MATERIAL SAFETY DATA SHEET
TYLAN 250 PREMIX

AF0250

Revision 3.6,22 November 2006

STATEMENT OF HAZARDOUS NATURE:
"Hazardous according to criteria of Worksafe Australia"
Harmful; R42/43 May cause sensitisation by inhalation and skin contact.
Irritant; R36 Irritating to eyes.

Company Name and Address:
Elanco Animal Health
A Division of Eli Lilly Australia Pty Ltd
A.B.N. 39 000 233 992
112 Wharf Road, West Ryde, N.S.W. 2114, Australia

Contact Numbers:
Tel: (02) 9878 7777
Fax: (02) 9878 7720

Emergency Telephone Numbers:
Elanco Animal Health:
1800 226 324 (Toll free)
OR
Poisons Information Centre:
131126 (Australia-wide)

24 hour emergency contact number, CHEMWATCH **1800 039 008** (spills and accidents)

Section 1 - Identification

Product Name: ElancoAF0250 Tylan 250 Tylosin Phosphate Premix

Other Names: Tylosin

Manufacturer's Product Code: AF0250

UN Number: None allocated

Dangerous Goods Class/Subsidiary Risk: None allocated

Hazchem Code: None allocated

Poisons Schedule Number: S4

Pack Size and Container Type: 25 kg printed woven polypropylene bag with internal polyethylene liner

Use:

Major Recommended Uses: For use as an aid in stimulating growth and improving feed efficiency in pigs and as an aid in controlling enteric diseases caused by organisms susceptible to tylosin in pigs. For the treatment and prevention of ileitis in pigs. For reduction in the incidence of liver abscess in cattle.

Major Recommended Method(s) of Application: Mixed in feed

Section 2 - Composition / Information on Ingredients

Ingredient	CAS	Concentration %
Tylosin Phosphate	1405-53-4	25
Diluent	NA	75

Diluent may include rice hulls, corn grits, or similar.

Contains no hazardous components (one percent or greater) or carcinogens (one-tenth percent or greater) not listed above.

Exposure Guidelines: Tylosin phosphate - LEG <100 micrograms/m3 TWA for 12 hours. Grain dust - PEL 10 mg/m3 TWA. TLV 4 mg/m3 TWA for 8 or 12 hours (total). Lilly preferred exposure limit is TLV.

Section 3 - Hazards Identification

Appearance: Pale greyish brown to brown granules
Physical State: Solid
Odor: Odorless
Emergency Overview

Primary Physical and Health Hazards: Irritant (eyes). Severe Allergen.

Caution Statement: Tylan 250 Premix may be irritating to the eyes, and is classified as a severe allergen because repeated unprotected exposures are likely to cause allergic reactions.

Routes of Entry: Inhalation and skin contact.

Potential Signs and Symptoms of Occupational Exposure: Allergic reactions to tylosin in a manufacturing setting have been reported. Allergy symptoms may include skin rash, watery eyes, shortness of breath, nasal congestion, coughing, and wheezing. Based on animal data, may be irritating to the eyes.
Diluent - Prolonged exposure to high concentrations of grain dust may cause irritation of the respiratory tract and mucous membranes.

Medical Conditions Aggravated by Exposure: Hypersensitivity to tylosin.

Carcinogenicity: Tylosin base - Not listed by IARC, NTP, ACGIH, or OSHA. Not considered carcinogenic in animal studies conducted by Lilly Research Laboratories.

Section 4 - First Aid Measures

SPECIFIC FIRST AID INSTRUCTIONS AS PER AUSTRALIAN REGISTERED LABEL[1]
If poisoning occurs, contact a doctor or Poisons Information Centre. Phone 13 1126.

ADDITIONAL INFORMATION PROVIDED BY MANUFACTURER:
Eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See an ophthalmologist (eye doctor) or other physician immediately.

Skin: Remove contaminated clothing and clean before reuse. Wash all exposed areas of skin with plenty of soap and water. Get medical attention if irritation develops.

Inhalation: Move individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, provide artificial respiration assistance (mouth-to-mouth) and call a physician immediately.

Ingestion: Do not induce vomiting. Call a physician or Poisons Information Centre. If available, administer activated charcoal (6-8 heaping teaspoons) with two to three glasses of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

Section 5 - Fire Fighting Measures

Flash Point: Not applicable.
UEL: No applicable information found.
LEL: No applicable information found.

Extinguishing Media: Use water, carbon dioxide, dry chemical, foam, or Halon.

Unusual Fire and Explosion Hazards: As a finely divided material, may form dust mixtures in air which could explode if subjected to an ignition source.

Hazardous Combustion Products: May emit toxic fumes when exposed to heat or fire.

Section 6 - Accidental Release Measures

Spills: Contain dry material by lightly misting with water, followed by sweeping up or vacuuming. Vacuuming may disperse dust if appropriate dust collection filter is not part of the vacuum. Be aware of potential for dust explosion when using electrical equipment. Large spills due to traffic accidents, etc., should be reported immediately to Elanco Animal

[1] Handbook of First Aid Instructions and Safety Directions for Agricultural and Veterinary Chemicals (including Pesticides). Therapeutic Goods Administration

Health for assistance. Prevent spilled material from flowing onto adjacent land or into streams, ponds or lakes. Wear protective equipment, including eye protection, to avoid exposure (see Section 8 for specific handling precautions).

Section 7 - Handling and Storage

Storage: Store below 30°C (Room Temperature) in a dry place.

Section 8 - Exposure Controls / Personal Protection

See Section 2 for Exposure Guideline information.

SPECIFIC SAFETY INSTRUCTIONS AS PER AUSTRALIAN REGISTERED LABEL[2]:
Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. Repeated exposure may cause allergic disorders. Do not inhale dust. When opening the container and mixing into premixes wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves and disposable dust mask. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and contaminated clothing.

ADDITIONAL INFORMATION PROVIDED BY MANUFACTURER:
When mixing and handling, use protective clothing, impervious gloves, and dust respirator. Operators should wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse with plenty of water.

Respiratory Protection: Use an approved respirator.

Eye Protection: Chemical goggles and/or face shield.

Ventilation: Laboratory fume hood or local exhaust ventilation.

Other Protective Equipment: In a manufacturing setting, wear chemical-resistant gloves and body covering to minimize skin contact. If handled in a ventilated enclosure, as in a laboratory setting, respirator and goggles or face shield may not be required. Safety glasses are always required.

Other Handling Precautions: In production settings, airline-supplied, hood-type respirators are preferred. Shower and change clothing if skin contact occurs.
Under normal use and handling conditions, wear goggles to protect eyes and wear impermeable gloves and protective equipment to avoid direct contact with skin. Wash thoroughly with soap and water after handling.

Section 9 - Physical and Chemical Properties

Boiling Point: Not applicable.

[2] Handbook of First Aid Instructions and Safety Directions for Agricultural and Veterinary Chemicals (including Pesticides). Therapeutic Goods Administration

Melting Point: Not applicable.
Density: 30-35 lbs/cu ft.
pH: 5-6 (Aqueous 50/50).
Evaporation Rate: No applicable information found.
Water Solubility: Insoluble.
Vapor Density: No applicable information found.
Vapor Pressure: No applicable information found.

Section 10 - Stability and Reactivity

Stability: Stable at normal temperatures and pressures.

Incompatibility: May react with strong oxidizing agents (e.g., peroxides, permanganates, nitric acid, etc.).

Hazardous Decomposition: May emit toxic fumes when heated to decomposition.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

Animal Toxicity Data Single Exposure
No data available for mixture or formulation. Data for ingredient(s) or related material(s) are presented.

Oral: 27% Tylosin phosphate mixture - Rat, 500 mg/kg, no deaths or toxicity.

Skin: 27% Tylosin phosphate mixture - Rabbit, 2000 mg/kg, no deaths or toxicity.

Inhalation: Tylosin base - Rat, 2060 mg/m3 for 1 hour, no deaths or toxicity.

Skin Contact: 27% Tylosin phosphate mixture - Rabbit, nonirritant.

Eye Contact: 27% Tylosin phosphate mixture - Rabbit, irritant.

Animal Toxicity Data Repeat Exposure
No data available for mixture or formulation. Data for ingredient(s) or related material(s) are presented.

Target Organ Effects: Tylosin base - No effects identified in animal studies.

Other Effects: Tylosin base - Salivation, diarrhea, and vomiting after repeated large oral doses.

Reproduction: Tylosin base - No effects identified in animal studies.

Sensitization: Tylosin base - Guinea pig, positive contact sensitizer.

Mutagenicity: Tylosin base - Mutagenic in one mammalian test system. Not mutagenic in bacterial cell tests and other mammalian cell tests. Unlikely to pose a genotoxic risk to man.

Section 12 - Ecological Information

No environmental data for the mixture or formulation. The environmental data for ingredient(s) or related material(s) are presented.

Ecotoxicity Data: Tylosin base
Rainbow trout 96-hour median lethal concentration: > 300 mg/L
Bluegill 96-hour median lethal concentration: > 300 mg/L
Daphnia magna 48-hour median effective concentration: > 300 mg/L
Bobwhite 14-day oral median lethal concentration: > 2000 mg/kg
Bobwhite 5-day dietary median lethal concentration: > 5000 ppm
Mallard 5-day dietary median lethal concentration: > 5000 ppm
Earthworm 28-day median lethal concentration: > 102.6 mg/kg

Environmental Fate: Tylosin base
Log Kow: 1.7
Water solubility (g/L): 5
Light absorption in ethanol (nm): 282
Soil degradation half-life (days): 62 for tylosin factor A, 37 for tylosin factor D
Soil leaching: none measured

Environmental Summary: Tylosin base - Practically nontoxic to fish, birds, earthworms, and aquatic invertebrates. No volatility expected. Not expected to bioconcentrate in aquatic organisms. Low mobility in soil. Not persistent in the environment due to degradation and possible photolysis.

Lilly Aquatic Exposure Guideline (LAEG): Tylosin base
LAEG for Drinking Water: 36 micrograms/L
LAEG for Chronic Exposure of Aquatic Organisms: 2500 micrograms/L
LAEG for Acute Exposure of Aquatic Organisms: 5000 micrograms/L

Section 13 - Disposal Considerations

Disposal of bags: Shake and empty contents into medicated feed. Do not dispose of undiluted chemicals on site. Puncture or shred and bury empty bags in a local authority landfill. If not available bury the bag below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty bags and product should not be burnt.

Section 14 - Transport Information

No special transport requirements necessary.

Section 15 - Other Information

Sections revised: Header and Footer: Removed automatic print date from header. Pagination changed to page number only. Added CHEMWATCH contact details.. Section 15: Deleted contact point details.

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. THIS MATERIAL SAFETY DATA SHEET SHALL NOT BE DEEMED TO CREATE ANY WARRANTY OF ANY KIND (INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

GLOSSARY
(Abbreviations Used in Material Safety Data Sheets)

ACGIH = American Conference of Governmental Industrial Hygienists
AIHA = American Industrial Hygiene Association
BEI = Biological Exposure Index
CAS Number = Chemical Abstract Service Registry Number
CERCLA = Comprehensive Environmental Response Compensation and Liability Act (of 1980)
CHEMTREC = Chemical Transportation Emergency Center
DOT = Department of Transportation
EC = European Community
EINECS = European Inventory of Existing Chemical Substances
ELINCS = European List of New Chemical Substances
EPA = Environmental Protection Agency
HEPA = High Efficiency Particulate Air (Filter)
IARC = International Agency for Research on Cancer
ICAO/IATA = International Civil Aviation Organization/International Air Transport Association
IEG = Lilly Interim Exposure Guideline
IMO = International Maritime Organization
LEG = Lilly Exposure Guideline
LEL = Lower Explosive Limit
MSDS = Material Safety Data Sheet
NA = Not Applicable, except in Section 14 where NA = North America
NADA = New Animal Drug Application
NAIF = No Applicable Information Found
NCI = National Cancer Institute
NIOSH = National Institute for Occupational Safety and Health
NOS = Not Otherwise Specified
NTP = National Toxicology Program
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limit (OSHA)
RCRA = Resource Conservation and Recovery Act
RQ = Reportable Quantity

RTECS = Registry of Toxic Effects of Chemical Substances
SARA = Superfund Amendments and Reauthorization Act
STEG = Lilly Short Term Exposure Guideline
STEL = Short Term Exposure Limit
TLV = Threshold Limit Value (ACGIH)
TPQ = Threshold Planning Quantity
TSCA = Toxic Substances Control Act
TWA = Time Weighted Average/8 Hours Unless Otherwise Noted
UEL = Upper Explosive Limit
UN = United Nations
WEEL = Workplace Environmental Exposure Level (AIHA)