1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Name: Ribavirin

Catalogue # R414475

Company: Toronto Research Chemicals
2 Brisbane Road
Toronto, ON M3J 2J8
CANADA

Telephone: +14166659696
FAX: +14166654439
Emergency#: +14166659696
Email: orders@trc-canada.com

2. HAZARDS IDENTIFICATION

WHMIS Classification
D2A Very Toxic Material Causing Other Toxic Effects
Teratogen

HMIS Classification
Health hazard: 0
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 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.
Ingestion May be harmful if swallowed.

GHS Classification
Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements
Signal word Danger
Hazard statement H360 May damage fertility or the unborn child.
Precautionary statements
P201 Obtain special instructions before use.
P308/P313 IF exposed or concerned: Get medical advice/ attention.

GHS Label Pictogram

3. COMPOSITION/INFORMATION ON INGREDIENTS

Toronto Research Chemicals - R414475
Molecular Formula: \( \text{C}_8\text{H}_{12}\text{N}_4\text{O}_5 \)
Molecular Weight: 244.20
CAS Registry #: 36791-04-5
EC#: 1-\( \beta \)-D-Ribofuranosyl-1H-1,2,4-triazole-3-carboxamide; Copegus; ICN 1229; MegaRibavirin; NSC 163039; Ravanex; Rebetol; Ribamide; Ribamidil; RibaspHERE; Ribavarin; Tribavirin; Vilona; Viramid; Virazole; Virizadole;
Synonyms:

4. FIRST AID MEASURES
General Advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

5. FIRE FIGHTING MEASURES
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES
Personal precautions
Use personal protective equipment. Avoid dust or aerosol formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE
Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust or aerosols. Provide appropriate exhaust ventilation at places where dust/aerosol is formed. Normal measures for preventative fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Store at -20°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Toronto Research Chemicals - R414475
Contains no substances with occupational exposure limit values.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Personal protective equipment**

**Respiratory protection**
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand 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.

**Eye protection**
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Specific engineering controls**
Use mechanical exhaust or laboratory fume hood to avoid exposure.

**10. STABILITY AND REACTIVITY**

**Chemical stability**
Stable under recommended storage conditions.

**Conditions to avoid**
no data available

**Materials to avoid**
Strong oxidizing agents.

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions: carbon oxides, nitrogen oxides.

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**
LD50 (oral - rat) 2700 mg/kg

**Irritation and corrosion**
no data available

**Sensitization**
no data available

**Reproductive toxicity/Teratogenicity**
Teratogenic in laboratory animal models.

**Additional Information**
RTECS: ZZ4250000

**Carcinogenicity**
IARC: To the best of our knowledge, this compound has not been identified as a possible or potential human carcinogen.

Toronto Research Chemicals - R414475
Potential health effects

<table>
<thead>
<tr>
<th>Type</th>
<th>Effect</th>
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</thead>
<tbody>
<tr>
<td>Inhalation</td>
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<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful if absorbed through skin. May cause skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>May cause eye irritation.</td>
</tr>
</tbody>
</table>

Signs and Symptoms of Exposure
Nausea, vomiting, diarrhea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Persistence and degradability</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data available</td>
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<table>
<thead>
<tr>
<th>Mobility in soil</th>
<th>PBT and vPvB assessment</th>
<th>Other adverse effects</th>
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</thead>
<tbody>
<tr>
<td>no data available</td>
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</table>

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)/IMDG/IATA
Not dangerous goods

15. REGULATORY INFORMATION

DSL Status
Product is not on the Canadian DSL or NDSL list.

WHMIS Classification
D2A Very Toxic Material Causing Other Toxic Effects Teratogen

16. OTHER INFORMATION

Further information
Copyright 2010 Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is not to be deemed as all-inclusive and is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.