Section 1. Product and Company Identification

Product Name: Milrinone
Product ID: M3344
Chemical Name (Synonyms): Corotrope; Milrila
Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification:
- Acute toxicity, Oral (Category 3), H301
- Acute toxicity, Skin (Category 3), H311
- Acute toxicitiy, Inhalation (Category 3), H331

GHS Label elements including precautionary statements

Pictogram

Signal word: Danger

Hazard statements:
- H301 + H311+ H331 - Toxic if swallowed, in contact with skin or if inhaled.

Precautionary statements:
- P261 - Avoid breathing dust, fumes, gas, mist vapors and spray.
- P264 - Wash skin thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P271 - Use only outdoors or in a well-ventilated area.
- P280 - Wear protective gloves and protective clothing.
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
- P322 - Specific measures (see supplemental first aid instructions on this label).
- P330 - Rinse mouth.
- P361 - Remove/Take off immediately all contaminated clothing.
- P363 - Wash contaminated clothing before reuse.
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- P405 - Store locked up.
- P501 - Dispose of contents/ container to an approved waste disposal plant.

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

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

Potential Health Effects:
- Inhalation - Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.
- Skin - Acute toxicity. Toxic in contact with skin. May cause skin irritation.
- Eyes - May cause eye irritation.
Ingestion - Acute toxicity. Toxic if swallowed.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Ingredient: Title Compound</th>
<th>Percent: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C_{12}H_{9}N_{3}O</td>
<td>Formula Wt.: 211.22</td>
</tr>
<tr>
<td>CAS No.</td>
<td>78415-72-2</td>
<td>EC No.: 278-903-6</td>
</tr>
</tbody>
</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 firefighting if necessary.

Unusual Fire Hazards
Carbon oxides and/or nitrogen oxides (NOx).

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: Ambient

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. 
General industrial hygiene practice. 
PERSONAL PROTECTION  
Eye/face protection: 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. Full and Splash contact - Material: Nitrile rubber, Minimum layer thickness: 0.11mm, Break through time: 460 min., Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M). 
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: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>Off-white to tan crystalline powder.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>264°C</td>
</tr>
<tr>
<td>Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in DMSO (&gt;10mg/mL).</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

Stable under recommended storage conditions.

Materials To Avoid  
Strong oxidizing agents.

Hazardous Decomposition Products  
Not available.
Section 11. Toxicological Information

Oral LD50
Rat - 91 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.

Reproductive Toxicity
Not available.

Aspiration Hazard
Not available.

Synergistic effects
Not available.

Specific organ toxicity single exposure (GHS)
Not available.

Additional Information
RTECS: DW1762000

Specific organ toxicity repeated exposure (GHS)
Not available.

Teratogenicity
Not available.

Signs and symptoms of exposure
Gastrointestinal disturbance, blood disorders.

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Potential Health Effects
Inhalation - Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.
Skin - Acute toxicity. Toxic in contact with skin. May cause skin irritation.
Eyes - May cause eye irritation.
Ingestion - Acute toxicity. Toxic is swallowed.

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.
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: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
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.

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. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of as unused product.

Section 14. Transport Information

**DOT (US)**

UN number: 2811  
Class: 6.1  
Packing group: III  
Proper shipping name: Toxic solids, organic, n.o.s. (Milrinone)

**IATA**

UN number: 2811  
Class: 6.1  
Packing group: III  
Proper shipping name: Toxic solids, organic, n.o.s. (Milrinone)

**IMDG**

UN number: 2811  
Class: 6.1  
Packing group: III  
EMS NO: F-A, S-A  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Milrinone)

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.

**Massachusetts Right to Know Components**  
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right to Know Components**  
Milrinone  
CAS #: 78415-72-2  
Revision Date:

**New Jersey Right to Know Components**  
Milrinone  
CAS #: 78415-72-2  
Revision Date:

**California Prop 65 Components**  
This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

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.