

Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

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## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifier

#### OXIS MIXTURE FOR TURBUHALER

Details of the supplier of the safety data sheet : ASTRAZENECA PTY LTD      Emergency Telephone  
PO Box 131      +44 (0) 1235 239 670  
Alma Road, North Ryde  
NSW 2113  
AUSTRALIA  
+61 2 9978 3500  
  
SafetyDataSheets.AlderleyPark@astrazeneca.com

#### Alternative Names

Formoterol fumarate dihydrate 0.5-1% in lactose  
CAS No. : Not applicable

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : bronchodilator

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Specific target organ toxicity - single exposure (Inhalation) : Category 2 (Heart)

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Heart)

### GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H371 May cause damage to organs (Heart) if inhaled.  
H373 May cause damage to organs (Heart) through prolonged or repeated exposure if inhaled.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.

#### **Response:**

P309 + P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.  
P314 Get medical advice/ attention if you feel unwell.

# SAFETY DATA SHEET



Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

## Disposal:

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

## Other hazards which do not result in classification

May cause palpitation, trembling, headache and widening of the bronchii.  
May form explosible dust-air mixture if dispersed.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Formoterol fumarate dihydrate	43229-80-7	>= 1 - < 10

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## 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. May cause damage to organs if inhaled. May cause damage to organs through prolonged or repeated exposure if inhaled.
- Notes to physician : Symptomatic treatment and supportive therapy as indicated. For further detail consult the prescribing information.
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## SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : water spray, foam, dry powder or CO2.
- Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
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Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
 Date of first issue: 19.09.2017

Specific hazards during firefighting : If involved in a fire, it may burn and emit noxious and toxic fumes.

Special protective equipment for firefighters : A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure suitable personal protection during removal of spillages.  
 Avoid dispersal of dust in the air.

Environmental precautions : Prevent entry into drains.

Methods and materials for containment and cleaning up : Clear up spillages.  
 Transfer to a container for disposal.  
 Wash the spillage area clean with water and detergent.

## SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe dust.  
 Avoid contact with skin and eyes.  
 Minimize dust generation and accumulation.  
 The material may form explosible dust-air mixture if dispersed.  
 Dust clouds may be extremely sensitive to ignition by electrostatic discharge and other ignition sources. Ensure good earthing of equipment and personnel.

Conditions for safe storage : Keep container tightly closed.

Recommended storage temperature : < 30 °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
Formoterol fumarate dihydrate	43229-80-7	TWA	0.0002 mg/m <sup>3</sup>	COM; HYG

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

### Personal protective equipment

Respiratory protection : Use an air fed hood if the risk assessment does not support

# SAFETY DATA SHEET



Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

the selection of other protection.

Eye protection : Use safety glasses to protect against direct contact with the product 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 product if the risk assessment does not support the selection of other protection. Use impervious protective gloves to protect against direct contact with the product. If the product is dissolved or wetted use a glove material that is resistant to the solvent/liquid.

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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Colour : No data available

Odour : odourless

Odour Threshold : No data available

pH : No data available

Melting point/range : No data available

Initial boiling point and boiling range : Not applicable

Flash point : No data available

Evaporation rate : Not applicable

# SAFETY DATA SHEET



Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

Flammability (solid, gas) : No data available  
Upper explosion limit : No data available  
Lower explosion limit : No data available  
Vapour pressure : Not applicable  
Relative vapour density : Not applicable  
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 : No data available  
Decomposition temperature : No data available  
Viscosity  
    Viscosity, dynamic : Not applicable  
    Viscosity, kinematic : Not applicable  
Explosive properties : No data available  
Oxidizing properties : Not applicable

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## 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 : None known.  
Hazardous decomposition products : No hazardous decomposition products are known.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1.1 Acute toxicity

Not classified based on available information.

**Product:**

Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l  
Exposure time: 4 H  
Test atmosphere: dust/mist  
Method: Calculation method

**Components:**

**Formoterol fumarate dihydrate:**

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

Acute inhalation toxicity : LC50 (Rat): 1.35 mg/l  
Exposure time: 4 H

Acute dermal toxicity : Remarks: No information available.

**11.1.2 Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**Formoterol fumarate dihydrate:**

Remarks: No information available.

**11.1.3 Serious eye damage/eye irritation**

Not classified based on available information.

**Components:**

**Formoterol fumarate dihydrate:**

Remarks: No information available.

**11.1.4 Respiratory or skin sensitisation**

**Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:**

**Formoterol fumarate dihydrate:**

Remarks: No information available.

**11.1.5 Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**Formoterol fumarate dihydrate:**

Germ cell mutagenicity - Assessment : There is no evidence of genotoxic potential in in vitro and in vivo tests.

Version	Revision Date:	SDS Number:	Date of last issue: -
3.0	19.09.2017	13393	Date of first issue: 19.09.2017

---

#### 11.1.6 Carcinogenicity

Not classified based on available information.

##### Components:

##### **Formoterol fumarate dihydrate:**

Carcinogenicity - Assessment : The substance is not considered to be carcinogenic.

#### 11.1.7 Reproductive toxicity

Not classified based on available information.

##### Components:

##### **Formoterol fumarate dihydrate:**

Reproductive toxicity - Assessment : Some embryofetal development effects in rats and rabbits at high doses.

#### 11.1.8 STOT - single exposure

May cause damage to organs (Heart) if inhaled.

##### Components:

##### **Formoterol fumarate dihydrate:**

Exposure routes: inhalation (dust/mist/fume)

Target Organs: Heart

Assessment: Causes damage to organs.

Exposure routes: Oral

Target Organs: Heart

Assessment: Causes damage to organs.

Remarks: These effects are derived from studies in animals.

Dust, if inhaled even in small amounts, can cause violent palpitation, trembling, headache and widening of the bronchii.

Rare cases of hypersensitivity reactions have been reported.

#### 11.1.9 STOT - repeated exposure

May cause damage to organs (Heart) through prolonged or repeated exposure if inhaled.

##### Components:

##### **Formoterol fumarate dihydrate:**

Exposure routes: inhalation (dust/mist/fume)

Target Organs: Heart

Assessment: Causes damage to organs through prolonged or repeated exposure.

Exposure routes: Oral

Target Organs: Heart

Assessment: Causes damage to organs through prolonged or repeated exposure.

Remarks: Tachycardia and musculoskeletal and connective tissue disorders and muscle cramps have been reported.

Common side effects reported from patients include palpitations, headache and tremor.

Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

#### 11.1.10 Aspiration toxicity

Not classified based on available information.

##### Components:

##### **Formoterol fumarate dihydrate:**

No data available

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **Formoterol fumarate dihydrate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l  
Exposure time: 96 H  
Method: OECD Test Guideline 203

NOEC (Oncorhynchus mykiss (rainbow trout)): 120 mg/l  
Exposure time: 96 H  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 114 mg/l  
Exposure time: 48 H  
Method: OECD Test Guideline 202

NOEC (Daphnia magna (Water flea)): 55 mg/l  
Exposure time: 48 H  
Method: OECD Test Guideline 202

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 94 mg/l  
Exposure time: 72 H  
Method: OECD Test Guideline 201

### Persistence and degradability

#### Components:

##### **Formoterol fumarate dihydrate:**

Biodegradability : Remarks: Not rapidly degradable.

### Bioaccumulative potential

#### Components:

##### **Formoterol fumarate dihydrate:**

Bioaccumulation : Remarks: The substance has low potential for bioaccumulation.



# SAFETY DATA SHEET



Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

## Mobility in soil

### Components:

#### **Formoterol fumarate dihydrate:**

Mobility : Remarks: Water solubility  $\geq$  1 mg/l.

Distribution among environmental compartments : Remarks: No information available.

#### **Other adverse effects**

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : Disposal should be in accordance with local, state or national legislation.  
Waste, even small quantities, should never be poured down drains, sewers or water courses.  
Dispose of contents/ container to an approved incineration plant.

Contaminated packaging : Empty container will retain product residue. Observe all hazard precautions.

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## SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

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## SECTION 15. REGULATORY INFORMATION

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

In order to comply with legal duties it is necessary to consult local and national legislation.

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

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# SAFETY DATA SHEET



Version 3.0      Revision Date: 19.09.2017      SDS Number: 13393      Date of last issue: -  
Date of first issue: 19.09.2017

---

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

Formoterol fumarate dihydrate      43229-80-7

AICS : Not listed

ENCS : Not listed

ISHL : Not listed

IECSC : Not listed

TCSI : Not listed

TSCA : Not On TSCA Inventory

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; 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; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

### Further information

Other information : The Safety Data Sheet has been updated to the SAP EH&S Standard template., This update affects all Sections of the

# SAFETY DATA SHEET



Version	Revision Date:	SDS Number:	Date of last issue: -
3.0	19.09.2017	13393	Date of first issue: 19.09.2017

---

Date format : Safety Data Sheet.  
: dd.mm.yyyy

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