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## Material Safety Data Sheet

### Bisoprolol Hemifumarate

#### Section 1: Chemical Product and Company Identification

**Product Name:** Bisoprolol Hemifumarate

**Catalog Codes:** Not available.

**CAS#:** 104344-23-2

**RTECS:** Not available.

**TSCA:** TSCA 8(b) inventory: Bisoprolol Hemifumarate

**CI#:** Not available.

**Synonym:** Bisoprolol Hemifumarate salt

**Chemical Name:** Bisoprolol Hemifumarate

**Chemical Formula:** C<sub>22</sub>H<sub>35</sub>NO<sub>8</sub>

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#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Bisoprolol Hemifumarate	104344-23-2	100

**Toxicological Data on Ingredients:**

Bisoprolol Hemifumarate: Acute oral toxicity (LD50): 940 mg/kg [Rat].

### Section 3: Hazards Identification

#### Potential Acute Health Effects:

Hazardous in case of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

#### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

### Section 4: First Aid Measures

#### Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

#### Skin Contact:

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact:** Not available.

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Serious Inhalation:** Not available.

#### Ingestion:

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:** Not available.

### Section 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:** Not available.

#### Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

#### Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## Section 6: Accidental Release Measures

### Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

### Large Spill:

Use a shovel to put the material into a convenient waste disposal container.

## Section 7: Handling and Storage

### Precautions:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

### Storage:

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

## Section 8: Exposure Controls/Personal Protection

### Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** White solid.

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** 441.52 g/mole

**Color:** Not available.

**pH (1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** 100°C

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapor Pressure:** Not applicable.  
**Vapor Density:** Not available.  
**Volatility:** Not available.  
**Odor Threshold:** Not available.  
**Water/Oil Dist. Coeff.:** Not available.  
**Solubility:** DMSO: >20 mg/mL

#### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.  
**Instability Temperature:** Not available.  
**Conditions of Instability:** Not available.  
**Incompatibility with various substances:** Not available.  
**Corrosivity:** Non-corrosive in presence of glass.  
**Special Remarks on Reactivity:** Not available.  
**Special Remarks on Corrosivity:** Not available.  
**Polymerization:** No.

#### Section 11: Toxicological Information

**Routes of Entry:** Eye contact. Ingestion.  
**Toxicity to Animals:**  
Acute oral toxicity (LD50): 940 mg/kg [Rat].  
**Chronic Effects on Humans:** The substance is toxic to lungs, mucous membranes.  
**Other Toxic Effects on Humans:**  
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.  
**Special Remarks on Toxicity to Animals:** Not available.  
**Special Remarks on Chronic Effects on Humans:** Not available.  
**Special Remarks on other Toxic Effects on Humans:** Not available.

#### Section 12: Ecological Information

**Ecotoxicity:** Not available.  
**BOD5 and COD:** Not available.  
**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.  
**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.  
**Special Remarks on the Products of Biodegradation:** Not available.

#### Section 13: Disposal Considerations

**Waste Disposal :**  
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

#### Section 14: Transport Information

**DOT Classification:** Not dangerous goods

**Identification:** : Not available.

**Special Provisions for Transport:** Not available.

#### Section 15: Other Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

No data available

**Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

#### Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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