SAFETY DATA SHEETS

This SDS packet was issued with item:

078906497

N/A

Merck Animal Health
One Merck Dr.
Whitehouse Station, NJ 08889

MATERIAL SAFETY DATA SHEET

Merck Animal Health urges each user or recipient of this MSDS to read the entire data sheet to become aware of the hazards associated with this material.

SECTION 1. IDENTIFICATION OF SUBSTANCE AND CONTACT INFORMATION

MSDS NAME: **INCURIN**

SYNONYM(S): INCURIN
INCURIN (estriol) tablets

MSDS NUMBER: SP002441

EMERGENCY NUMBER(S): Transportation Emergencies - CHEMTREC:
(800) 424-9300 (Inside Continental USA)
(703) 527-3887 (Outside Continental USA)
Rocky Mountain Poison Center (For Human Exposure):
(303) 595-4869

Animal Health Technical Services:
For Animal Adverse Events: Small Animals and Horses: (800) 224-5318
For Animal Adverse Events: Livestock: (800) 211-3573
For Animal Adverse Events: Poultry: (800) 219-9286

INFORMATION: Animal Health Technical Services:
For Small Animals and Horses: (800) 224-5318
For Livestock: (800) 211-3573
For Poultry: (800) 219-9286

MERCK MSDS HELPLINE: (800) 770-8878 (US and Canada)
(908) 473-3371 (Worldwide)
Monday to Friday, 9am to 5pm (US Eastern Time)

SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Tablets, Blister pack
White
Odorless
May cause cancer.
Reproductive toxicant.
May cause developmental effects.
May be harmful by inhalation, skin absorption or if swallowed.
May cause effects to:
reproductive system
endocrine system
nervous system
cardiovascular system
gastrointestinal tract
pancreas
kidney
liver
fetus

POTENTIAL HEALTH EFFECTS:

Estriol may cause gastrointenstinal tract irritation with abdominal cramps, nausea and vomiting. Prolonged ingestion may have adverse effects such as increased blood pressure, bloating, jaundice (yellow eyes or skin), gall bladder obstruction, weight gain or weight loss, change in sex drive, loss of appetite, swelling due to fluid and salt retention, and central nervous system effects such as headache, migraine, dizziness, mental depression. May cause effects on menstrual edema in females and reversible gynaecomastia in males. May also cause tenderness of breasts and changes in libido.

Based on animal studies, Estriol may cause cancer and adverse reproductive effects and birth defects.

LISTED CARCINOGENS

INGREDIENT	CAS NUMBER	OSHA	IARC	NTP	ACGIH
Estriol	50-27-1		1		

1 (IARC): IARC Group 1 - Carcinogenic to Humans

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

ALTERNATE CHEMICAL NAME: ESTRA-1,3,5(10)-TRIENE-3, 16, 17-TRIOL, (16ALPHA, 17BETA)-1,3,5-ESTRATRIENE-3BETA, 16ALPHA, 17BETA-TRIOL

PRODUCT USE: Veterinary product

CLASS: Estrogens/Oestrogens

CHEMICAL FORMULA: Mixture.

The formulation for this product is proprietary information. Only hazardous ingredients in concentrations of 1% or greater and/or carcinogenic ingredients in concentrations of 0.1% or greater are listed in the Chemical Composition table. Active ingredients in any concentration are listed. For additional information about carcinogenic ingredients see Section 2.

CHEMICAL COMPOSITION

INGREDIENT	CAS NUMBER	PERCENT
Magnesium Stearate	557-04-0	< 1
Starch	9005-25-8	< 15
Amylopectin	9037-22-3	< 5
Estriol	50-27-1	1

ADDITIONAL INFORMATION: This MSDS is written to provide health and safety information for individuals who will be handling the unpackackged raw bulk tablets during research, manufacturing, and distribution. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate MSDS for each ingredient. Pet owners and veterinary personnel should refer to the package insert or product label for handling guidance.

SECTION 4. FIRST AID MEASURES

INHALATION: Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a physician.

SKIN CONTACT: In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a physician.

EYE CONTACT: In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a physician.

INGESTION: Rinse mouth and drink a glass of water. Do not induce vomiting unless under the direction of a qualified medical professional or Poison Control Center. If symptoms persist, consult a physician.

SECTION 5. FIRE FIGHTING MEASURES

FLAMMABILITY DATA:

Flash Point: Not determined (liquids) or not applicable (solids).

EXPLOSION HAZARDS:
Under normal conditions of use, this material does not present a significant fire or explosion hazard. However, like most organic compounds, this material may present a dust deflagration hazard if sufficient quantities are suspended in air. This hazard may exist where sufficient quantities of finely divided material are (or may become) suspended in air during typical process operations. An assessment of each operation should be conducted and suitable deflagration prevention and protection techniques employed. The sensitivity of this material to ignition by electrostatic discharges has not been determined. In the absence of testing data, all conductive plant items and operations personnel handling this material should be suitably grounded.

SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing and self-contained breathing apparatus (SCBA).

SUITABLE EXTINGUISHING MEDIA:
Carbon dioxide (CO2), extinguishing powder or water spray.

See Section 9 for Physical and Chemical Properties.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Wear appropriate personal protective equipment as specified in Section 8. Keep personnel away from the clean-up area.

SPILL RESPONSE / CLEANUP:
All spills should be handled according to site requirements and based on precautions cited in the MSDS. In the case of liquids, use proper absorbent materials. For laboratories and small-scale operations, incidental spills within a hood or enclosure should be cleaned by using a HEPA filtered vacuum or wet cleaning methods as appropriate. For large dry or liquid spills or those spills outside enclosure or hood, appropriate emergency response personnel should be notified. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required.

See Sections 9 and 10 for additional physical, chemical, and hazard information.

SECTION 7. HANDLING AND STORAGE

HANDLING:
Avoid dust generation. Keep containers adequately sealed during material transfer, transport, or when not in use. Wash face, hands, and any exposed skin after handling. Do not eat, drink, or smoke when using this substance or mixture.

Appropriate handling of this material is dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. See Section 8 (Exposure Controls) for additional guidance.

STORAGE:
Keep in closed tight containers. Store at room temperature (ambient conditions). Do not store at temperatures above 30 deg C (86 deg F). Avoid moisture.

See Section 8 for exposure controls and additional safe handling information.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following guidance applies to the handling of the active ingredient(s) in this formulation.

OCCUPATIONAL EXPOSURE BAND (OEB):
OEB 5: <1 mcg/m^3. Materials in an OEB 5 category are considered extreme health hazards. The OEB is a range of airborne concentrations expressed as an 8-hour Time Weighted Average (8-hr. TWA) and is intended to be used with Industrial Hygiene Risk Assessment to assist with industrial hygiene sampling and selection of proper controls for worker protection. Consult your site safety and industrial hygiene staff for guidance on handling and control strategies.

OEB/OEL NOTATION(S):
This material has a notation of "S" for its ability to cause systemic toxicity through skin absorption.

INTERNAL OCCUPATIONAL EXPOSURE LIMIT (8-hr TWA):
0.5 mcg/m^3

Wipe Limit:
5 ug/100 cm2

EXPOSURE CONTROLS
The health hazard risks of handling this material are dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. Exposure controls for normal operating or routine procedures follow a tiered strategy. Engineering controls are the preferred means of long-term or permanent exposure control. If engineering controls are not feasible, appropriate use of personal protective equipment (PPE) may be considered as alternative control measures. Exposure controls for non-routine operations must be evaluated and addressed as part of the site-specific risk assessment.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

Respiratory Protection:	Respiratory protective equipment (RPE) may be required for certain laboratory and large-scale manufacturing tasks if potential airborne breathing zone concentrations of substances exceed the relevant exposure limit(s). Workplace risk assessment should be completed before specifying and implementing RPE usage. Potential exposure points and pathways, task duration and frequency, potential employee contact with the substance, and the ability of the substance to be rendered airborne during specific tasks should be evaluated. Initial and ongoing strategies of quantitative exposure measurement should be obtained as required by the workplace risk assessment. All RPE must conform to local and regional specifications for efficacy and performance. Consult your site or corporate health and safety professional for additional guidance.
Skin Protection:	Gloves that provide an appropriate barrier to the skin are recommended if there is potential for contact with this material. Consult your site safety staff for guidance.
Eye Protection:	Safety glasses with side shields. Use of goggles or full face protection may be required based on hazard, potential for contact, or level of exposure. Consult your site safety staff for guidance.
Body Protection:	In small-scale or laboratory operations, lab coats or equivalent protection is required. Disposable Tyvek or other dust impermeable suit should be considered based on procedure or level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance. In large-scale or manufacturing operations, disposable Tyvek or other dust impermeable suit is recommended and based on level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance.

EXPOSURE LIMIT VALUES

INGREDIENT	CAS NUMBER	ACGIH TLV (TWA)	OSHA PEL (TWA)
Magnesium Stearate	557-04-0	10 mg/m^3	
Starch	9005-25-8	10 mg/m^3	15 mg/m^3

See Occupational Exposure Guideline (OEG) listed above.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Tablets, Blister pack

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	White
ODOR:	Odorless
pH:	6.0
SPECIFIC GRAVITY:	0.965 g/cm3
SOLUBILITY:	
Water:	Practically insoluble
Acetone:	Soluble
Chloroform:	Soluble
Other:	Vegetable Oils: Soluble Dioxane: Soluble Ether: Soluble Alcohol: Slightly soluble
PARTITION COEFFICIENT (log Pow):	2.81

See Section 5 for flammability/explosivity information.

SECTION 10. STABILITY AND REACTIVITY

STABILITY/ REACTIVITY:
Stable under normal conditions.

INCOMPATIBLE MATERIALS / CONDITIONS TO AVOID:
Oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS / REACTIONS:
Carbon monoxide (CO). Carbon dioxide (CO2).

SECTION 11. TOXICOLOGICAL INFORMATION

The information presented below is for the active ingredient(s) in this product.

ACUTE TOXICITY DATA

ORAL:
Estriol: Oral LD50: >2000 mg/kg (rats)

REPEAT DOSE TOXICITY DATA

SUBCHRONIC / CHRONIC TOXICITY:
Estriol: Hamsters were given subcutaneous implants of 20 mg pellets of estriol, reimplanted every 150 days to ensure constant absorption, for 318-601 days. After latent periods of 396-593 days, 6/11 animals developed tumors in one or both kidneys. Oral dosing of dogs with 80 mg/day of estriol succinate for 1 year produced testicular atrophy, diminished penis size in males and enlarged vulvas with purvulent discharge and slightly enlarged nipples in females. Oral dosing of dogs with 2 - 10 mg/day of estriol for 13 - 26 weeks produced dose dependent estrogenic effects on reproductive organs.

REPRODUCTIVE / DEVELOPMENTAL TOXICITY:
Estriol: Administration of 0.1 umol estriol to Wistar rats from days 16 to 19 of gestation induced partial feminization of male fetuses.

MUTAGENICITY / GENOTOXICITY:
Estriol: Negative in a micronucleus test in rats. Not mutagenic in Salmonella/microsome mutagenicity test.

CARCINOGENICITY:
Estriol: Female rats, 50-55 days received 5 mg estriol; 48 h later, all animals received 20 mg DMBA by oral gavage. The implants were removed from 15 animals after 14 days. At the termination of the experiment at 180 days, the incidence of mammary tumors was 60% after two weeks of estriol treatment and 20% with continuous estriol treatment. Groups virgin Sprague Dawley rats, 40 to 50 days of age, were irradiated. Crystalline sodium chloride pellets containing estriol (638 +175 ug per month) were implanted subcutaneously into the anterior dorsal area each month of life. Control rats were irradiated without estriol treatment. Estriol treatment began one to three days before irradiation or 5, 13 or 15 days after irradiation. Of 142 irradiated controls, 93 developed mammary carcinomas; two thirds of the tumors appeared more than 300 days after irradiation. When estriol administration was begun one to three days before or five days after irradiation, no significant reduction in mammary carcinoma incidence (29/54 controls versus 50/113 estriol treated) was observed.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA

This product has not been tested for ecotoxicity.

ENVIRONMENTAL DATA

Biodegradation Results:	Readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

MATERIAL WASTE:
Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations. Incineration is the preferred method of disposal, when appropriate. Operations that involve the crushing or shredding of waste materials or returned goods must be handled to meet the recommended exposure limit(s).

PACKAGING AND CONTAINERS:
Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

SECTION 14. TRANSPORT INFORMATION

This material is not subject to the transportation regulations of DOT, IATA, IMO, and the ADR.

SECTION 15. REGULATORY INFORMATION

TSCA LISTING

INGREDIENT	TSCA
Magnesium Stearate	X
Starch	X
Amylopectin	X

This material or product is not subject to TSCA requirements.

U.S. STATE REGULATIONS

INGREDIENT	California Proposition 65	CARTK	NJRTK	CTRTK	MARTK
Starch					X

INGREDIENT	PARTK	MNRTK	MIRTK	RIRTK
Magnesium Stearate		X		
Starch	X	X		X

Check state requirements for ingredient listing.

SECTION 16. OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequence of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

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MSDS CREATION DATE:
18-May-2012

SECTIONS CHANGED (US SUBFORMAT):
New MSDS
SIGNIFICANT CHANGES (US SUBFORMAT):
Hazard classification, OEL, Wipe Limit