

**Olodaterol hydrochloride**

Version 1.0      Revision Date: 06/03/2015      MSDS Number: 000000021558      Date of last issue: -  
Date of first issue: 06/03/2015

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**SECTION 1. IDENTIFICATION**

Product name : Olodaterol hydrochloride

Synonyms : BI 1744 CL

Product code : 000000021558

**Manufacturer or supplier's details**

Company name of supplier : Boehringer-Ingelheim Pharmaceuticals, Incorporated

Address : 900 Ridgebury Road  
Ridgefield, Connecticut  
06877-0368

Emergency telephone number : +1-800-424-9300 CHEMTREC Emergency Phone Number  
CHEMTREC – 24 Hours

Routine Contact Number : (203) 778-7759

**Recommended use of the chemical and restrictions on use**

Recommended use : Mixture for production of finished medicinal products.

Restrictions on use : For professional and industrial installation and use only.

Prepared by : Corp. Div. EHS & Sustainability / Global EHS Services  
[EHS-service@boehringer-ingelheim.com](mailto:EHS-service@boehringer-ingelheim.com)

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**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification (Hazard Communication Standard (HCS) 29 CFR 1910.1200)**

Acute toxicity (Oral) : Category 4

Eye irritation : Category 2

Specific target organ toxicity  
- repeated exposure (Inhalation) : Category 1

**GHS Label element (Hazard Communication Standard (HCS) 29 CFR 1910.1200)**

Hazard pictograms :



Signal word : Danger

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Hazard statements : H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear eye protection/ face protection.  
P264 Wash hands thoroughly after handling.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P314 Get medical advice/ attention if you feel unwell.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Pure substance

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**SECTION 4. FIRST AID MEASURES**

General advice : Remove from exposure, lie down.  
Take off immediately all contaminated clothing.  
Victim to lie down in the recovery position, cover and keep him warm.  
First Aid responders should pay attention to self-protection and use the recommended protective clothing

If inhaled : Move to fresh air.  
Call a physician immediately.

In case of skin contact : Wash off immediately with plenty of water.  
Cover wound with sterile dressing.  
Call a physician immediately.

In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.  
Keep eye wide open while rinsing.  
Call a physician immediately.

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If swallowed	:	Rinse mouth. Drink plenty of water. Call a physician immediately.
Most important symptoms and effects, both acute and delayed	:	No information available. Harmful if swallowed. Causes serious eye irritation. Causes damage to organs through prolonged or repeated exposure if inhaled.
Notes to physician	:	Symptomatic treatment (decontamination, vital functions).

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**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water Foam Dry chemical Carbon dioxide (CO <sub>2</sub> )
Specific hazards during fire-fighting	:	In case of fire and/or explosion do not breathe fumes. Can be released in case of fire: Carbon oxides Nitrogen oxides (NO <sub>x</sub> )
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment for firefighters	:	Self-contained breathing apparatus (EN 133) complete suit protecting against chemicals

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures	:	Wear personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Knock down dust with water spray jet.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	:	Wear personal protective equipment. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Non-sparking tools should be used. Avoid dispersal of dust in the air (i.e., clearing dust surfaces)

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with compressed air).  
Clean-up methods - large spillage  
Dampen, pick up mechanically and dispose of.  
Clean-up methods - small spillage  
Use approved industrial vacuum cleaner for removal.  
Keep in suitable, closed containers for disposal.

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Avoid dust formation.
- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Minimize dust generation and accumulation. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Breathing must be protected when large quantities are decanted without local exhaust ventilation. Keep container closed when not in use.
- Conditions for safe storage : Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Protect from heat and direct sunlight. Jointless smooth floor
- Materials to avoid : Keep away from food, drink and animal feedingstuffs. Advice on Segregation

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	Basis	Factor	Catergory	Values	Remark
6-Hydroxy-8-((1R)-1-hydroxy-2-((2-(4-methoxyphenyl)-1,1-dimethyl-ethyl)amino)ethyl)-2H-1,4-benzoxazin-3(4H)-one Hydrochloride 869477-96-3	ECL		4	0.1 µg/m <sup>3</sup>	
	BIPC		1b		
ECL (BIPI Exposure Control Limit)					

Contains no substances with occupational exposure limit values.

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**Engineering measures** : It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.  
Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).  
Use only appropriately classified electrical equipment and powered industrial trucks.

**Personal protective equipment**

**Respiratory protection** : Protecting mask (EN 136)  
particle filter P3 (EN 143)  
  
Use NIOSH approved respiratory protection.

**Hand protection** Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.43 mm  
Directive : Protective gloves against chemicals and micro-organisms  
Protective index : Class 6

**Eye protection** : Safety glasses with side-shields  
(Not necessary when using full face mask)

**Skin and body protection** : Laboratory: laboratory coat; factory: disposable Overall.

**Protective measures** : Handle in accordance with good industrial hygiene and safety practice.  
Do not breathe dust.  
Avoid contact with skin, eyes and clothing.  
Only use protective equipment in accordance with national/international regulations. Follow the national regulations about wearing personal protective equipment and the warranty given by the manufacturer for the safe function.

**Hygiene measures** : General industrial hygiene practice.  
Wash hands and face before breaks and immediately after handling the product.  
Keep working clothes separately.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance** : powder

**Colour** : white

**Odour** : No data available

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Odour Threshold : No data available

pH : No data available

Melting point/range : 210 - 220 °C  
Method: Differential Scanning Calorimetry (DSC)

Boiling point/boiling range : No data available

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Bulk density : No data available

Solubility(ies)  
Water solubility : > 20 g/l (37 °C)

Solubility in other solvents : ca. 250 g/l  
(20 °C)  
Solvent: Methanol

ca. 40 g/l  
(20 °C)  
Solvent: Ethanol

ca. 20 g/l  
(20 °C)  
Solvent: acetone

> 100 g/l  
(20 °C)  
Solvent: Dimethyl sulfoxide

Partition coefficient: n-octanol/water : log Pow: 3

Auto-ignition temperature : No data available

Decomposition temperature : No data available

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Viscosity  
Viscosity, dynamic                      : Not applicable

Explosive properties                      : Not tested

Oxidizing properties                      : No data available

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity                                      : No dangerous reaction known under conditions of normal use.

Chemical stability                            : No decomposition if stored and applied as directed.

Possibility of hazardous reactions      : Dust may form explosive mixture in air.

Conditions to avoid                         : No data available

Incompatible materials                      : No data available

Hazardous decomposition products      : No data available

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**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity                            : Acute toxicity estimate (Rat, male): > 1,000 mg/kg  
Method: OECD Test Guideline 423

Acute toxicity estimate (Rat, female): >= 316 - 1,000 mg/kg  
Method: OECD Test Guideline 423

Acute inhalation toxicity                    : LC 50 (estimated) (Rat): > 25 mg/l  
Exposure time: 4 h

Acute dermal toxicity                        : Remarks: No data available

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Species: Rabbit  
Assessment: No skin irritation  
Method: OECD Test Guideline 404  
Result: No skin irritation

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Product:**

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Species: Rabbit  
 Result: Severe eye irritation  
 Assessment: Irritating to eyes.  
 Method: OECD Test Guideline 405  
 GLP: yes

**Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.  
 Respiratory sensitisation: Not classified based on available information.

**Product:**

Remarks: No data available

**Germ cell mutagenicity**

Not classified based on available information.

**Product:**

Genotoxicity in vitro	: Test Type: Ames-test
	Species: Salmonella typhimurium Result: negative
Genotoxicity in vivo	: Test Type: Mouse lymphoma assay
	Species: mouse lymphoma cells Result: negative
Genotoxicity in vivo	: Test Type: Micronucleus test
	Species: Rat Application Route: by inhalation Result: negative

**Carcinogenicity**

Not classified based on available information.

**Product:**

Species: Rat  
 Application Route: Inhalation  
 Exposure time: 104 weeks weeks  
 Dose: 25, 75, 250 µg/kg/day

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.



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**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Causes damage to organs through prolonged or repeated exposure if inhaled.

**Product:**

Exposure routes: inhalation (dust/mist/fume)

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

**Repeated dose toxicity****Product:**

Species: Rat

NOAEL: 0.049 mg/kg

Application Route: Inhalation

Exposure time: 26 weeks

Species: Rat

NOAEL: 0.015 mg/kg

Application Route: Inhalation

Exposure time: 52 weeks

**Aspiration toxicity**

Not classified based on available information.

**Product:**

No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish :  
Remarks: No data available

Toxicity to daphnia and other :  
aquatic invertebrates      Remarks: No data available

Toxicity to algae :  
Remarks: No data available

Toxicity to fish (Chronic tox- :  
icity)      Remarks: No data available

Toxicity to daphnia and other :  
aquatic invertebrates (Chron-  
ic toxicity)      Remarks: No data available

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Toxicity to bacteria : Remarks: No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects****Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Packs that cannot be cleaned should be disposed of in the same manner as the contents.  
Uncontaminated packaging can be recycled.

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**SECTION 14. TRANSPORT INFORMATION****International Regulation****IATA-DGR**

UN/ID No. : UN 3335  
Proper shipping name : Aviation regulated solid, n.o.s.  
Class : 9  
Packing group : III  
Labels : Miscellaneous Dangerous Goods  
Packing instruction (cargo aircraft) : 956  
Packing instruction (passenger aircraft) : 956

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations**

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**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know Act**

- SARA 311/312 Hazards** : Acute Health Hazard
- SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Olodaterol hydrochloride	869477-96-3	90 - 100 %
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**New Jersey Right To Know**

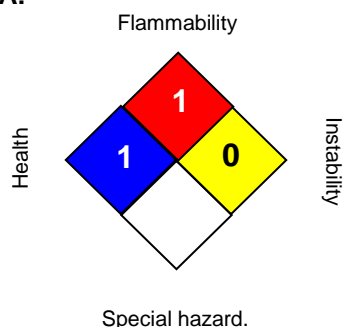
Olodaterol hydrochloride	869477-96-3	90 - 100 %
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**California Prop 65**

: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**SECTION 16. OTHER INFORMATION****Further information****NFPA:****HMIS III:**

<b>HEALTH</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 =Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

Vertical lines in the left hand margin indicate an amendment from the previous version. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling. Sources of key data used to compile the Safety Data Sheet : The specifications are based on own tests and/or literature data.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.