |
| Packing Instructions:                | 956  | Maximum Qty/Pack:                    | 400 kg  |
| Passenger and Cargo Limited Quantity |      | Passenger and Cargo Limited Quantity |         |
| Packing Instructions:                | Y956 | Maximum Qty/Pack:                    | 30 kg G |

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(contains droloxifene)

### Maritime Transport IMDG:

|                     |         |                     |         |
|---------------------|---------|---------------------|---------|
| IMDG Class:         | 9       | IMDG Subrisk:       | None    |
| UN Number:          | 3077    | Packing Group:      | III     |
| EMS Number:         | F-A,S-F | Special provisions: | 274 335 |
| Limited Quantities: | 5 kg    | Marine Pollutant:   | Yes     |

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(contains droloxifene)

## Section 15 - REGULATORY INFORMATION

**droloxifene (CAS: 82413-20-5) is found on the following regulatory lists;**

"International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","International Chemical Secretariat (ChemSec) SIN List (\*Substitute It Now!)"

## Section 16 - OTHER INFORMATION

### LIMITED EVIDENCE

- Ingestion may produce health damage\*.
- May produce discomfort of the eyes\*.
- Limited evidence of a carcinogenic effect\*.

\* (limited evidence).

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

■ For detailed advice on Personal Protective Equipment, refer to the following U.S. Regulations and Standards:

OSHA Standards - 29 CFR:

1910.132 - Personal Protective Equipment - General requirements

1910.133 - Eye and face protection

1910.134 - Respiratory Protection

1910.136 - Occupational foot protection

1910.138 - Hand Protection

Eye and face protection - ANSI Z87.1

Foot protection - ANSI Z41

Respirators must be NIOSH approved.

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