



# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>Tylan Injection</b>
<b>Other means of identification</b>	
<b>Item Code</b>	AF1400, AF1401, AF7200, AF7202, AH0137, AH0205, AH0206
<b>Synonyms</b>	Tylosin * Tylosin Base * 027892 Formulation * Tylan 200 Injection * Tylan 50 Injection * Tylan
<b>Recommended use</b>	Veterinary Pharmaceutical
<b>Recommended restrictions</b>	None known.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer</b>	
<b>Company Name</b>	Elanco Animal Health 2500 Innovation Way Greenfield, IN 46140 US
<b>Phone:</b>	1-877-Elanco1 (1-877-352-6261)
<b>Email:</b>	lilly_msds@lilly.com
<b>Emergency Telephone Numbers:</b>	Elanco Product Technical Support / Human or Animal Exposure Reporting: 1-888-545-5973 Transportation Emergency Telephone: CHEMTREC: 1-800-424-9300 (Outside U.S. 1-703-527-3887)

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Danger
<b>Hazard statement</b>	
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Precautionary statement</b>	
<b>Prevention</b>	
P261	Avoid breathing mist or vapor.
P280	Wear protective gloves/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.
<b>Response</b>	
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
<b>Storage</b>	Not available.
<b>Disposal</b>	
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	Not applicable.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Tylosin Base		1401-69-0	5 - 20
Benzyl Alcohol		100-51-6	2 - 5

**Composition comments** Remaining components of this product are non-hazardous and/or are present at concentrations below reportable levels.

### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Oxygen or artificial respiration if needed. Call a physician or poison control center immediately.
<b>Skin contact</b>	Wash off with soap and plenty of water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	If conscious, give the victim plenty of water to drink. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Allergic reactions in a manufacturing setting have been reported. Allergy symptoms may include skin rash, watery eyes, shortness of breath, nasal congestion, coughing, and wheezing. Accidental injection may cause pain and swelling at the site accompanied by anxiety.
<b>Indication of immediate medical attention and special treatment needed</b>	Accidental Injection: For accidental injection no specific treatment is needed other than symptomatic. Treat wound if necessary and consider need for tetanus immunization.
<b>General information</b>	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water. Carbon dioxide (CO <sub>2</sub> ). Dry chemical.
<b>Unsuitable extinguishing media</b>	Not available.
<b>Specific hazards arising from the chemical</b>	Fire or excessive heat may produce hazardous decomposition products.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained breathing apparatus and protective clothing.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Avoid contact with skin, eyes and clothing. Wear suitable protective clothing, gloves and eye/face protection. See Section 8 of the SDS for Personal Protective Equipment.
<b>Methods and materials for containment and cleaning up</b>	Small Spillages: Use absorbent/adsorbent material to solidify liquids. Clean up promptly by sweeping or vacuum.  Large Spillages: Prevent further migration into the environment. Use absorbent/adsorbent material to solidify liquids. Collect in a non-combustible container for prompt disposal. Local authorities should be advised if significant spillages cannot be contained. Large spills due to traffic accidents, etc., should be reported immediately to CHEMTREC and Elanco Animal Health for assistance.
<b>Environmental precautions</b>	Prevent spilled material from flowing onto adjacent land or into streams, ponds, or lakes. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Keep away from heat and sources of ignition. Avoid release to the environment.

Do not mix with other injectable solutions as this may cause precipitation of the active ingredients. Do not administer to horses or other equines. Injection of tylosin in equines has been fatal.

**Conditions for safe storage, including any incompatibilities** Store in a cool place below 72F (22C). Keep the container tightly closed and dry. Store away from incompatible materials. Avoid contact with oxidizing agents. Do not store in open or unlabelled containers.

## 8. Exposure controls/personal protection

**Occupational exposure limits** No exposure limits noted for ingredient(s).

**Exposure guidelines** Lilly Exposure Guideline (LEG): <100 mcg/m<sup>3</sup> 12 hour TWA (Tylosin Base)

### Occupational exposure limits

#### US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Benzyl Alcohol (CAS 100-51-6)	TWA	44.2 mg/m <sup>3</sup> 10 ppm

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Use appropriate control measures such as fume hood, ventilated enclosure, local exhaust ventilation, or down-draft booth.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear goggles/face shield.

#### Skin protection

**Hand protection** Chemical-resistant gloves and impermeable body covering to minimize skin contact.

**Other** Chemical-resistant gloves and impermeable body covering to minimize skin contact.

**Respiratory protection** Use an approved respirator. Select appropriate respirator for physical characteristics of material. Select respirator with appropriate protection factor.

**Thermal hazards** Not available.

**General hygiene considerations** Use good industrial hygiene practices in handling this material.

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.

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.

## 9. Physical and chemical properties

**Appearance** Viscous. Solution.

**Physical state** Liquid.

**Form** Liquid.

**Color** Yellow.

**Odor** Musty.

**Odor threshold** No data available.

**pH** 8.5 - 10

**Melting point/freezing point** No data available.

**Initial boiling point and boiling range** No data available.

**Flash point** No data available.

**Evaporation rate** No data available.

**Flammability (solid, gas)** Not applicable.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** No data available.

**Flammability limit - upper (%)** No data available.

**Explosive limit - lower (%)** No data available.

**Explosive limit - upper (%)** No data available.

**Vapor pressure** No data available.

**Vapor density** No data available.

**Relative density** No data available.

**Solubility(ies)**

**Solubility (water)** Soluble.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** 773.6 °F (412 °C)

**Decomposition temperature** No data available.

**Viscosity** No data available.

**Other information**

**Density** No data available.

**Explosive properties** No data available.

**Oxidizing properties** No data available.

**Percent volatile** No data available.

**Specific gravity** 1.09

**VOC (Weight %)** No data available.

**9.2. Other information**

**Minimum Ignition Temperature** No data available.

**10. Stability and reactivity**

**Reactivity** Not available.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

**Conditions to avoid** None known.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** Fire or excessive heat may produce hazardous decomposition products.

**11. Toxicological information**

**Information on toxicological effects**

**Acute toxicity** Based on available data, the classification criteria are not met.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Tylan Injection (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD	Rabbit	> 2140 mg/kg 20% Tylosin Base Mixture. No deaths or toxicity.
<i>Inhalation</i>		
LC50	Rat	> 1050 mg/m <sup>3</sup> , 1 hr 20% Tylosin Base Mixture. No deaths.

Product	Species	Test Results
<i>Oral</i> LD	Rat	> 535 mg/kg 20% Tylosin Base Mixture. No deaths or toxicity.
<b>Skin corrosion/irritation</b>	Slightly irritating to the skin of rabbits. (20% formulation) (Tylosin Base) Remaining ingredients: No irritation.	
<b>Serious eye damage/eye irritation</b>	Rabbit: Slight irritation. (20% formulation) Based on available data, the classification criteria are not met.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Allergic reactions in a manufacturing setting have been reported.. (Tylosin Base)	
<b>Skin sensitization</b>	Guinea pig: Causes sensitization. (Tylosin Base)	
<b>Germ cell mutagenicity</b>	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. (Tylosin Base) Based on available data, the classification criteria are not met.	
<b>Carcinogenicity</b>	Animal testing did not show any carcinogenic effects. (Tylosin Base) (Benzyl Alcohol) Based on available data, the classification criteria are not met.	
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		
Not listed.		
<b>Reproductive toxicity</b>	No effects identified in animal studies. (Tylosin Base) Developmental effects have been reported at doses toxic to the mother. (Benzyl Alcohol) Based on available data, the classification criteria are not met.	
<b>Specific target organ toxicity - single exposure</b>	Due to lack of data the classification is not possible.	
<b>Specific target organ toxicity - repeated exposure</b>	No effects identified in animal studies. (Tylosin Base)	
<b>Aspiration hazard</b>	No aspiration toxicity classification.	
<b>Further information</b>	Salivation, diarrhea, and vomiting after repeated large oral doses. (Tylosin Base)	

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Benzyl Alcohol (CAS 100-51-6)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 230 mg/l, 48 hr
Fish	LC50	Fathead minnow (Pimephales promelas) 460 mg/l, 96 hours
Tylosin Base (CAS 1401-69-0)		
<i>Acute</i>		
	EC50	140 mg/kg (Oats, seedling) 53 mg/kg (Soybean, seedling) 43 mg/kg (Tomato, seedling)
	LC50	> 102.6 mg/kg, 14 days (Eisenia fetida, earthworm)
Other	EC50	Pseudokirchnerella subcapitata 0.22 mg/l, 72 hours (green algae) (average specific growth rate)
	LC50	Duck > 5000 mg/kg, 5 days (Anas platyrhynchos, Mallard) (Dietary)
		Quail > 5000 mg/kg, 5 days (Bobwhite) (Dietary)
		> 2000 mg/kg, 14 days (Bobwhite)

Components	Species	Test Results
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Daphnia magna > 300 mg/l, 48 hours (Water flea)
Fish	LC50	Bluegill (Lepomis macrochirus) > 300 mg/l, 96 hours
		Rainbow Trout > 300 mg/l, 96 hours (Oncorhynchus mykiss)

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Not available.

**Partition coefficient n-octanol / water (log Kow)**

Benzyl Alcohol	1.1
Tylosin Base	17 (pH 7 and 9) 5 (pH 5)

**Mobility in soil** No data available for this product.

Soil degradation half-life (100 ppm): 62 days (tylosin factor A); 37 days (tylosin factor D)  
Soil degradation half-life (1 mg/kg; 4 soils): 50.3 to 105 days (Tylosin Base)  
Leaching in soil column: none (Tylosin Base)

**Other adverse effects** Not available.

**Ecotoxicological Properties**

**Drinking Water**

Components	Test Results
Tylosin Base	36 µg/l, (Lilly Aquatic Exposure Guideline)

**Chronic Exposure of Aquatic Organisms**

Components	Test Results
Tylosin Base	99 µg/l, (Lilly Aquatic Exposure Guideline)

**Acute Exposure of Aquatic Organisms**

Components	Test Results
Tylosin Base	220 µg/l, (Lilly Aquatic Exposure Guideline)

**13. Disposal considerations**

**Disposal instructions** Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.

**14. Transport information**

**General information** Effective January 1, 2015 by Special Provision, UN3077 and UN3082 when packaged in inner packages of 5L / 5 KG or less are not subject to the dangerous goods regulations.

**DOT**

Not regulated as dangerous goods.

**IATA**

<b>UN number</b>	UN3082
<b>UN proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s. (Tylosin Base)
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	Yes
<b>ERG Code</b>	9L
<b>Special precautions for user</b>	Not available.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed.
<b>Cargo aircraft only</b>	Allowed.

## IMDG

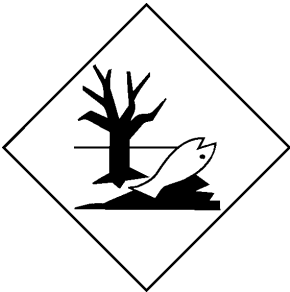
<b>UN number</b>	UN3082
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tylosin Base)
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>EmS</b>	F-A, S-F
<b>Special precautions for user</b>	Not available.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.

## IATA; IMDG



## Marine pollutant



## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

### **CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

### **SARA 304 Emergency release notification**

Not regulated.

### **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

### **Superfund Amendments and Reauthorization Act of 1986 (SARA)**

#### **Hazard categories**

Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

#### **SARA 313 (TRI reporting)**

Not regulated.

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

### Safe Drinking Water Act (SDWA)

Not regulated.

## US state regulations

### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

### US. Massachusetts RTK - Substance List

Benzyl Alcohol (CAS 100-51-6)

### US. New Jersey Worker and Community Right-to-Know Act

Not listed.

### US. Pennsylvania Worker and Community Right-to-Know Law

Benzyl Alcohol (CAS 100-51-6)

### US. Rhode Island RTK

Not regulated.

### US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 08-22-2014

**Revision date** 10-01-2014

**Version #** 02

**Lilly Lab Code** Health: 1  
Fire: 1  
Reactivity: 0  
Special 1: A

**List of abbreviations** LEG: Lilly Exposure Guideline  
TWA: Time Weighted Average

**Disclaimer** 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 MERCHANT ABILITY 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.

For additional information contact:  
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00+1-800-428-4441

**Revision Information** Physical & Chemical Properties: Multiple Properties  
Toxicological Information: Toxicological Data  
Transport information: General information  
GHS: Classification