SAFETY DATA SHEET

Preparation Date: No data available
Revision Date: 06/23/2015
Revision Number: G1

Product identifier

Product code: H1107
Product Name: HYDROMORPHONE HYDROCHLORIDE (CII), USP

Other means of identification

Synonyms: 4,5-alpha-Epoxy-3-hydroxy-17-methylmorphinan-6-one hydrochloride; Dihydromorphinone hydrochloride; Dilaudid; Dilaudid hydrochloride; Hymorphan; Laudicon
CAS #: 71-68-1
RTECS #: QD2625000
Ci#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Acute toxicity - Oral</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Label elements
Warning

Hazard statements
Harmful if swallowed
May cause drowsiness or dizziness

Hazard statements
Not Applicable

Other hazards
May be habit forming

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
<td>71-68-1</td>
<td>100</td>
<td>*</td>
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</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

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Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Harmful if swallowed. May be habit forming. Dizziness. Drowsiness.

Indication of any immediate medical attention and special treatment needed
Notes to Physician: Treat symptomatically

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2), Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides, Nitrogen oxides

Specific hazards: May be combustible at high temperatures
When heated to decomposition it emits toxic fumes

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.
7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Sensitive to light. Store in light-resistant containers.

Incompatible Materials:
Alkalis. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<td>None</td>
<td>None</td>
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<tr>
<td>71-68-1</td>
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</table>

Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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<tbody>
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Australia and Mexico

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<th>Mexico</th>
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</thead>
<tbody>
<tr>
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<td>None</td>
</tr>
<tr>
<td>71-68-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures to reduce exposure:
Ensure adequate ventilation. 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.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses Safety glasses with side-shields

Skin and body protection: Chemical resistant apron. Gloves. Long sleeved clothing.

Respiratory protection: Effective dust mask Wear respirator with dust filter.

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**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Appearance:</th>
<th>Color:</th>
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<tbody>
<tr>
<td>Odor: Odorless.</td>
<td>Taste</td>
<td>No information available</td>
</tr>
<tr>
<td>Formula: C17H19NO3•HCl</td>
<td>Flammability:</td>
<td>No information available</td>
</tr>
<tr>
<td>Flashpoint (°C/°F): No information available.</td>
<td>Flash Point Tested according to: Not available</td>
<td>Lower Explosion Limit (%): No information available</td>
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<tr>
<td>Upper Explosion Limit (%): No information available.</td>
<td>Autoignition Temperature (°C/°F): No information available</td>
<td>pH: No information available</td>
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<tr>
<td>Melting point/range(°C/°F): No information available</td>
<td>Boiling point/range(°C/°F): No information available</td>
<td>Decomposition temperature(°C/°F): 305°-315°C/581°-599°F</td>
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<tr>
<td>Bulk density: No information available</td>
<td>Specific gravity: No information available</td>
<td>Vapor pressure @ 20°C (kPa): No information available</td>
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<tr>
<td>Density (g/cm3): No information available</td>
<td>Evaporation rate: No information available</td>
<td>Vapor density: No information available</td>
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<tr>
<td>VOC content (g/L): No information available</td>
<td>Odor threshold (ppm): No information available</td>
<td>Partition coefficient (n-octanol/water): No information available</td>
</tr>
<tr>
<td>Viscosity: No information available</td>
<td>Miscibility: No information available</td>
<td>Solubility: Easily soluble in cold water</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**
- Reactive with alkalis
- Reactive with oxidizing agents

**Chemical stability**
- Stability: Sensitive to light. Exposure to light accelerates decomposition. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials. Exposure to light.

**Incompatible Materials:** Alkalis. Oxidizing agents.

**Hazardous decomposition products:** Carbon oxides. Nitrogen oxides (NOx).

**Other Information**
- Corrosivity: No information available
- Special Remarks on Corrosivity: No information available

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11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

_Hydromorphone Hydrochloride - 71-68-1_
- LD50/oral/rat = No information available
- LD50/oral/mouse = No information available
- LD50/dermal/rat = No information available
- LD50/dermal/rabbit = No information available
- LC50/inhalation/rat = No information available
- LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

- LD50/oral/rat =
  VALUE- Acute Tox Oral = No information available

- LD50/oral/mouse =
  Value - Acute Tox Oral = No information available

- LD50/dermal/rabbit
  VALUE-Acute Tox Dermal = No information available

- LD50/dermal/rat
  VALUE -Acute Tox Dermal = No information available

- LC50/inhalation/rat
  VALUE-Vapor = No information available
  VALUE-Gas = No information available
  VALUE-Dust/Mist = No information available

- LC50/inhalation/mouse
  VALUE-Vapor = No information available
  VALUE - Gas = No information available
  VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation
Eye Contact: May cause eye irritation
Inhalation May cause respiratory tract irritation.
Ingestion
Harmful if swallowed. May be habit forming. May cause nausea, vomiting, constipation or diarrhea, dry mouth, loss of appetite, sweating, flushing of the face, cold and clammy skin. May affect respiration (respiratory depression, wheezing, shortness of breath, trouble breathing), behavior/central nervous system (analgesia, headache, dizziness, confusion, drowsiness, euphoria, restlessness, nervousness, lightheadness, unusual tiredness, weakness, fainting, convulsions, unconsciousness), cardiovascular system (slow heartbeat, low blood pressure, change in heart rate), blood, liver. May cause blurred vision or double vision or pinpoint pupils, painful or decreased urination.

Aspiration hazard
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity
No information available

Sensitization:
No information available

Mutagenic Effects:
May affect genetic material

Carcinogenic effects:
Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
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<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity
No data is available

Reproductive Effects:
May cause adverse reproductive effects.

Developmental Effects:
No information available

Teratogenic Effects:
May cause birth defects (teratogenic effects)

Specific Target Organ Toxicity

STOT - single exposure
No information available

STOT - repeated exposure
No information available

Target Organs:
Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects:
No data available.

Persistence and degradability:
No information available

Bioaccumulative potential:
No information available

Mobility:
No information available

Product code: H1107
Product name: HYDROMORPHONE HYDROCHLORIDE (CII), USP
13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal.

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<tr>
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</thead>
<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: None
- ERG No: No information available
- Marine Pollutant: No data available
- DOT RQ (lbs): No information available

TDG (Canada)
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

ADR
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Packing Group: No information available
- Subsidiary Risk: No information available
- Classification Code: No information available
- Description: No information available
- CEFIC Tremcard No: No information available

IMO / IMDG
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available
- IMDG Page: No information available
- Marine Pollutant: No information available
- MFAG: No information available
- Maximum Quantity: No information available

Product code: H1107
Product name: HYDROMORPHONE HYDROCHLORIDE (CII), USP
14. TRANSPORT INFORMATION

RID
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Classification Code: No information available
- Description: No information available

ICAO
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

IATA
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL (PICCS)</th>
<th>Philippines KECL (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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</thead>
<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
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<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Present 200-762-6</td>
</tr>
</tbody>
</table>

U.S. Regulations


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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</thead>
<tbody>
<tr>
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</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
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Product code: H1107
Product name: HYDROMORPHONE HYDROCHLORIDE (CII), USP
U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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</thead>
<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
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</tbody>
</table>

Canada

WHMIS hazard class:
D2B  Toxic materials

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
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<td>Not listed</td>
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</table>

EU Classification

R-phrase(s)
R22 - Harmful if swallowed.

S -phrase(s)
S46 - If swallowed, seek medical advice immediately and show this container or label.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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<tbody>
<tr>
<td>Hydromorphone Hydrochloride</td>
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<td>No information</td>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
None.
Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet