

# SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## 1. Identification

### 1.1 GHS Product identifier

Product name (+)-Penbutolol

### 1.2 Other means of identification

Product number -  
Other names -

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research uses.  
Uses advised against no data available

### 1.4 Supplier's details

Company Target molecule Corp.  
Address 36 Washington Street, Wellesley Hills, MA 02481 USA  
Telephone (781) 999-4286  
Fax (781)-999-5354

### 1.5 Emergency phone number

Emergency phone number (781)-999-5354  
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

no data available

### 2.2 GHS label elements, including precautionary statements

Pictogram(s) no data available  
Signal word no data available  
Hazard statement(s) no data available  
Precautionary statement(s)  
Prevention no data available  
Response no data available  
Storage no data available  
Disposal no data available

### 2.3 Other hazards which do not result in classification

no data available

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
(+)-Penbutolol	(+)-Penbutolol	38363-41-6	no data available	100%

## 4. First-aid measures

### 4.1 Description of necessary first-aid measures

#### General advice

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with water. Consult a doctor immediately.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison

Control Center immediately

## 4.2 Most important symptoms/effects, acute and delayed

no data available

## 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Wear personal protective equipment.

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### 5.2 Specific hazards arising from the chemical

no data available

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection. Wear tightly fitting safety goggles with side-shields. Skin protection. Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. Respiratory protection. If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator. Thermal hazards. no data available

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## 9. Physical and chemical properties

Physical state	solid
Odour	no data available
Melting point/ freezing point	no data available
Boiling point or initial boiling point and boiling range	no data available
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	no data available
Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	no data available
Relative vapour density	no data available

**10. Stability and reactivity****10.1 Reactivity**

no data available

**10.2 Chemical stability**

Stable under proper conditions

**10.3 Possibility of hazardous reactions**

no data available

**10.4 Conditions to avoid**

no data available

**10.5 Incompatible materials**

no data available

**10.6 Hazardous decomposition products**no data available

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**11. Toxicological information****Acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**no data available

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**12. Ecological information****12.1 Toxicity**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Other adverse effects**no data available

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**13. Disposal considerations****13.1 Disposal methods****Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **14. Transport information**

### **14.1 UN Number**

no data available

### **14.2 UN Proper Shipping Name**

no data available

### **14.3 Transport hazard class(es)**

no data available

### **14.4 Packing group, if applicable**

no data available

### **14.5 Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

### **14.6 Special precautions for user**

no data available

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

no data available

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## **15. Regulatory information**

### **15.1 Safety, health and environmental regulations specific for the product in question**

Not Listed.

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## **16. Other information**

#### **Information on revision**

**Creation Date** July 15, 2019  
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#### **Abbreviations and acronyms**

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### **References**

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home> HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm> IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/> eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=8172&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=8172&request_locale=en) CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple> ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp> ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg> Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index.jsp> ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

#### **For Research Use Only**

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*