

Mitomycin C

Cat#: orb422198 (MSDS)

Section 1: Chemical Product and Company Identification

Product Name: Mitomycin c

CAS#: 50-07-7

RTECS: CN0700000

TSCA: TSCA 8(b) inventory: Mitomycin c

CI#: Not available.

Synonym: 7-Amino-9-alpha-methoxymitosane; Ametycin; Ametycine; Mitocin-C; Mitomycin; Mitomycin-C; Mitomycinum; Mutamycin; Mytomycin

Chemical Name:

Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methyl-,carbamate (ester)

Chemical Formula: C₁₅H₁₈N₄O₅

Section 2: Composition and Information on Ingredients

Composition:

Name CAS # % by Weight

Mitomycin c 50-07-7 100

Toxicological Data on Ingredients: Mitomycin c: ORAL (LD50): Acute: 30 mg/kg [Rat]. 23 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC.

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to blood, kidneys, lungs, liver, bone marrow.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of heat.

Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: As with most organic solids, fire is possible at elevated temperatures

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill: Poisonous solid.

Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Sensitive to light. Store in light-resistant containers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Powdered solid. Crystalline powder.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 334.33 g/mole

Color: Bluish-grey Blue-Violet.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: >360°C (680°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in water; $\log(\text{oil/water}) = -0.4$

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, acetone.

Solubility:

Soluble in cold water, methanol, acetone.

Partially soluble in diethyl ether.

Soluble in Butyl Acetate, Cyclohexanone.

Slightly soluble in Benzene, Carbon Tetrachloride.

Practically insoluble in Petroleum Ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Incompatible with oxidizing agents, strong bases, strong acids.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 23 mg/kg [Mouse].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC.

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

May cause damage to the following organs: blood, kidneys, lungs, liver, bone marrow.

Other Toxic Effects on Humans:

Very hazardous in case of ingestion.

Hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May cause adverse reproductive effects and birth defects (teratogenic). Causes sperm abnormalities in animal.

May affect genetic material (mutagenic).

May cause cancer

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Systemic poisoning can occur from inhalation, and oral exposure. However, limited data are available. It is used as a drug to treat cancer, specifically malignant tumors. The clinical (systemic) effects reported are those noted during therapeutic (intravenous) use of Mitomycin., including high dose therapy.

Skin: Causes skin irritation.

Eyes: Causes eye irritation. May cause chemical conjunctivitis.

Inhalation: Causes respiratory tract irritation. May cause pulmonary fibrosis and permanent damage. Can produce delayed pulmonary edema. May cause liver damage.

Ingestion: May be fatal if swallowed. May cause gastrointestinal tract irritation with stomatitis, nausea, anorexia, vomiting (sometimes bloody), hypermotility, and diarrhea. May cause liver and kidney damage. May affect the blood and cause bone marrow depression. May affect behavior/central nervous system (confusion, dizziness, drowsiness, fatigue, lethargy, weakness). It may affect the heart (congestive heart failure). May cause blurred vision. It also has the potential for pulmonary toxicity and cause pneumonitis, alveolitis and pulmonary edema.

Other symptoms may include black, tarry stools, blood in the urine or stools, difficulty urinating; unusual bleeding or bruising, pinpoint red spots on skin, fever or chills, lower back or side pain; rash, itching.

Chronic Potential Health Effects:

Ingestion/Inhalation: Prolonged or repeated ingestion or inhalation may cause liver damage, kidney damage, anorexia, weight loss, vomiting, mild diarrhea, skin rash, alopecia, convulsions, kidney injury, pulmonary toxicity (pneumonitis, alveolitis, pulmonary fibrosis, dyspnea, rales, hemoptysis, cough). May affect the liver, behavior/central nervous system with symptoms similar to acute ingestion. May cause cardiotoxicity. It may also cause damage to the blood/bone marrow (causing a drop in white blood cells, red blood cells, and platelets, anemia).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Toxic Solid, organic, n.o.s. (Mitomycin) UNNA: 2811 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Mitomycin c

California prop. 65 (no significant risk level): Mitomycin c: 9e-005 mg/day (value)

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Mitomycin c

Connecticut hazardous material survey.: Mitomycin c

Illinois toxic substances disclosure to employee act: Mitomycin c

Illinois chemical safety act: Mitomycin c

New York release reporting list: Mitomycin c

Pennsylvania RTK: Mitomycin c

Florida: Mitomycin c

Minnesota: Mitomycin c

Massachusetts RTK: Mitomycin c

Massachusetts spill list: Mitomycin c

New Jersey: Mitomycin c

New Jersey spill list: Mitomycin c

Louisiana RTK reporting list: Mitomycin c

California Director's List of Hazardous Substances: Mitomycin c

TSCA 8(b) inventory: Mitomycin c

TSCA 5(a)2 final significant rules: Mitomycin c

TSCA 8(a) IUR: Mitomycin c

TSCA 12(b) annual export notification: Mitomycin c

SARA 302/304/311/312 extremely hazardous substances: Mitomycin c

CERCLA: Hazardous substances.: Mitomycin c: 10 lbs. (4.536 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):

CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).

CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):

R25- Toxic if swallowed.

R36/38- Irritating to eyes and skin.

R40- Possible risks of irreversible effects.

S1/2- Keep locked up and out of the reach of children.

S36/37- Wear suitable protective clothing and gloves.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):**Health Hazard: 3****Fire Hazard: 1****Reactivity: 0****Personal Protection: E****National Fire Protection Association (U.S.A.):****Health: 3****Flammability: 1****Reactivity: 0****Specific hazard:****Protective Equipment:**

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.