



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** Optaflexx 45 Type A

**Other means of identification**

**Item Code** AF0630, MS8280, MS8285

**Recommended use** Veterinary Pharmaceutical

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company Name** Elanco Animal Health  
2500 Innovation Way  
Greenfield, IN 46140  
US

**Phone:** 1-877-Elanco1 (1-877-352-6261)

**Email:** lilly\_msds@lilly.com

**Emergency Telephone Numbers:**

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

**Physical hazards** Not classified.

**Health hazards** Sensitization, respiratory Category 1  
Sensitization, skin Category 1

**OSHA defined hazards** Combustible dust

**Label elements**



**Signal word** Danger

**Hazard statement**

H317 May form combustible dust concentrations in air.  
H334 May cause an allergic skin reaction.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Precautionary statement**

**Prevention**

P261 Avoid breathing dust.  
P285 In case of inadequate ventilation wear respiratory protection.  
P280 Wear protective gloves/protective clothing.

**Response**

P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

**Storage** Not available.

**Disposal**

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)**

None known.

**Supplemental information**

None.

**3. Composition/information on ingredients****Mixtures**

Chemical name	Common name and synonyms	CAS number	%
Ractopamine Hydrochloride	4-(3-{[2-hydroxy-2-(4-hydroxyphenyl)ethyl]amino}butyl)phenol hydrochloride	90274-24-1	10
Excipient: Grain Dust		NA	89
Anti-Dusting Oil	MINERAL OIL	8012-95-1	1

**Composition comments**

The anti-dusting oil reduces potential exposure under normal handling conditions of use. Excipients may include: Corn cob grits.

**4. First-aid measures****Inhalation**

Move to fresh air. Oxygen or artificial respiration if needed. Call a physician or poison control center immediately.

**Skin contact**

Wash off immediately with soap and plenty of water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.

**Eye contact**

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.

**Ingestion**

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.

**Most important symptoms/effects, acute and delayed**

May cause allergic respiratory and skin reactions. Increased heart rate.

**Indication of immediate medical attention and special treatment needed**

Treat as for other beta adrenergic agonists.

**General information**

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**5. Fire-fighting measures****Suitable extinguishing media**

Water. Carbon dioxide (CO<sub>2</sub>). Dry chemical.

**Unsuitable extinguishing media**

Not available.

**Specific hazards arising from the chemical**

Fire or excessive heat may produce hazardous decomposition products. Dust may form explosive mixture with air.

**Special protective equipment and precautions for firefighters**

Wear self-contained breathing apparatus and protective clothing.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

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.

**Methods and materials for containment and cleaning up****Small Spillages:**

Do not sweep. Collect spill using a vacuum cleaner with a HEPA filter. Be aware of potential for dust explosion when using electrical equipment. If vacuum is not available, lightly mist/wet material and remove by mopping or wet wiping.

**Large Spillages:**

Prevent further migration into the environment. Remove sources of ignition. 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.

**Environmental precautions** 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. Minimize dust generation and accumulation. Keep away from heat and sources of ignition. Avoid release to the environment.

**Conditions for safe storage, including any incompatibilities** Keep container tightly closed. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Avoid contact with oxidizing agents. Avoid moisture. Do not store in open or unlabelled containers.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### Lilly (LEG)

#### Components

Components	Type	Value
Ractopamine Hydrochloride (CAS 90274-24-1)	STEG (15min)	240 ug/m3
	TWA (12hrs)	17 ug/m3

### Occupational exposure limits

#### ACGIH

#### Components

Components	Type	Value	Form
Excipient: Grain Dust (CAS NA)	TWA	4 mg/m3	(grain dust)

#### US. ACGIH Threshold Limit Values

#### Components

Components	Type	Value	Form
Anti-dusting oil (CAS 8012-95-1)	TWA	5 mg/m3	Inhalable fraction.

#### U.S. - OSHA

#### Components

Components	Type	Value	Form
Excipient: Grain Dust (CAS NA)	TWA	10 mg/m3	(grain dust)

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

#### Components

Components	Type	Value	Form
Anti-dusting oil (CAS 8012-95-1)	PEL	5 mg/m3	Mist.

#### US. NIOSH: Pocket Guide to Chemical Hazards

#### Components

Components	Type	Value	Form
Anti-dusting oil (CAS 8012-95-1)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

### 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.

When mixing and handling, use protective clothing, impervious gloves, and dust respirator (recommended). Operators should wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse with plenty of water.

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**

<b>Appearance</b>	Dry flowable granules.
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Tan
<b>Odor</b>	No data available.
<b>Odor threshold</b>	No data available.
<b>pH</b>	6 - 7 (50% aqueous solution)
<b>Melting point/freezing point</b>	No data available.
<b>Initial boiling point and boiling range</b>	No data available.
<b>Flash point</b>	No data available.
<b>Evaporation rate</b>	No data available.
<b>Flammability (solid, gas)</b>	No test data available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	No data available.
<b>Flammability limit - upper (%)</b>	No data available.
<b>Explosive limit - lower (%)</b>	No data available.
<b>Explosive limit - upper (%)</b>	No data available.
<b>Vapor pressure</b>	No data available.
<b>Vapor density</b>	No data available.
<b>Relative density</b>	No data available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	(Active ingredient - slightly soluble)
<b>Solubility (other)</b>	No data available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	No data available.
<b>Decomposition temperature</b>	No data available.
<b>Viscosity</b>	No data available.
<b>Other information</b>	
<b>Density</b>	No data available.
<b>Dust explosion properties</b>	
<b>Minimum ignition temperature (MIT) - dust layer</b>	419 °F (215 °C)
<b>Explosive properties</b>	No data available.

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

Product	Species	Test Results
Optaflexx 45 Type A (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD	Rabbit	> 5000 mg/kg No mortality.
<i>Oral</i>		
LD	Rat	> 2000 mg/kg No mortality. No toxicity.
Components	Species	Test Results

#### Ractopamine Hydrochloride (CAS 90274-24-1)

##### *Acute*

##### *Dermal*

LD

Rabbit

> 2000 mg/kg

##### *Inhalation*

LC50

Monkey

> 13.9 mg/m<sup>3</sup>, 15 min (Increased heart rate)

Rat

2801 mg/m<sup>3</sup>, 4 h

##### *Oral*

LD

Dog

> 50 ug/ kg (Increased heart rate)

LD50

Rat

411 mg/kg

#### **Skin corrosion/irritation**

Rabbit: No irritation (Ractopamine Hydrochloride)  
Based on available data, the classification criteria are not met.

#### **Serious eye damage/eye irritation**

Rabbit: Irritating. (Ractopamine Hydrochloride)  
Based on available data, the classification criteria are not met.

#### **Respiratory or skin sensitization**

##### **Respiratory sensitization**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Grain dust)

##### **Skin sensitization**

Guinea pig: Causes sensitization. (Ractopamine Hydrochloride)

#### **Germ cell mutagenicity**

Not mutagenic in a battery of tests using both bacterial and mammalian cell assays, with the exception of weak positive responses in the mouse lymphoma and human lymphocyte assays. Since two in vivo cytogenetic tests demonstrated no mutagenicity, and rodent carcinogenicity tests demonstrated no relevant carcinogenic effects, it can be concluded that ractopamine hydrochloride does not present a genotoxic hazard in man.  
Based on available data, the classification criteria are not met.

#### **Carcinogenicity**

Treatment of rats and mice in carcinogenicity studies by Lilly Research Laboratories did not result in increased incidence of any cancer (malignant tumors). The only tumors with increased incidence were benign smooth muscle tumors (leiomyomas). This finding is a rodent-specific, exaggerated pharmacologic effect of beta-adrenergic agonists. (Ractopamine Hydrochloride)  
Based on available data, the classification criteria are not met.

## IARC Monographs. Overall Evaluation of Carcinogenicity

Anti-Dusting Oil (CAS 8012-95-1)

3 Not classifiable as to carcinogenicity to humans.

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

Not listed.

<b>Reproductive toxicity</b>	In studies with rats, there were no effects on mating performance or fertility, but increased mortality, reduced growth, and structural abnormalities were reported in offspring at doses of 150 mg/kg/day which were maternally toxic. (Ractopamine Hydrochloride) Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity - single exposure</b>	No effects identified in animal studies. (Ractopamine Hydrochloride) Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity - repeated exposure</b>	Ingestion and inhalation of ractopamine hydrochloride produces effects consistent with its pharmacology as a partial beta adrenergic agonist. Principal effects in animals included cardiovascular effects characterized by increased heart rate, increased blood and pulse pressure, peripheral dilation of blood vessels, and increased cardiac output. Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	No aspiration toxicity classification.
<b>Chronic effects</b>	Ingestion and inhalation of ractopamine hydrochloride produces effects consistent with its pharmacology as a partial beta adrenergic agonist. Principal effects in animals included cardiovascular effects characterized by increased heart rate, increased blood and pulse pressure, peripheral dilation of blood vessels, and increased cardiac output.
<b>Further information</b>	On the basis of animal studies and the known pharmacology of ractopamine hydrochloride (a partial beta adrenergic agonist), anticipated effects from accidental exposure to ractopamine would principally include cardiovascular effects characterized by increased heart rate and cardiac output. Manufacturing personnel wearing appropriate protective clothing have not reported ill effects.

## 12. Ecological information

<b>Ecotoxicity</b>	Additional Ecological Information Ractopamine Hydrochloride Plant growth in soil no observed effect concentration: 1 mg/kg Soil adsorption coefficient (Kd): 14.5, 29.6, 36 (sandy loam, loam, clay loam) Organic carbon coefficient (Koc): 2090, 2698, 2007 (sandy loam, loam, clay loam) Water solubility (g/L): 51.9, 31.0, 41.2, (pH5, pH7, pH9) Photolysis half-life (days): 16.3, 10.5, 0.64, (pH5, pH7, pH9) Photolysis rate constant (1/day): 0.0425, 0.0657, 1.086 (pH5, pH7, pH9) Hydrolysis half-life (days): none, none, 19 (pH5, pH7, pH9) Hydrolysis rate constant (1/day): none, none, 0.0364 (pH5, pH7, pH9) UV light absorption in methyl alcohol (nm): 225.8 and 277.6 Soil degradation half-life (1/day): 1.1, 51 (1st phase, 2nd phase) Aerobic biodegradation (64 days): 7 - 8.9%, 70% (carbon dioxide, metabolites)
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Components	Species	Test Results
Ractopamine Hydrochloride (CAS 90274-24-1)		
<i>Acute</i>	EC50	1413 mg/l, 3 hr (Respiration inhibition of activated sludge)
	LC50	> 747 g/kg, 28 d (Eisenia fetida-earthworms)
Other	EC50	Selenastrum capricornutum (new name) Pseudokirchnerella subca > 101.2 mg/l, 72 hr
	LC50	Duck > 10 g/kg, 5 d (Mallard) (Dietary)
		Quail > 4990 mg/kg, 5 d (Bobwhite) (Dietary)
	LD50	Quail > 2000 mg/kg, 14 d (Bobwhite)
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Daphnia magna 34.5 mg/l, 48 hr
Fish	LC50	Bluegill (Lepomis macrochirus) 544 mg/l, 96 hr
		Rainbow Trout 693 mg/l, 96 hr

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

**Bioaccumulative potential** No data available on bioaccumulation.

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

Ractopamine Hydrochloride 0.009 (pH 7)  
0.24 (pH 5)  
1.24 (pH 9)

**Bioconcentration factor (BCF)**

Ractopamine Hydrochloride 0.13, (pH 7)

**Mobility in soil** Not available.

**Other adverse effects** Not available.

**Ecotoxicological Properties**

**Drinking Water**

**Components**

**Test Results**

Ractopamine Hydrochloride 1.8 µg/l, (Lilly Aquatic Exposure Guideline)

**Chronic Exposure of Aquatic Organisms**

**Components**

**Test Results**

Ractopamine Hydrochloride 240 µg/l, (Lilly Aquatic Exposure Guideline)

**Acute Exposure of Aquatic Organisms**

**Components**

**Test Results**

Ractopamine Hydrochloride 2156 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**

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**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 - Yes  
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

Anti-Dusting Oil (CAS 8012-95-1)

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

Anti-Dusting Oil (CAS 8012-95-1)

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

Anti-Dusting Oil (CAS 8012-95-1)

### US. Rhode Island RTK

Not regulated.

### US. California Proposition 65

Not Listed.

## 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** 10-28-2014

**Version #** 01

**Lilly Lab Code** Health: 2  
Fire: 1  
Reactivity: 1  
Special 1: A

**List of abbreviations** LEG: Lilly Exposure Guideline  
STEG: Short Term 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 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.

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

**Revision Information** Product and Company Identification: Synonyms  
Composition / Information on Ingredients: Ingredients  
Physical & Chemical Properties: Multiple Properties  
Toxicological Information: Toxicological Data  
Regulatory Information: Lilly Lab Codes  
GHS: Classification