

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>Corrosive to eyes and skin on contact. Toxic compound, do not ingest or inhale. Avoid all contact with this material. CARCINOGEN. MINIMIZE EXPOSURE. Contact may cause photosensitization.</p>	

Section I. Chemical Product and Company Identification

Chemical Name	5-Fluorouracil		
Catalog Number	F0151	Supplier	TGI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	5-Fluoropyrimidine-2,4-dione		
Chemical Formula	C ₄ H ₃ FN ₂ O ₂		
CAS Number	51-21-8	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
5-Fluorouracil	51-21-8	Min. 99.0 (HPLC,T)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD ₅₀ (oral) 230 mg/kg Mouse LD ₅₀ (oral) 115 mg/kg Rat LD ₅₀ (intraperitoneal) 70 mg/kg Rat LD ₅₀ (subcutaneous) 217 mg/kg Rat LD ₅₀ (intravenous) 245 mg/kg

Section III. Hazards Identification

Acute Health Effects	<p>Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested.</p> <p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.</p> <p>May cause photosensitivity. Exposure to light can result in allergic reactions resulting in dermatologic lesions, which can vary from sunburn-like responses to edematous, vesiculated lesions or bullae.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p>CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic effects. Mouse TDLo Intraperitoneal 1500 mg/kg/50 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Blood - Tumors DEVELOPMENTAL TOXICITY: Reproductive Effects. Rat TDLo Intraperitoneal 10 mg/kg, female 9 days of pregnancy TOXIC Effects Specific Developmental Abnormalities - Eye, ear Specific Developmental Abnormalities - Musculoskeletal system Rat TDLo Intraperitoneal 15 mg/kg, female 9 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantation mortality Effects on Embryo or Fetus - Fetal Death Specific Developmental Abnormalities - Other developmental abnormalities Rat TDLo Intraperitoneal 20 mg/kg, female 9 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantation mortality Effects on Embryo or Fetus - Fetotoxicity Specific Developmental Abnormalities - Other developmental abnormalities</p>

Section IV. 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. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.

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Emergency phone number (800) 424-9300

Ingestion

DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂), halogenated compounds. WARNING: Highly toxic HF gas is produced during combustion.		
Fire Hazards	Not available.		
Explosion Hazards	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. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Corrosive material. Toxic material. Carcinogenic material. Material may cause photosensitization. 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 sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	CORROSIVE. TOXIC. CARCINOGEN. MAY CAUSE PHOTSENSITIZATION. Keep locked up. Keep container dry. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe dust. Never add water to this product. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids.
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Section VIII. 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	Face shield. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (White powder.)	Solubility	Soluble in hot water. Very Slightly soluble in alcohol, water. Insoluble in chloroform, benzene, ether.
Specific Gravity	Not available.		
Molecular Weight	130.08	Partition Coefficient	Log P _{ow} : -0.97
Boiling Point	Not available.	Vapor Pressure	Not applicable.
Melting Point	280 to 282 °C (536 to 539.6 °F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, strong acids.

Section XI. Toxicological Information

RTECS Number	YR0350000
Routes of Exposure	Eye Contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LD ₅₀ (oral) 230 mg/kg Mouse LD ₅₀ (oral) 115 mg/kg Rat LD ₅₀ (intraperitoneal) 70 mg/kg Rat LD ₅₀ (subcutaneous) 217 mg/kg Rat LD ₅₀ (intravenous) 245 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic effects. Mouse TDLo Intraperitoneal 1500 mg/kg/50 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Blood - Tumors DEVELOPMENTAL TOXICITY: Reproductive Effects. Rat TDLo Intraperitoneal 10 mg/kg, female 9 days of prgnancy TOXIC Effects Specific Developmental Abnormalities - Eye, ear Specific Developmental Abnormalities - Musculoskeletal system Rat TDLo Intraperitoneal 15 mg/kg, female 9 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantation mortality Effects on Embryo or Ftus - Fetal Death Specific Developmental Abnormalities - Other developmental abnormalities Rat TDLo Intraperitoneal 20 mg/kg, female 9 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantation mortality Effects on Embryo or Fetus - Fetotoxicity Specific Developmental Abnormalities - Other developmental abnormalities
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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Section XIV. Transport Information

DOT Classification	DOT Class 8: Corrosive material. DOT Class 6.1: Toxic material.
PIN Number	UN2923
Proper Shipping Name	Corrosive solid, toxic, n.o.s.
Packing Group (PG)	III
DOT Pictograms	 

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive solid. On NDSL
EINECS Number (EEC)	200-085-6
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns.
Japanese Regulatory Data	ENCS No. 9-1180

Section XVI. Other Information

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Notice to Reader

TCl laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.