# SAFETY DATA SHEET
## Amlodipine

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

### Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

<table>
<thead>
<tr>
<th>1.1 Product Code:</th>
<th>14838</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name:</td>
<td>Amlodipine</td>
</tr>
</tbody>
</table>
| Synonyms:         | 3-ethyl 5-methyl ester  
                      2-[(2-aminooethoxy)methyl]-4-(2-chlorophenyl)-1,4-dihydro-6-methyl-3,5-pyridinedicarb oxylxylic acid; Intervask; Pelmec; |

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

Relevant identified uses: For research use only, not for human or veterinary use.

### Details of the Supplier of the Safety Data Sheet:

**Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

**Web site address:** www.caymanchem.com

**Information:**  
Cayman Chemical Company  
+1 (734)971-3335

### Emergency telephone number:

**Emergency Contact:**  
CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

#### 2.1 Classification of the Substance or Mixture:

**2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**

- Acute Toxicity: Oral, Category 3
- Serious Eye Damage/Eye Irritation, Category 1
- Target Organ Systemic Toxicity (repeated exposure), Category 2
- Aquatic Toxicity (Acute), Category 1
- Aquatic Toxicity (Chronic), Category 1

**2.1.2 Classification according to Directive 1999/45/EC:**

- **T:** Toxic
- **N:** Dangerous for the environment

**Risk Phrases: R25, R41, R48/22, R50/53**  
For full text of R- phrases: see SECTION 15.

#### 2.2 Label Elements:

**2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

![GHS Signal Word: Danger](image)

**GHS Hazard Phrases:**

- H301: Toxic if swallowed.
- H318: Causes serious eye damage.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
GHS Precaution Phrases:
P264: Wash {hands} thoroughly after handling.
P280: Wear {protective gloves/protective clothing/eye protection/face protection}.
P260: Do not breathe {dust/fume/gas/mist/vapours/spray}.
P273: Avoid release to the environment.

GHS Response Phrases:
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330: Rinse mouth.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a {POISON CENTER/doctor/...}.
P314: Get medical attention/advice if you feel unwell.
P391: Collect spillage.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.2.2 Labeling according to Directive 1999/45/EC:

2.3 Adverse Human Health Causes serious eye damage.

Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract.
- May be harmful by inhalation or skin absorption.
- May cause skin or respiratory system irritation.
- May cause damage to organs through prolonged or repeated exposure.
- Toxic if swallowed.
- Very toxic to aquatic life with long lasting effects.
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>Risk Phrases/ GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>88150-42-9 NA</td>
<td>Amlodipine</td>
<td>100.0 %</td>
<td>425-820-1 607-565-00-8</td>
<td>T;N; R25-41-48/22-50/53 Acute Tox.(O) 3: H301 Eye Damage 1: H318 TOST (RE) 2: H373 Aquatic (A) 1: H400 Aquatic (C) 1: H410</td>
</tr>
</tbody>
</table>

Multi-region format
Section 4. First Aid Measures

4.1 Description of First Aid Measures

No data available.

- **In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

- **In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

- **In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

- **In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

Unsuitable Extinguishing Media:
Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards:
No data available.

Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: No data.

5.3 Fire Fighting Instructions:
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:
Avoid breathing dust, and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions:
Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up:
Contain spill and collect, as appropriate.

Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:
Avoid breathing dust/fume/gas/mist/vapours/spray.
Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing:
Keep container tightly closed.
Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>88150-42-9</td>
<td>Amlodipine</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Multi-region format
### CAS # | Partial Chemical Name | OSHA TWA | ACGIH TWA | Other Limits
--- | --- | --- | --- | ---
88150-42-9 | Amlodipine | No data. | No data. | No data.

### Section 9. Physical and Chemical Properties

#### 9.1 Information on Basic Physical and Chemical Properties

- **Physical States:** 
  - [ ] Gas  
  - [ ] Liquid  
  - [X] Solid
- **Appearance and Odor:** A crystalline solid
- **Melting Point:** No data.
- **Boiling Point:** No data.
- **Flash Pt:** No data.
- **Evaporation Rate:** No data.
- **Explosive Limits:** LEL: No data.  
  UEL: No data.
- **Vapor Pressure (vs. Air or mm Hg):** No data.
- **Vapor Density (vs. Air = 1):** No data.
- **Specific Gravity (Water = 1):** No data.
- **Solubility in Water:** No data.
- **Solubility Notes:** ~70 µg/ml in 1:2 DMF:PBS (pH 7.2); ~12.5 mg/ml in EtOH & DMSO; ~20 mg/ml in DMF.
- **Autoignition Pt:** No data.

#### 9.2 Other Information

- **Percent Volatile:** No data.
- **Molecular Formula & Weight:** C20H25ClN2O5 408.9

### Section 10. Stability and Reactivity

#### 10.1 Reactivity:
No data available.

#### 10.2 Stability:
- Unstable [ ]  
  - Stable [X]

#### 10.3 Stability Note(s):
Stable if stored in accordance with information listed on the product insert.

#### 10.4 Conditions To Avoid:
No data available.

#### 10.5 Incompatibility - Materials To Avoid:
No data available.

#### 10.6 Hazardous Decomposition Or Byproducts:
- carbon dioxide
- carbon monoxide
- hydrogen chloride
Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied. Amlodipine - Toxicity Data: Oral TDLO (child): 400 µg/kg; Oral TDLO (woman): 600 µg/kg/3D (intermittent); Oral TDLO (woman): 1400 µg/kg; Oral TDLO (human): 0.144 mg/kg; Oral TDLO (rat): 10 µg/kg;

Chronic Toxicological Effects: Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Amlodipine RTECS Number: US7968329

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Toxic solid, organic, n.o.s. (Amlodipine)
DOT Hazard Class: 6.1 POISON
UN/NA Number: 2811 Packing Group: III

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Toxic solid, organic, n.o.s. (Amlodipine)
UN Number: 2811 Packing Group: III Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Toxic solid, organic, n.o.s. (Amlodipine)

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88150-42-9</td>
<td>Amlodipine</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>88150-42-9</td>
<td>Amlodipine</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
</tbody>
</table>
European Community Hazard Symbol codes:

![Skull and Crossbones] (T)

![Tree] (N)

European Community Risk and Safety Phrases:

R25 Toxic if swallowed.
R41 Risk of serious damage to the eyes.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S22 Do not breathe dust.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
S61 Avoid release to the environment. Refer to special instructions / safety data sheets.

Regulatory Information

Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 03/24/2014

Additional Information About This Product: No data available.

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