

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Fulvestrant 250 mg/5 mL solution for injection in Pre-filled syringe

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fulvestrant 250 mg/5 mL solution for injection in Pre-filled syringe

Intended Use:	Treatment of advanced breast cancer in postmenopausal women previously treated with hormonal therapy.
Details of the Supplier of the Safety Data Sheet	
Manufacturer: Intas Pharmaceuticals Ltd. Plot No. 457, 458 Village-Matoda, Bavla Road, Ta. Sanand, Dist. Ahmedabad-382 210, Gujarat, India	Sponsor: Accord Healthcare Pty Ltd Level 24, 570 Bourke Street, Melbourne, VIC, 3000, Australia

SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components:

Chemical name	CAS-No.	Concentration (% w/w)
Benzyl benzoate	120-51-4	>= 10 - < 20
Ethanol	64-17-5	>= 10 - < 20
Benzyl alcohol	100-51-6	>= 10 - < 20
Fulvestrant	129453-61-8	>= 1 - < 10

SECTION 3 - HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Reproductive toxicity : Category 1B
Effects on or via lactation
Chronic aquatic toxicity : Category 1
GHS label elements
Hazard pictograms :



MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Signal word : Danger
Hazard statements : H226 Flammable liquid and vapour.
: H302 Harmful if swallowed.
H360 May damage fertility or the unborn child.
H362 May cause harm to breast-fed children.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

SECTION 4 - FIRST AID MEASURES

- If inhaled** : Remove patient from exposure, keep warm and at rest. Obtain medical attention.
- In case of skin contact** : Remove contaminated clothing.
Wash skin with water.
If symptoms (irritation or blistering) occur obtain medical attention.
- In case of eye contact** : Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes.
Obtain medical attention.
- If swallowed** : Wash out mouth with water and give 200-300ml of water to drink.
Do NOT induce vomiting as a First-Aid measure.
Obtain medical attention.
- Most important symptoms and effects, both acute and delayed** : Refer to sections 2 and 11
Harmful if swallowed.
May damage fertility or the unborn child.
May cause harm to breast-fed children.
- Notes to physician** : Symptomatic treatment and supportive therapy as indicated.
For further detail consult the prescribing information.

SECTION 5 - FIRE FIGHTING MEASURES

- Suitable extinguishing media** : foam, CO2 or dry powder.
Water spray should be used to cool containers.
- Unsuitable extinguishing media** : Do not use water jet.
- Specific hazards during firefighting** : Flammable liquid and vapour.
The vapour is heavier than air and may travel a considerable distance to a source of ignition and flashback.
Combustion will evolve toxic vapours.
- Special protective equipment for firefighters** : A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures** : Ensure suitable personal protection during removal of spillages.
See Section 8.
Eliminate sources of ignition.
- Environmental precautions** : Prevent entry into drains, sewers or watercourses.
Collect spillage.
- Methods and materials for containment and cleaning up** : Absorb spillages onto sand, earth or any suitable adsorbent material.
Do not adsorb onto sawdust or other combustible materials.
Transfer to a container for disposal.
Wash the spillage area with water.
Avoid release to the environment.
See section 13.

SECTION 7 - HANDLING AND STORAGE

- Advice on safe handling** : Avoid contact with skin and eyes.
Avoid inhalation of vapour/mist.
Take precautionary measures against static discharges.
- Conditions for safe storage** : Keep container tightly closed, in a cool, well ventilated place.
Keep away from sources of ignition - No Smoking.
Protect from light.
- Recommended storage temperature** : 2 - 8 °C

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters/ Permissible concentration	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m ³	AU OEL
		STEL	1,000 ppm	ACGIH
Fulvestrant	129453-61-8	TWA	0.001 mg/m ³	COM; HYG

- Engineering measures** : The specific controls will depend on local

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

circumstances and should be based on the risk assessment. Appropriate controls to reduce exposure may include engineering controls, for example ventilation, procedural controls and the use of personal protection equipment.

Prevent entry into drains, sewers or watercourses. See Section 6 for environmental precautions.

Personal protective equipment

Respiratory protection

- : Use an air fed hood if the risk assessment does not support the selection of other protection.

Eye protection

- : Use safety glasses to protect against direct contact with the liquid if the risk assessment does not support the selection of other protection.

Skin and body protection

- : Use impervious clothing to protect against direct contact with the liquid or for repeated, excessive handling use full chemical protective suit if the risk assessment does not support the selection of other protection. Use chemical protective gloves with a permeation time greater than the activity duration. Take note of the information given by the PPE producer/supplier concerning permeability and breakthrough times and special workplace conditions.

Protective measures

- : Decisions about whether the use of personal protective equipment (PPE) is appropriate as part of the control strategy should be based on the workplace risk assessment and should take account of local legislative requirements for selection and use. There are multiple factors that will affect the specific requirements such as amount and concentration of the material, duration of exposure, frequency of exposure, external environmental conditions, the task, the user etc.

All the information above should not be used in isolation and should be considered in the context of the workplace risk assessment on a case by case basis.

The recommended personal protective equipment (PPE) is based on preventing the potential adverse health effects from exposure to the active pharmaceutical ingredient (API). The risk of exposure to the API in the formulation/product needs to be taken into consideration.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: No data available
Odour	: ethereal
Odour Threshold	: No data available
pH	: No data available
Melting point/range	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: 29 °C
Evaporation rate	: No data available
Upper explosion limit	: 3.5 %(V)
Lower explosion limit	: 19 %(V)
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: 365 °C
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	: No known reactivity hazard under normal conditions.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None known.
Conditions to avoid	: No conditions producing hazardous situations known.
Incompatible materials	: Not known.
Hazardous decomposition products	: No hazardous decomposition products are known.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

SECTION 11 - TOXICOLOGY INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity

: Acute toxicity estimate: 2,000 mg/kg
Method: Calculation method.

Remarks: May cause effects as described under single exposure.(STOT)

Acute inhalation toxicity

: Acute toxicity estimate: > 20 mg/l
Exposure time: 4 H
Test atmosphere: vapour
Method: Calculation method

Remarks: May cause effects as described under single exposure.(STOT)

Acute dermal toxicity

: Remarks: May cause effects as described under single exposure.(STOT)

Components:

Fulvestrant:

Acute oral toxicity

: Remarks: Low acute oral toxicity.

Acute inhalation toxicity

: Remarks: May cause effects as described under repeated exposure.(STOT)

Acute dermal toxicity

: Remarks: No information available.

Skin corrosion/irritation

Not classified based on available information.

Product:

: Remarks: May cause skin irritation.

Components:

Benzyl benzoate

: Remarks: May cause skin irritation.

Fulvestrant:

: Result: Mild skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

: The vapour and liquid are irritant.
May cause strong stinging and burning sensation.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Permanent damage is unlikely.

Components:

Benzyl benzoate

: Remarks: May cause eye irritation.

Benzyl alcohol:

: Remarks: The vapour and liquid are irritant.

Fulvestrant:

: Remarks: May cause eye irritation. Unlikely to be a severe irritant to the eye.

Respiratory or skin sensitisation

Skin sensitisation

: Not classified based on available information.

Respiratory sensitization

: Not classified based on available information.

Product:

: Remarks: Rare cases of skin sensitisation have been reported.

Components:

Benzyl benzoate

: Remarks: Repeated and/or prolonged contact may cause skin sensitisation.

Fulvestrant:

: Remarks: Unlikely to cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

Fulvestrant:

Germ cell mutagenicity -
Assessment

: The substance is not considered to be genotoxic.

Carcinogenicity

Not classified based on available information.

Components:

Fulvestrant:

Carcinogenicity - Assessment

: A lifetime study in animals has shown that repeated doses produce benign tumours of the ovaries and testes in rats., These effects are related to the compound's hormonal activity.

Reproductive toxicity

May damage fertility or the unborn child.

May cause harm to breast-fed children.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Components:

Fulvestrant:

Reproductive toxicity : Clear evidence of adverse effects on development, based on animal experiments., Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Repeated exposure may produce adverse effects on the reproductive systems of men and women., Studies in animals have shown that low doses produce embryo/foetotoxic effects in the absence of maternal toxicity., (including embryoletality).
Effects on or via lactation

STOT - single exposure

Not classified based on available information.

May cause harm to breast-fed children.

Components:

Benzyl alcohol : Remarks: May cause irritation to the upper respiratory tract. Ingestion may cause irritation of the gastrointestinal tract. The vapour has anaesthetic properties and when inhaled at concentrations above the occupational exposure limit it may cause headache, fatigue, dizziness, incoordination and loss of consciousness.

Fulvestrant : Remarks: No specific effects reported.

STOT - repeated exposure

Not classified based on available information.

Components:

Benzyl alcohol : Remarks: Repeated and/or prolonged contact with the skin may have a degreasing action and cause dermatitis.

Fulvestrant : Exposure routes: Oral
Remarks: An ingestion study in animals has shown that high doses produce adverse effects on the heart.

Aspiration toxicity

Not classified based on available information.

Components:

Fulvestrant: : No information available.

Further information Product: : Remarks: This health hazard assessment is based on a consideration of the composition of this product.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

SECTION 12 - ENVIRONMENTAL IMPACT INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.
Remarks: This environmental hazard assessment is based on information available on the components of the formulation. Information refers to Fulvestrant.

Components:

Fulvestrant:

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 0.047 mg/l
Exposure time: 72 H
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.0000057 mg/l
Exposure time: 42 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.01 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: No toxicity at the limit of solubility

M-Factor (Chronic aquatic toxicity) : 10,000

Toxicity to bacteria : IC50 (Sewage sludge organisms): > 100 mg/l
Exposure time: 3 H
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

Fulvestrant:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Biodegradation: < 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Not rapidly degradable.

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Bioaccumulative potential

Components:

Fulvestrant:

- Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 355
Concentration: 0.0001 mg/l
Method: OECD Test Guideline 305
Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 357
Concentration: 0.001 mg/l
Method: OECD Test Guideline 305
Remarks: The substance has low potential for bioaccumulation.

Mobility in soil

Components:

Fulvestrant:

- Mobility : Remarks: The substance is essentially insoluble in water.
Distribution among environmental compartments : Remarks: No information available.

Other adverse effects

No data available

SECTION 13 - DISPOSAL INFORMATION

Disposal methods

- Waste from residues : Disposal should be in accordance with local, state or national legislation.
Solvent residues must not be allowed to enter drains, sewers or watercourses or to contaminate the ground.
Dispose of contents/ container to an approved incineration plant.
Large volumes may be suitable for redistillation by solvent contractors.
- Contaminated packaging : Empty container will retain residue. Observe all hazard precautions.

SECTION 14 - TRANSPORTATION INFORMATION

ICAO/IATA

- UN No. : 1993
Proper Shipping Name : Flammable liquid, N.O.S. (ETHANOL, FULVESTRANT)

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

Class : 3
Packing Group : III

IMO/IMDG

UN No. : 1993
Proper Shipping Name : Flammable liquid, N.O.S. (ETHANOL, FULVESTRANT)
Class : 3
Packing Group : III
Marine pollutant : Marine pollutant

ADR

UN No. : 1993
Proper Shipping Name : Flammable liquid, N.O.S. (ETHANOL, FULVESTRANT)
Class : 3
Label(s) : 3
Packing Group : III
Environmental hazards : Environmentally hazardous

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Prohibition/Licensing Requirements : There is no applicable prohibition or notification/licensing requirements, including for carcinogens under Commonwealth, State or Territory legislation.

The components of this product are reported in the following inventories:

REACH : Not listed
DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.
Fulvestrant : 129453-61-8
AICS : Not listed
ENCS : Not listed
ISHL : Not listed
IECSC : Not listed
TCSI : Not listed
TSCA : Not On TSCA Inventory

SECTION 16 - OTHER DATA

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances

ANTT - National Agency for Transport by Land of Brazil

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

ASTM - American Society for the Testing of Materials; bw - Body weight
CMR - Carcinogen, Mutagen or Reproductive Toxicant
COM – In-house occupational exposure limit
CPR - Controlled Products Regulations
DSL - Domestic Substances List (Canada)
ECx - Concentration associated with x% response
ELx - Loading rate associated with x% response
EmS - Emergency Schedule
ENCS - Existing and New Chemical Substances (Japan)
ErCx - Concentration associated with x% growth rate response
ERG - Emergency Response Guide
GHS - Globally Harmonized System
GLP - Good Laboratory Practice
HYG – Analytical method for occupational exposure monitoring
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association; IC50 - Half maximal inhibitory concentration
ICAO - International Civil Aviation Organization
IECSC - Inventory of Existing Chemical Substances in China
IMDG - International Maritime Dangerous Goods
IMO - International Maritime Organization
ISHL - Industrial Safety and Health Law (Japan)
ISO - International Organisation for Standardization
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
n.o.s. - Not Otherwise Specified
Nch - Chilean Norm
NO(A)EC - No Observed (Adverse) Effect Concentration
NO(A)EL - No Observed (Adverse) Effect Level
NOELR - No Observable Effect Loading Rate
NOM - Official Mexican Norm
NTP - National Toxicology Program
OECD - Organization for Economic Co-operation and Development
OPPTS - Office of Chemical Safety and Pollution Prevention
PBT - Persistent, Bioaccumulative and Toxic substance
(Q)SAR - (Quantitative) Structure Activity Relationship
REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SADT - Self-Accelerating Decomposition Temperature
SDS - Safety Data Sheet; Sen – Capable of causing respiratory sensitization
Sk - Can be absorbed through skin, thus contributing to systemic effects
STEL - Short-term exposure limit 15-minutes time-weighted average
TLV - Threshold Limit Value (ACGIH)
TLV-C - Threshold Limit Value Ceiling limit (ACGIH)
TSCA - Toxic Substances Control Act (United States)
TWA – Long-term exposure limit 8h time-weighted average
UN - United Nations

MATERIAL SAFETY DATA SHEET

Version No: MSDS/Fulvestrant-AUS/DP-001

Effective Date: 8th February 2021

UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;

vPvB - Very Persistent and Very Bioaccumulative

WHMIS - Workplace Hazardous Materials Information System

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