Material Safety Data Sheet

Pharmaceutical Resources Branch, DTP, DCT, NCI
Executive Plaza North, Room 818
6130 Executive Boulevard
Rockville, Maryland 20852

NSC 102816

Revision Date: September 30, 1991

SECTION I. MATERIAL IDENTIFICATION

Common Name: AZACYTIDINE **CAS:** 320-67-2
Chemical Name: s-Triazine-2-(1H)-one, 4-Amino-1-beta-D-ribofuranosyl-
Molecular Formula: $C_8H_{12}N_4O_5$

Other Designations: 5-Azacytidine, Lakamycin,
Chemical classification: Antitumor nucleoside

SECTION II. INGREDIENTS AND HAZARDS

Ingredient Name	Percent	Exposure Limits
AZACYTIDINE	100%	NOT YET ESTABLISHED

Toxicity Data:

Drug posses antimicrobial, cytotoxic, antineoplastic (Antimicrob Agents Chemo 619, 1964), abortive (Experientia 22:53, 1966), mutagenic (J Virol 2:1228, 1968), and immunosuppressive activities (Proc Soc Expt Biol Med 133:1232, 1970) in experimental systems.

Animal toxicities: Mouse LD50 (or): 572 mg/kg, LD50 (ip): 68 mg/kg, LD50 (iv): 229 mg/kg. Dog LD50 (iv) 7.2 mg/kg.

RTECS Number: XZ3017500

Azacytidine is currently undergoing clinical evaluation in trials sponsored by the National Cancer Institute. Data on 806 patients reported to NCI's Investigational Drug Branch yield an incidence rate of adverse effects following intravenous administration of: nausea and vomiting (73%), diarrhea (53%), leukopenia - <1500/mm3 (34%), thrombocytopenia - >100,000/mm3 (17%), abnormal liver function test (7%), fever (6%), stomatitis (5.7%), anemia - >3 g% drop (4%), rash (2%).

Carcinogenic review: Animal positive. NCI carcinogenesis bioassay: mouse - positive, rat - negative. No known chemical antidote.

IARC = not classifiable as human carcinogen (Group 3); human evidence - no adequate data, animal evidence - limited.

SECTION III. PHYSICAL DATA

Appearance & Odor: White powder

MP: 228 - 230°C (with decomposition) **BP:** UNKNOWN
Molecular Weight: 244.2
Solubility (%): H_2O (14 mg/ml), DMSO (52 mg/ml)

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point: UNKNOWN **Autoignition Temperature:** UNKNOWN
Flammability Limits: LEL %: UNKNOWN UEL %: UNKNOWN

Extinguishing Media: Use materials appropriate to the surrounding fire.

Unusual Fire or Explosion Hazards: No unusual fire or explosion hazard is known to exist.

Special Fire-fighting Procedures: Evacuate personnel to a safe area. Firefighters should use self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Toxic fumes of carbon monoxide, carbon dioxide, and nitrous oxides may be produced under conditions of fire. Products of combustion, however, are unknown and therefore as a precaution they should be assumed to be hazardous.

SECTION V. REACTIVITY DATA

Compound Stability: Material is stable under most conditions, however, it is unstable in water - the rate and mode of decomposition is a function of pH of solution. Hazardous polymerization is not known to occur.

Chemical Incompatibilities: Strong oxidizing agents. May discolor on exposure to light.

Conditions To Avoid: No conditions contributing to instability are known to exist.

Hazardous Decomposition Products: Since products of decomposition are unknown, as a precaution, they should be assumed to be hazardous.

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SECTION VI. HEALTH HAZARD INFORMATION

Summary of Risks: Azacytidine may be hazardous if absorbed via inhalation, ingestion or skin contact. May cause irritation. May cause cancer.

Primary Entry Routes: Inhalation, ingestion, and skin and/or eye contact.

Target Organs: UNKNOWN
Signs & Symptoms of Overexposure: UNKNOWN

Acute Effects: UNKNOWN
Chronic Effects: UNKNOWN

Medical Conditions Which May Be Aggravated By Contact: UNKNOWN

For Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes. Consult an ophthalmologist.

For Skin Contact: Remove contaminated clothing. Wash skin with plenty of soap and water. Consult a physician.

For Inhalation: Remove victim promptly to clean air. If victim is not breathing, administer artificial respiration. Consult a physician.

For Ingestion: Consult a physician.

In the event of an accident involving the handling of this agent, consultation with a physician experienced with cancer chemotherapy is suggested.

SECTION VII. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill/Leak Cleanup Procedures: Evacuate area. Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard after use. Sweep up compound, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after compound pick-up is complete. Dispose of contaminated clean-up materials properly.

Waste Management/Disposal: Observe all local, state, and federal regulations concerning the disposal of hazardous material or waste. Material should be ignited in the presence of sodium carbonate and slaked lime (CaOH). The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an after burner and scrubber.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Personal Protective Equipment:

Goggles: Wear chemical safety goggles when handling Azacytidine.
Gloves: Wear rubber or latex gloves when handling Azacytidine.
Respirator: Wear NIOSH-MSHA approved respirator.
Other: Wear protective laboratory coat or apron.

Workplace Considerations:

Ventilation: Laboratory operations should be conducted in a chemical fume hood, glove box, or ventilated cabinet equipped with mechanical exhaust to the outside.

Safety Stations: Safety shower and eye bath should be accessible.

The personal protective equipment listed above should be worn at all times when handling Azacytidine. Avoid contact and inhalation. Avoid prolonged or repeated exposure. Wash thoroughly after handling.

SECTION IX. SPECIAL PRECAUTIONS

Storage Segregation: Store at 4°C over drierite.

Other Precautions: The user should be made aware that Azacytidine is an investigational substance. Hazards associated with exposure to Azacytidine may not yet be known. This material should be handled only by those trained in the handling of potentially hazardous material.

The information in this document was compiled primarily from secondary sources. The information is believed to be correct and accurate, but no warranty is expressed or implied.