Section 1. Product and Company Identification

Product Name: Carmustine
Product ID: C0173
Chemical Name (Synonyms): Becenun; Bicnu; Carmubris
Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
www.lktlabs.com - getinfo@lktlabs.com
Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification:
- Acute toxicity, Oral (Category 2), H300
- Carcinogenicity (Category 1B), H350
- Reproductive toxicity (Category 1B), H360

Pictogram:
- Danger

Signal word:
- Danger

Hazard and precautionary statements:
- Hazard statements:
  - H300 - Fatal if swallowed.
  - H350 - May cause cancer.
  - H360 - May damage fertility or the unborn child.
- Precautionary statements:
  - P201 - Obtain special instructions before use.
  - P202 - Do not handle until all safety precautions have been read and understood.
  - P264 - Wash skin thoroughly after handling.
  - P270 - Do not eat, drink or smoke when using this product.
  - P281 - Use personal protective equipment as required.
  - P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
  - P308 + P313 - IF exposed or concerned: Get medical advice/attention.
  - P321 - Specific treatment (see supplemental first aid instruction on this label).
  - P330 - Rinse mouth.
  - P405 - Store locked up.
  - P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification:
- Health hazard: 3
- Chronic health hazard: 0
- Flammability: 0
- Physical hazard: 0

NFPA Rating:
- Health hazard: 3
- Fire hazard: 0
- Physical hazard: 0

Potential Health Effects:
- Inhalation - May be harmful if inhaled. May cause respiratory tract irritation.
- Skin - May be harmful if absorbed through skin. May cause skin irritation.
- Eyes - May cause eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Ingredient: Title Compound</th>
<th>Percent: 100</th>
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<tr>
<td>Formula</td>
<td>C5H9Cl2N3O2</td>
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<tr>
<td>CAS No.</td>
<td>154-93-8</td>
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<td>Formula Wt.</td>
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<td>214.05</td>
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<tr>
<td>EC No.</td>
<td></td>
<td>205-838-2</td>
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</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

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

Firefighting Procedures
Wear self-contained breathing apparatus for fire fighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx), hydrogen chloride gas.

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: +4˚C

Hazardous Decomposition Products
Not available.

Other Remarks
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**
Contains no substances with occupational exposure limit values. Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.

**PERSONAL PROTECTION**
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye/face protection:** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Section 9. Physical and Chemical Properties

**Physical State**

Solid.

**Color**

Yellowish crystal.

**Boiling Point**

Not available.

**Melting Point**

31°C

**Solubility**

Soluble in water (4 mg/ml) or 50% ethanol (150 mg/ml). DMSO.

**Flash Point**

Not available.

**Lower explosion limit**

Not available.

**Upper explosion limit**

Not available.

**Water solubility**

Soluble in water (4000 mg/l).

**Partition coefficient:**

n-octanol/water

log P 1.53

**Relative vapor density**

Not available.

**Odor**

Not available.

**Evaporation rate**

Not available.

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Section 10. Stability and Reactivity

**Stability**

Stable under recommended storage conditions.

**Materials To Avoid**

Acids.

**Hazardous Decomposition Products**

Not available.
Section 11. Toxicological Information

**Oral LD50**
- Rat: 20 mg/kg

**Inhalation LC50**
- Not available.

**Dermal LD50**
- Not available.

**Other information on acute toxicity**
- Not available.

**Skin corrosion/irritation**
- Not available.

**Serious eye damage/irritation**
- Not available.

**Respiratory or skin sensitization**
- Not available.

**Germ cell mutagenicity**
- Not available.

**Carcinogenicity**
- This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
  - **IARC: 2A** - Group 2A: Probably carcinogenic to humans (Carmustine).
  - **ACGIH**: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH
  - **NTP**: Reasonably anticipated to be a human carcinogen (Carmustine).
  - **OSHA**: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive Toxicity**
- May cause congenital malformation in the fetus. Presumed human reproductive toxicant. May cause reproductive disorders.

**Specific organ toxicity single exposure (GHS)**
- Not available.

**Specific organ toxicity repeated exposure (GHS)**
- Not available.

**Teratogenicity**
- Not available.

**Aspiration Hazard**
- Not available.

**Synergistic effects**
- Not available.

**Additional Information**
- RTECS: YS2625000

**Signs and symptoms of exposure**
- Liver disorders, ataxia, central nervous system depression, vomiting, nausea.
- Stomach - irregularities - based on human evidence.

**Possibility of hazardous reactions**
- Not available.

**Conditions to avoid**
- Not available.

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**Section 12. Ecological Information**

**Toxicity**
- Not available.

**Mobility in soil**
- Not available.

**PBT and vPvB assessment**
- PBT/vPvB assessment not available as chemical safety assessment not required/not
Section 13. Disposal Considerations

**Waste Disposal**

Dispose of material according to all federal, state and local regulations. Offer material to a licensed, professional waste disposal company to dispose of as unused product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Section 14. Transport Information

**DOT (US)**

- UN number: 2811
- Class: 6.1
- Packing group: II
- Proper shipping name: Toxic solid, organic, n.o.s. (Carmustine)
- Marine pollutant: No
- Poison inhalation hazard: No

**IATA**

- UN 2811
- Class: 6.1
- Packing group: II
- Proper shipping name: Toxic solid, organic, n.o.s. (Carmustine)

**IMDG**

- UN 2811
- Class: 6.1
- Packing group: II
- EMS No.: F-A, S-A
- Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Carmustine)
- Marine pollutant: No

Further Information

Section 15. Regulatory Information

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Components**

Acute health hazard, chronic health hazard.

**Massachusetts Right To Know Components**

- Carmustine
- CAS No.: 154-93-8
- Revision Date: 1993-04-24

**Pennsylvania Right To Know Components**

- Carmustine
- CAS No.: 154-93-8
- Revision Date: 1993-04-24

**New Jersey Right To Know Components**

- Carmustine
- CAS No.: 154-93-8
- Revision Date: 1993-04-24

**California Prop 65 Components**

- WARNING!: This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.
- Carmustine
- CAS No.: 154-93-8
- Revision Date: 2007-09-28

Section 16. Other Information

**Other information**

The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.
For emergencies in the USA, call CHEMTREC 800-424-9300