SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
2,6-Lutidine

Synonyms:
2,6-Dimethylpyridine

Chemical Abstracts Registry No:
108-48-5

REACH Registration Number:
Not applicable.

1.2. Relevant identified uses of the substance or mixture and uses advised against
chemical intermediate

1.3. Details of the supplier of the safety data sheet
Vertellus LLC
201 North Illinois Street, Suite 1800
Indianapolis, Indiana 46204 USA
1-317-247-8141

e-mail Address:
sds@vertellus.com

Vertellus Specialty Chemicals (Nantong) Co., Ltd. #9
#9 Shengkai Road NETDZ
Nantong, Jiangsu, China. 226009
86-513-83591318

1.4. Emergency telephone number
Vertellus:
1-317-247-8141

CHEMTREC (USA):
+1-800-424-9300 (collect calls accepted)

CHEMTREC (International):
+1-703-527-3887 (collect calls accepted)

NRCC (China):
+86 25 85477110

SECTION 2: Hazards identification

Flammable Liquids Category 3
Serious Eye Irritation Category 2
Skin Irritation Category 2
Acute Toxicity Oral Category 4

2.2. Label elements

Hazard Symbols (Pictogram):

Signal Word:
Warning

Hazard Precautions:
H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.

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Prevention Precautionary Statements:
P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/telecommunication/computer/ equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

First Aid Precautionary Statements:
P302+P352 - IF ON SKIN: Wash with plenty of soap and 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.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration (weight %)</th>
<th>EC Number</th>
<th>CLP Inventory/Annex VI</th>
<th>EU CLP Classification (1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Lutidine</td>
<td>108-48-5</td>
<td>~100</td>
<td>203-587-3</td>
<td>Not applicable.</td>
<td>Flam. Liq. 3; H226 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Acute Tox. 4; H302</td>
</tr>
</tbody>
</table>

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable).

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician.

Eye Contact: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

Inhalation: Remove from exposure. If not breathing, give artificial respiration and call a physician.

Ingestion: If swallowed, contact physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Acute: 2,6-Lutidine is mildly irritating to skin and severely irritating to eyes. Vapors may be irritating to the respiratory tract. May be readily absorbed through the skin. Extended exposure (e.g. from saturated clothing) may lead to systemic poisoning. Symptoms may include headache, dizziness, drowsiness, nausea, and other effects. Symptoms seen after inhalation overexposures are expected to be essentially the same as those listed previously.

Delayed Effects: None known.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Foam, carbon dioxide, dry chemical, water fog

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

Potential for Dust Explosion: Not applicable.

Special Flammability Hazards: Severe explosion hazard in the form of vapor (within flammability limits) when exposed to heat, flame or static discharge.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Wear self-contained breathing apparatus and full protective clothing (i.e., Bunker gear). Skin and eye contact should be avoided. Normal fire fighting procedures may be used.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

6.3. Methods and material for containment and cleaning up

Remove all ignition sources. Ventilate the area of spill or leak. Wear protective equipment during clean-up. For small spills, use suitable absorbent material and collect for later disposal. For large spills, the area may require diking to contain the spill. Material can then be collected (eg., suction) for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling
Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.

7.2. Conditions for safe storage, including any incompatibilities
Storage Precautions & Recommendations: Maintain dry, ventilated conditions for storage. Protect containers against physical damage. Outside or detached storage is preferable. Inside storage should be in standard flammable liquids storage room or cabinet.
Dangerous Incompatibility Reactions: Avoid contact with strong acids and oxidizing agents.
Incompatibilities with Materials of Construction: None known

7.3. Specific end use(s)
If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Occupational Exposure Limits: Not established.

8.2. Exposure controls
Also see the annex to this SDS (if applicable) for specific exposure scenario controls.
Other Engineering Controls: All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.
Personal Protective Equipment: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary. Chemical goggles or safety glasses (EN166) should be worn at all times; use face shields as conditions warrant. Neoprene, nitrile or PVC-coated gloves (Standard EN 374). Safety glasses or chemical goggles (Standard EN166). Chemical resistant clothing (Standard EN368). Impervious clothing and boots.
Respirator Caution: Observe OSHA regulations for respirator use (29 CFR 1910.134) or equivalent guidance. Air-purifying respirators must not be used in oxygen-deficient atmospheres.
Thermal Hazards: Not applicable.
Environmental Exposure Controls: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance, State &amp; Odor</td>
<td>straw-colored liquid with a characteristic odor</td>
</tr>
<tr>
<td>Molecular Formula:</td>
<td>C₇H₉N</td>
</tr>
<tr>
<td>Molecular Weight:</td>
<td>107.16</td>
</tr>
<tr>
<td>vapor Pressure:</td>
<td>5.65 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Specific Gravity or Density:</td>
<td>0.923</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>144 °C</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>27 - 30% @ 34 - 45°C</td>
</tr>
<tr>
<td>pH:</td>
<td>pKa = 6.6 @ 25°C</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point and Method:</td>
<td>99°F (37°C) Tag Closed Cup</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Explosive Properties:</td>
<td>Not explosive.</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1. Reactivity
Not classified as dangerously reactive.

10.2. Chemical stability
Stable

10.3. Possibility of hazardous reactions
Will not autopolymerize.

10.4. Conditions to avoid
Avoid static discharge and uncontrolled exposure to high temperatures.

10.5. Incompatible materials
Avoid contact with strong acids and oxidizing agents.

10.6. Hazardous decomposition products
Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral LD₅₀:</td>
<td>Oral LD₅₀ (rat) = 457 mg/kg</td>
</tr>
<tr>
<td>Acute Dermal LD₅₀:</td>
<td>Dermal LD₅₀ (guinea pig) = 2500 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Dermal LD₅₀ (rabbit) &gt; 1000 mg/kg</td>
</tr>
<tr>
<td>Acute Inhalation LC₅₀:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Skin Irritation:</td>
<td>Moderately irritating to skin.</td>
</tr>
</tbody>
</table>

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Eye Irritation: Moderately irritating to eyes.
Skin Sensitization: Not expected to be a sensitizer.
Mutagenicity: No data available.
Reproductive / Developmental Toxicity: No data available.
Carcinogenicity: This material is not listed by IARC, NTP or OSHA as a carcinogen. No test data is available that indicates this material is a carcinogen.
Target Organs: As a class, some pyridines have been shown to be hepatotoxins (cause liver damage) with chronic overexposure by any route.
Aspiration Hazard: No data available.
Primary Route(s) of Exposure: Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.
Most important symptoms and effects, both acute and delayed: 2,6-Lutidine is mildly irritating to skin and severely irritating to eyes. Vapors may be irritating to the respiratory tract. May be readily absorbed through the skin. Extended exposure (e.g. from saturated clothing) may lead to systemic poisoning. Symptoms may include headache, dizziness, drowsiness, nausea, and other effects. Symptoms seen after inhalation overexposures are expected to be essentially the same as those listed previously. Delayed Effects: None known.
Additive or Synergistic effects: None known.
Additional Toxicity Information: 2,6-Lutidine did not meet the criteria for Class 8 (corrosive) under DOT testing requirements.

SECTION 12: Ecological information

12.1. Toxicity
EC₅₀ Oncorhynchus mykiss (rainbow trout) > 5000 µg/L 2,6-Lutidine

12.2. Persistence and degradability
Readily biodegradable.

12.3. Bioaccumulative potential
Not expected to bioconcentrate in aquatic species.

12.4. Mobility in soil
This material is expected to have moderate mobility in soil. It absorbs to most soil types.

12.5. Results of PBT and vPvB assessment
This substance is not a PBT or vPvB.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: D001
Waste Classification: (per US regulations) Ignitable.
Waste Disposal: NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the

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appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number
UN1993
14.2. UN proper shipping name
Flammable liquid, n.o.s. (2,6-Lutidine)
14.3. Transport hazard class(es)
3
14.4. Packing group
PG III
14.5. Environmental hazards
Not applicable.
14.6. NA Emergency Guidebook Numbers:
128
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

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

Chemical Inventory Lists:

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA TSCA</td>
<td>Listed</td>
<td>Listed (203-587-3)</td>
</tr>
<tr>
<td>Canada (DSL/NDSL)</td>
<td>Listed (DSL)</td>
<td>Japan ENCS: Listed ((5)-712)</td>
</tr>
<tr>
<td>Korea</td>
<td>Listed (KE-11843)</td>
<td>Australia: Listed</td>
</tr>
<tr>
<td>China</td>
<td>Listed</td>
<td>Philippines: Listed</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Listed</td>
<td>New Zealand: Listed</td>
</tr>
</tbody>
</table>

German Water Hazard Classification:
ID Number 8300, hazard class 3 - severe hazard to waters (2,6-Dimethylpyridin)

SARA 313:
Not applicable.

Reportable Quantities:
Not applicable.

State Regulations:
Not applicable.

HMIS IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

NFPA:

Classification Method:
On basis of test data

Legend of Abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EINECS = European Inventory of Existing Commercial Chemical Substances.
ELINCS = European List of Notified Chemical Substances.
LD = Lethal Dose.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicology Program.
OSHA = Occupational Safety and Health Administration.
PEL = Permissible Exposure Limit.
RQ = Reportable Quantity.

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