1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name United 311 STEAMMATE

Other means of identification
SDS # UNITED-311
UN/ID No UN1760

Recommended use of the chemical and restrictions on use
Recommended Use Steam and Return Line Treatment.
Uses Advised Against For industrial and institutional use only.

Details of the supplier of the safety data sheet
Supplier Address United Laboratories, Inc.
320 37th Avenue
St. Charles, IL 60174
www.unitedlabsinc.com
www.unitedlabsinc.ca

Emergency Telephone Number
Company Phone Number 800-323-2594 (to reorder)
Emergency Telephone (24 hr) INFOTRAC 1-800-535-5053 (North America)
1-352-323-3500 (International)

2. HAZARDS IDENTIFICATION

Appearance Colorless liquid
Physical State Liquid
Odor Amine

Classification
Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1
Flammable Liquids Category 4

Signal Word
Danger

Hazard Statements
Causes severe skin burns and eye damage. Combustible liquid.
Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Precautionary Statements - Response
Immediately call a poison center or doctor/physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction.

Precautionary Statements - Storage
Store locked up. Store in a well-ventilated place. Keep cool.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine</td>
<td>110-91-8</td>
<td>10-30</td>
</tr>
</tbody>
</table>

**If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.**

4. FIRST-AID MEASURES

First Aid Measures

**General Advice**
Immediately call a poison center or doctor/physician.

**Eye Contact**
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

**Skin Contact**
Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

**Inhalation**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

**Ingestion**
Rinse mouth. Do not induce vomiting.

Most important symptoms and effects

**Symptoms**
Causes severe skin burns and eye damage.

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

**Notes to Physician**
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Water spray (fog). Dry chemical. Alcohol resistant foam. Carbon dioxide (CO2).
Unsuitable Extinguishing Media  Water may be ineffective in fighting fire.

Specific Hazards Arising from the Chemical
Sealed containers may rupture due to pressure build-up, greatly increasing the hazard.

Hazardous Combustion Products  When strongly heated, as in a fire, this product may produce oxides of carbon, ammonia, nitrogen aldehydes and ketones.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water spray should be used to keep containers cool.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions  Use personal protective equipment as required.

Methods and material for containment and cleaning up

Methods for Containment  Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up  Ventilate area. Eliminate all sources of ignition. Clean up with non-flammable absorbent such as clay or vermiculite and place in a labeled, closed metal container for proper disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling  Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing and eye/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Conditions for safe storage, including any incompatibilities

Storage Conditions  Store locked up. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store in a cool, dry place away from direct heat. Do not store in unlabeled or mislabeled containers. Keep from freezing.


8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine</td>
<td>TWA: 20 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110-91-8</td>
<td>S*</td>
<td>TWA: 20 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 20 ppm</td>
<td>TWA: 70 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 70 mg/m³</td>
<td>STEL: 30 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vacated) STEL: 105 mg/m³</td>
<td>STEL: 105 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Controls  Provide adequate ventilation and local exhaust is generally adequate. Eyewash stations. Showers.
Individual protection measures, such as personal protective equipment

Eye/Face Protection  Chemical safety goggles are recommended.

Skin and Body Protection  Chemical resistant gloves are recommended. Shirts with long sleeves or lab coats or coveralls are recommended.

Respiratory Protection  None required if good ventilation is maintained. If TLV is exceeded, use a NIOSH/MSHA approved respirator.

General Hygiene Considerations  Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless</td>
<td>Amine</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>10.5-11.5</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>100 °C / 212 °F</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>62.2 °C / 144 °F</td>
<td>Tag Closed Cup</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>1.00</td>
<td>(Water = 1)</td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>Liquid-Not applicable</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>3.0</td>
<td>(Water = 1)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.03</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely soluble</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity  Not reactive under normal conditions.

Chemical Stability  Stable under recommended storage conditions.

Possibility of Hazardous Reactions  Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid  Incompatible Materials.


Hazardous Decomposition Products  When heated strongly, as in a fire, this product may produce ammonia, oxides of carbon, nitrogen, aldehydes and ketones.
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Inhalation Do not inhale.

Ingestion Do not ingest.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine 110-91-8</td>
<td>= 1050 mg/kg (Rat)</td>
<td>310 - 810 mg/kg (Rabbit)</td>
<td>= 8000 ppm (Rat) 8h</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Carcinogenicity Group 3 IARC components are "not classifiable as human carcinogens".

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine 110-91-8</td>
<td>Group 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"

Numerical measures of toxicity
Not determined.

12. ECOLOGICAL INFORMATION

Ecotoxicity Not determined.

Persistence/Degradability Not determined.

Bioaccumulation Not determined.

Mobility Not determined.

Other Adverse Effects Not determined.
13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note
Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class: 8
Packing Group: III

IATA

UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class: 8
Packing Group: III

IMDG

UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class: 8
Packing Group: III

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine</td>
<td>Present</td>
<td>X</td>
<td></td>
<td>Present</td>
<td></td>
<td>X</td>
<td>Present</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.
CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine 110-91-8</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
<td>N+P</td>
</tr>
</tbody>
</table>

Issue Date: 03-Mar-2011
Revision Date: 10-Feb-2016
Revision Note: New format

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet