SECTION 1: Identification

1.1. Identification
Product name: Esmolol Hydrochloride Injection
Other means of identification: 10 mg/mL, 10 mL SDV NDC 55150-194-10

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Pharmaceutical

1.3. Details of the supplier of the safety data sheet
AuroMedics
6 Wheeling Road
Dayton, NJ 08810
T 609-642-1136

1.4. Emergency telephone number
Emergency number: 888-238-7880, option 2

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
Classification (GHS-US)
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Full text of H-phrases: see section 16

2.2. Label elements
GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Warning
Hazard statements (GHS-US): H315 - Causes skin irritation
                                  H319 - Causes serious eye irritation
Precautionary statements (GHS-US): P264 - Wash thoroughly after handling
                                  P280 - Wear protective gloves/protective clothing/eye protection/face protection
                                  P302+P352 - If on skin: Wash with plenty of water
                                  P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
                                  P332+P313 - If skin irritation occurs: Get medical advice/attention
                                  P337+P313 - If eye irritation persists: Get medical advice/attention
                                  P362+P364 - Take off contaminated clothing and wash it before reuse

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS No) 7732-18-5</td>
<td>&gt; 99</td>
<td>Not classified</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>(CAS No) 1310-73-2</td>
<td>&lt; 1</td>
<td>Met. Corr. 1, H290</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Sodium acetate trihydrate</td>
<td>(CAS No) 6131-90-4</td>
<td>&lt; 1</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
**Esmolol Hydrochloride Injection**

**Safety Data Sheet**

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esmolol Hydrochloride</td>
<td>(CAS No) 81161-17-3</td>
<td>1</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>(CAS No) 64-19-7</td>
<td>&lt; 0.01</td>
<td>Flam. Liq. 3, H226</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Dermal), H312</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>(CAS No) 7647-01-0</td>
<td>&lt; 0.01</td>
<td>Acute Tox. 3 (Inhalation:gas),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1A, H314</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

**SECTION 4: First aid measures**

4.1. **Description of first aid measures**

First-aid measures after inhalation: If not breathing, give artificial respiration.

First-aid measures after skin contact: Drench affected area with water.

First-aid measures after eye contact: Rinse immediately with tap water for 10 minutes - open eyelids forcibly.

First-aid measures after ingestion: Seek immediate medical attention.

4.2. **Most important symptoms and effects, both acute and delayed**

Symptoms/injuries after inhalation: None under normal use conditions.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: May be harmful if swallowed.

4.3. **Indication of any immediate medical attention and special treatment needed**

No additional information available

**SECTION 5: Firefighting measures**

5.1. **Extinguishing media**

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: None.

5.2. **Special hazards arising from the substance or mixture**

Fire hazard: None known.

5.3. **Advice for firefighters**

Protection during firefighting: Firefighters should wear full protective gear.

**SECTION 6: Accidental release measures**

6.1. **Personal precautions, protective equipment and emergency procedures**

General measures: No special measures required.

6.1.1. **For non-emergency personnel**

No additional information available

6.1.2. **For emergency responders**

No additional information available

6.2. **Environmental precautions**

Prevent entry to sewers and public waters.

6.3. **Methods and material for containment and cleaning up**

For containment: Stop the flow of material, if this is without risk.

Methods for cleaning up: Confine spill and soak up with absorbent. Place in an approved container and dispose in accordance with local, state and federal regulations.

6.4. **Reference to other sections**

No additional information available

**SECTION 7: Handling and storage**

7.1. **Precautions for safe handling**

Precautions for safe handling: Avoid contact with eyes, skin or clothing. Wash after handling.

7.2. **Conditions for safe storage, including any incompatibilities**

Storage conditions: Store at 20° to 25°C (68° to 77°F).
SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (ppm)</th>
<th>ACGIH STEL (ppm)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (TWA) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acetic acid (64-19-7)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sodium hydroxide (1310-73-2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hydrochloric acid (7647-01-0)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Local exhaust and general ventilation must be adequate to meet exposure standards.

Hand protection: Use neoprene or rubber gloves.

Eye protection: Safety glasses.

Skin and body protection: Wear suitable working clothes.

Respiratory protection: None necessary during normal operations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance: Clear.

Color: Colorless

Odor: Odorless

Odor threshold: No data available

pH: 4.5 - 5.5

Melting point: No data available

Freezing point: No data available

Boiling point: No data available

Flash point: No data available

Relative evaporation rate (butyl acetate=1): No data available

Flammability (solid, gas): No data available

Explosion limits: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Vapor pressure: No data available

Relative density: No data available

Relative vapor density at 20 °C: No data available

Solubility: Completely soluble.

Log Pow: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Viscosity, kinematic: No data available
Viscosity, dynamic : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions
Will not occur.

10.4. Conditions to avoid
None

10.5. Incompatible materials
None known.

10.6. Hazardous decomposition products
None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

**Acetic acid (64-19-7)**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>3310 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>1060 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>11.4 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>3310.000 mg/kg</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>1060.000 mg/kg</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 90 ml/kg</td>
</tr>
</tbody>
</table>

**Sodium hydroxide (1310-73-2)**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
<td>1350 mg/kg</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>1350.000 mg/kg</td>
</tr>
</tbody>
</table>

**Hydrochloric acid (7647-01-0)**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>238 - 277 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5010 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>1.68 mg/l (Exposure time: 1 h)</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>781.000 ppmV/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.

pH: 4.5 - 5.5

Serious eye damage/irritation : Causes serious eye irritation.

pH: 4.5 - 5.5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

**Hydrochloric acid (7647-01-0)**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC group</td>
<td>3 - Not classifiable</td>
</tr>
</tbody>
</table>

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified
Esmolol Hydrochloride Injection
Safety Data Sheet

Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50/EC50</th>
<th>Exposure Time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid (64-19-7)</td>
<td>LC50 fish 1</td>
<td>79 mg/l</td>
<td>Pimephales promelas [static]</td>
</tr>
<tr>
<td></td>
<td>EC50 Daphnia 1</td>
<td>65 mg/l</td>
<td>Daphnia magna [Static]</td>
</tr>
<tr>
<td></td>
<td>LC50 fish 2</td>
<td>75 mg/l</td>
<td>Lepomis macrochirus [static]</td>
</tr>
<tr>
<td>Sodium hydroxide (1310-73-2)</td>
<td>LC50 fish 1</td>
<td>45.4 mg/l</td>
<td>Oncorhynchus mykiss [static]</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid (64-19-7)</td>
<td>-0.31 (at 20 °C)</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid (64-19-7)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Water (7732-18-5)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Sodium hydroxide (1310-73-2)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>
Hydrochloric acid (7647-01-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302
Subject to reporting requirements of United States SARA Section 313

<table>
<thead>
<tr>
<th>SARA Section 302 Threshold Planning Quantity (TPQ)</th>
<th>500 (gas only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
<td>1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)</td>
</tr>
</tbody>
</table>

15.2. US State regulations

Acetic acid (64-19-7)
U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Sodium hydroxide (1310-73-2)
U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Hydrochloric acid (7647-01-0)
U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Inhalation:gas)</th>
<th>Acute toxicity (inhalation:gas) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Dermal)</td>
<td>Acute toxicity (dermal) Category 4</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids Category 3</td>
</tr>
<tr>
<td>Met. Corr. 1</td>
<td>Corrosive to metals Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation Category 1A</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H290</td>
<td>May be corrosive to metals</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled</td>
</tr>
</tbody>
</table>

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.