1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Name: Adefovir-d4

Catalogue #: A247502

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
Not WHMIS Classified

HMIS Classification
Health Hazard: 1
Flammability: 0
Physical Hazards: 0

Potential health effects
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion: May be harmful if swallowed.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.

Not a dangerous substance according to GHS criteria.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Formula: C₃H₈D₄N₃O₅P

Molecular Weight: 277.21

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 under inert atmosphere.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

**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

Toronto Research Chemicals - A247502
Use mechanical exhaust or laboratory fumehood to avoid exposure.

**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.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
White solid

**Safety data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling point</td>
<td>N/A</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>N/A</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting point</td>
<td>&gt;300°C (dec.)</td>
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<tr>
<td>Flash point</td>
<td>N/A</td>
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<tr>
<td>Lower explosion limit</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Water solubility</td>
<td>N/A</td>
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</tbody>
</table>

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### 10. STABILITY AND REACTIVITY

**Chemical stability**
no data available

**Conditions to avoid**
Stable under recommended storage conditions.

**Materials to avoid**
Strong oxidizing agents.

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions: carbon oxides, nitrogen oxides (NOx), phosphorous oxides.

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### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**
no data available

**Irritation and corrosion**
no data available

**Sensitization**
no data available

**Reproductive toxicity**
no data available

**Additional Information**
RTECS: SZ6563500

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

**Potential health effects**

- **Inhalation**: May be harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion**: May be harmful if swallowed.
- **Skin**: May be harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: May cause eye irritation.

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12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Persistence and degradability</th>
<th>Bioaccumulative potential</th>
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</thead>
<tbody>
<tr>
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<td>no data available</td>
<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>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</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

<table>
<thead>
<tr>
<th>DOT (US)</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not dangerous goods</td>
<td>Not dangerous goods</td>
<td>Not dangerous goods</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

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

**WHMIS Classification**
Not WHMIS classified.

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.