

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



### 1. Identification of the Substance/Mixture and of the Company/Undertaking

**Product Code:** 11164

**Product Name:** 5-Azacytidine

**Synonyms:** 4-amino-1-.beta.-D-ribofuranosyl-1,3,5-triazin-2(1H)-one; Antibiotic U 18496; 5-AzaC; Ladakamycin; Mylosar; NSC 102816; NSC 103-627; U 18496; WR 183027;

**Intended Use:** For research use only, not for human or veterinary use.

**Manufacturer Information**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### 2. Hazards Identification

GHS Classification	Placard	Key word	GHS Hazard
Acute Toxicity: Oral, Category 3	Skull and crossbones	Danger	Toxic if swallowed
Skin Corrosion/Irritation, Category 1B	Corrosive	Danger	Causes severe skin burns and eye damage
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Germ Cell Mutagenicity, Category 1B	Health hazard	Danger	May cause genetic defects
Carcinogenicity, Category 1B	Health hazard	Danger	May cause cancer
Toxic To Reproduction, Category 1B	Health hazard	Danger	May damage fertility or the unborn child
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness

**GHS Hazard Phrases:**

H301: Toxic if swallowed.  
 H314: Causes severe skin burns and eye damage.  
 H319: Causes serious eye irritation  
 H340: May cause genetic defects.  
 H350: May cause cancer.  
 H360: May damage fertility or the unborn child.  
 H335: May cause respiratory irritation.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.  
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P201: Obtain special instructions before use.  
 P202: Do not handle until all safety precautions have been read and understood.  
 P281: Use personal protective equipment as required.  
 P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**

P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 P330: Rinse mouth.  
 P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P363: Wash contaminated clothing before reuse.  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P310: Immediately call a POISON CENTER or doctor/physician.  
 P337+313: If eye irritation persists, get medical advice/attention.  
 P308+313: IF exposed or concerned: Get medical attention/advice.  
 P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

**GHS Storage and Disposal Phrases:** Please refer to Section 7 for Storage and Section 13 for Disposal information.

**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection

**Potential Health Effects (Acute and Chronic):** California Prop. 65 carcinogen.  
 Causes severe skin burns and eye damage.  
 Material is irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation or skin absorption.  
 May cause cancer.  
 May cause harm to the unborn child.  
 May cause heritable genetic damage.  
 May impair fertility.  
 Toxic if swallowed.

**Target Organs:** Bone marrow, Gastrointestinal System, Immune system, Liver.

**LD 50 / LC 50:** Please refer to Section 11.

**Signs and Symptoms Of Exposure:** Exposure may cause: damage to the liver, headache, nausea, vomiting.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. 5-Azacytidine	320-67-2	100.0 %	206-280-2	R25-34-36/37-45-46 -60-61	XZ3017500

### 4. First Aid Measures

**Emergency and First Aid Procedures:**

**In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**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.

**In Case of Eye Contact:** 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 Ingestion:** 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.

**Indication of any immediate medical attention and special treatment needed:** No data available.

### 5. Fire Fighting Measures

**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.

<b>Flammable Properties and Hazards:</b>	No data available.
<b>Flash Pt:</b>	No data.
<b>Autoignition Pt:</b>	No data available.
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Hazardous Combustion Products:</b>	No data available.
<b>Fire Fighting Instructions:</b>	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.

### 6. Accidental Release Measures

<b>Protective Precautions, Protective Equipment and Emergency Procedures:</b>	Avoid raising and breathing dust, and provide adequate ventilation. 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).
<b>Environmental Precautions:</b>	Take steps to avoid release into the environment, if safe to do so.
<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### 7. Handling and Storage

<b>Precautions To Be Taken in Handling:</b>	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
<b>Precautions To Be Taken in Storing:</b>	Keep container tightly closed. Store in accordance with information listed on the product insert.
<b>Hazard Label Information:</b>	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. 5-Azacytidine	320-67-2	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. 5-Azacytidine	320-67-2	No data.	No data.	No data.

<b>Protective Equipment Summary - Hazard Label Information:</b>	Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood
<b>Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>Eye Protection:</b>	Safety glasses
<b>Protective Gloves:</b>	Compatible chemical-resistant gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.
<b>Environmental Exposure Controls:</b>	No data available.

### 9. Physical and Chemical Properties

<b>Information on Basic Physical and Chemical Properties</b>	
<b>Physical States:</b>	<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid
<b>Appearance and Odor:</b>	A crystalline solid

<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Solubility Notes:</b>	~10 mg/ml in PBS (pH 7.2); ~30 mg/ml in EtOH, DMF & DMSO;
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.
<b>Other Information</b>	
<b>Percent Volatile:</b>	No data.
<b>Formula:</b>	C <sub>8</sub> H <sub>12</sub> N <sub>4</sub> O <sub>5</sub>
<b>Molecular Weight:</b>	244.20

### 10. Stability and Reactivity

<b>Reactivity:</b>	No data available.
<b>Stability:</b>	Unstable [ ]    Stable [ X ]
<b>Stability Note(s):</b>	Stable if stored in accordance with information listed on the product insert.
<b>Conditions To Avoid:</b>	No data available.
<b>Polymerization:</b>	Will occur [ ]    Will not occur [ X ]
<b>Incompatibility - Materials To Avoid:</b>	strong oxidizing agents
<b>Hazardous Decomposition Or Byproducts:</b>	carbon dioxide carbon monoxide nitrogen oxides

### 11. Toxicological Information

<b>Toxicological Information:</b>	The toxicological effects of this product have not been thoroughly studied.
	5-Azacytidine - Toxicity Data: Oral LD50 (mouse): 572 mg/kg; Oral LD50 (wild bird species): 100 mg/kg;
<b>Chronic Toxicological Effects:</b>	5-Azacytidine - Investigated as a mutagen, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances data is presented here. See actual entry in RTECS for complete information. 5-Azacytidine RTECS Number: XZ3017500
<b>Carcinogenicity/Other Information:</b>	California Prop. 65 carcinogen. IARC: Group 2A: Probably carcinogenic to humans (5-Azacytidine) NTP: Reasonably anticipated to be a human carcinogen (5-Azacytidine)

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. 5-Azacytidine	320-67-2	Possible	2A	n.a.	n.a.

### 12. Ecological Information

<b>General Ecological Information:</b>	Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
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### 13. Disposal Considerations

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

### 14. Transport Information

**Globally Harmonized System of Classification and Labelling**

Acute Toxicity: Oral, Category 3 - Danger! Toxic if swallowed  
 Skin Corrosion/Irritation, Category 1B - Danger! Causes severe skin burns and eye damage  
 Serious Eye Damage/Eye Irritation, Category 2A - Warning! Causes serious eye irritation  
 Germ Cell Mutagenicity, Category 1B - Danger! May cause genetic defects  
 Carcinogenicity, Category 1B - Danger! May cause cancer  
 Toxic To Reproduction, Category 1B - Danger! May damage fertility or the unborn child  
 Target Organ Systemic Toxicity (single exposure), Category 3 - Warning! May cause respiratory irritation, or may cause drowsiness and dizziness

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**European Community Hazard Symbol codes** T: Toxic; Carcinogenic Hazard: 2; Reproductive Hazard: 2; Mutagenic Hazard: 2

**European Community Risk and Safety Phrases**

- R25 - Toxic if swallowed.
- R34 - Causes burns.
- R36/37 - Irritating to eyes and respiratory system.
- R45 - May cause cancer.
- R46 - May cause heritable genetic damage.
- R60 - May impair fertility.
- R61 - May cause harm to the unborn child.
- S22 - Do not breathe dust.
- S24/25 - Avoid contact with skin and eyes.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. 5-Azacytidine	320-67-2	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. 5-Azacytidine	320-67-2	No	No	No	Yes

**Regulatory Information Statement:** This SDS was prepared in accordance with 29 CFR 1910.1200, Regulation (EC) No.1272/2008, and European Directive 67/548/EEC as amended.

### 16. Other Information

**Revision Date:** 09/11/2012

**Company Policy or Disclaimer**

For research use only, not for human or veterinary 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.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required