

MATERIAL SAFETY DATA SHEET

AMP-Deoxyojirimycin

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Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108

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1. Product and Company Identification

Product Code: 10010332
Product Name: AMP-Deoxyojirimycin
Manufacturer Information
Company Name: Cayman Chemical Company
Emergency Contact: Cayman Chemical Company (800)364-9897
Information: Cayman Chemical Company (734)971-3335
Synonyms: 2R-(hydroxymethyl)-1-[5-(tricyclo[3.3.2.1^{3,7}]dec-1-ylmethoxy)pentyl]-3R,4R,5S-piperidinetriol; Adamantane-pentyl-dNM; AMP-dNM; N-(5-adamantane-1-yl-methoxy-pentyl)-Deoxyojirimycin;

2. Hazards Identification

Emergency Overview: Highly Flammable.
Target Organ(s): blood, central nervous system, eyes, liver, reproductive system, respiratory system, skin.
The hazards identified with this product are those associated with the solvent(s).
Route(s) of Entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection
Health Hazards (Acute and Chronic): Material may be irritating to the mucous membranes and upper respiratory tract.
May cause eye, skin, or respiratory system irritation.
May be harmful by inhalation, ingestion, or skin absorption.
The toxicological properties of this product have not been fully evaluated.
LD 50 / LC 50: Please refer to Section 11.
Signs and Symptoms Of Exposure: Irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic effects.

3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS # | Concentration | EC# | RTECS # |
|--------------------------------------|-------------|---------------|-----------|-----------|
| 1. AMP-Deoxyojirimycin | 216758-20-2 | 1.0 % | NA | NA |
| 2. Ethyl alcohol | 64-17-5 | 99.0 % | 200-578-6 | KQ6300000 |

4. First Aid Measures

Emergency and First Aid Procedures: If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
In case of skin contact, immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

5. Fire Fighting Measures

Flash Pt: 14.00 C Method Used: Closed Cup
Explosive Limits: LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C
Autoignition Pt: 363.00 C
Special Fire Fighting Procedures: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
Note: Flammable as diluted in ethanol.

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Unusual Fire and Explosion Hazards: Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
Container explosion may occur under fire conditions.
Emits toxic fumes under fire conditions.
Sensitive to static discharge.
Vapors can travel to a source of ignition and flash back.

Hazardous Combustion Products: No data available.

Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled: Avoid release into the environment.
Avoid breathing vapors and provide adequate ventilation.
Remove all sources of ignition.
As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

7. Handling and Storage

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.
Wash thoroughly after handling.

Precautions To Be Taken in Handling: Avoid breathing (dust, vapor, mist, gas).
Avoid prolonged or repeated exposure.
Keep away from sources of ignition.
Prevent the build up of electrostatic charge.

Precautions To Be Taken in Storing: Keep away from heat, sparks, and flame.
Keep tightly closed.
Store at correct temperature.

Other Precautions: Hygroscopic.

8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|-------------|------------------------------|-----------|--------------|
| 1. AMP-Deoxynojirimycin | 216758-20-2 | No data. | No data. | No data. |
| 2. Ethyl alcohol | 64-17-5 | 8H TWA:1000 ppm (1900 mg/m3) | 1000 ppm | No data. |

Protective Equipment Summary - Hazard Label Information: Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood

Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

Ventilation: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Work/Hygienic/Maintenance Practices: Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Wash thoroughly after handling.

9. Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid

Melting Point: No data.

Boiling Point: No data.

Autoignition Pt: 363.00 C

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Flash Pt: 14.00 C Method Used: Closed Cup
Explosive Limits: LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C
Specific Gravity (Water = 1): No data.
Bulk density: No data.
Vapor Pressure (vs. Air or mm Hg): 43 MM_HG at 20.0 C
Vapor Density (vs. Air = 1): No data.
Evaporation Rate (vs Butyl Acetate=1): No data.
Solubility in Water: No data.
Percent Volatile: No data.
Heat Value: No data.
Particle Size: No data.
Corrosion Rate: No data.
Formula: C22H39NO5
Molecular Weight: 397.60
pH: No data.
Appearance and Odor: No data available.

10. Stability and Reactivity

Stability: Unstable [] Stable [X]
Conditions To Avoid - Instability: heat, flames and sparks
Incompatibility - Materials To Avoid: alkali metals
ammonia
peroxides
strong oxidizing agents
Hazardous Decomposition Or Byproducts: carbon monoxide
carbon dioxide
Possibility of Hazardous Reactions: Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions: No data available.

11. Toxicological Information

: The toxicological effects of this product have not been thoroughly studied.

Chronic Toxicological Effects: Ethanol - Toxicity Data: Oral LD50 (rat): 7,060 mg/kg; Inhalation LC50 (rat): 10 h - 20,000 ppm;
Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit) 20mg (24h) moderate;
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.
See actual entry in RTECS for complete information.
Ethanol RTECS Number: KQ6300000

Carcinogenicity/Other Information: No data available.
Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

13. Disposal Considerations

Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

14. Transport Information

LAND TRANSPORT (US DOT)
DOT Proper Shipping Name Ethyl alcohol solution
DOT Hazard Class: 3
DOT Hazard Label: FLAMMABLE LIQUID
UN/NA Number: 1170

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|--|---|
| Packing Group: | II |
| LAND TRANSPORT (European ADR/RID) | |
| ADR/RID Proper Shipping Name | Ethyl alcohol solution |
| UN Number: | 1170 |
| Packing Group: | II |
| AIR TRANSPORT (ICAO/IATA) | |
| ICAO/IATA Proper Shipping Name | Ethyl alcohol solution |
| UN Number: | 1170 |
| Packing Group: | II |
| IATA Classification: | 3 |
| Additional Transport Information: | Transport in accordance with local, state, and federal regulations. |

15. Regulatory Information

European Community Hazard Symbol codes F: Highly Flammable

European Community Risk and Safety Phrases

- R11 - Highly flammable.
- S7 - Keep container tightly closed.
- S16 - Keep away from sources of ignition.

US EPA SARA Title III

| Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|-------------|---------------|------------|---------------|---------|
| 1. AMP-Deoxynojirimycin | 216758-20-2 | No | No | No | No |
| 2. Ethyl alcohol | 64-17-5 | No | No | No | No |

US EPA CAA, CWA, TSCA

| Hazardous Components (Chemical Name) | CAS # | EPA CAA | EPA CWA NPDES | EPA TSCA | HPV/LPV |
|--------------------------------------|-------------|-------------|---------------|-----------|---------|
| 1. AMP-Deoxynojirimycin | 216758-20-2 | HAP, ODC () | No | No | |
| 2. Ethyl alcohol | 64-17-5 | HAP, ODC () | No | Inventory | |

16. Other Information

Company Policy or Disclaimer

For research use only, not for human or veterinary clinical use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.