

5-Fluorouracil (5-FU) SDS | MSDS

1.PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- **Product Name:** 5-Fluorouracil (5-FU)
- **Catalog Number:** S1209
- **CAS Number:** 51-21-8
- **IUPAC Name:** 5-fluoro-2,4(1H,3H)-pyrimidinedione

Relevant identified uses and uses advised against

- **Identified uses:** For research and development use only; laboratory chemicals; manufacture of substances.
- **Uses advised against:** Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- **Company :** Selleck Chemicals
- **TollFree :** +1 877 796-6397
- **Tel :** +1 832 582-8158
- **Fax :** +1 832 582-8590

Emergency telephone number

- **Emergency phone #:** +1 832 582-8158

2. HAZARDS IDENTIFICATION

The product is classified as hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Classification:

- Acute toxicity (Oral): Category 3
- Carcinogenicity: Category 2

Signal Word: Danger

Pictogram:



Hazard Statements:

- H301: Toxic if swallowed.
- H351: Suspected of causing cancer.

Precautionary Statements:

- **Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/ protective clothing/ eye protection/ face protection.
- **Response:** IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. IF exposed or concerned: Get medical advice/ attention.
- **Storage:** Store locked up.
- **Disposal:** Dispose of contents/ container to an approved waste disposal plant.

Other Hazards: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product is a substance.

- **Chemical Name:** 5-fluoro-2,4(1H,3H)-pyrimidinedione
- **CAS-No.:** 51-21-8
- **Concentration (% w/w):** ≥ 90 - ≤ 100
- **Trade Secret:** Actual concentration is withheld as a trade secret.

4. FIRST AID MEASURES

- **General Advice:** Show this safety data sheet to the doctor in attendance.
- **If Inhaled:** Move to fresh air. Call a physician.
- **In Case of Skin Contact:** Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.
- **In Case of Eye Contact:** Rinse out with plenty of water. Remove contact lenses. Call an ophthalmologist.
- **If Swallowed:** Give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.
- **Most Important Symptoms and Effects:** The most important known symptoms and effects are described in the labelling (Section 2) and/or in Section 11.
- **Protection of First-Aiders:** Refer to Section 8 for personal protection.
- **Notes to Physician:** N/A.

5. FIREFIGHTING MEASURES

- **Suitable Extinguishing Media:** Water, Foam, Carbon dioxide (CO₂), Dry powder.
- **Unsuitable Extinguishing Media:** No limitations of extinguishing agents are given for this substance.
- **Specific Hazards:** Combustible. Development of hazardous combustion gases or vapours (Carbon oxides, Nitrogen oxides, Hydrogen fluoride) is possible in the event of fire.
- **Further Information:** Suppress gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
- **Special Protective Equipment for Firefighters:** Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

6. ACCIDENTAL RELEASE MEASURES

- **Personal Precautions:** Avoid inhalation of powder. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, and consult an expert. For personal protection, see Section 8.
- **Environmental Precautions:** Do not let product enter drains.
- **Methods and Materials for Containment and Cleaning Up:** Cover drains. Collect, bind, and pump off spills. Take up carefully. Avoid generation of powder. Clean up affected area. Dispose of properly.

7. HANDLING AND STORAGE

- **Advice on Safe Handling:** Work under a hood. Do not inhale substance/mixture. Refer to Section 2.2 for precautions.
- **Storage Conditions:** Tightly closed and dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.
- **Storage Class:** 6.1C (Combustible, acute toxic Cat.3 / toxic compounds or compounds causing chronic effects).
- **Recommended Storage Temperature:** See product label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Control Parameters:** Contains no substances with occupational exposure limit values.
- **Engineering Measures:** N/A.
- **Personal Protective Equipment:**
 - **Respiratory Protection:** Required when powder is generated. Recommended filter type: P3 (based on DIN EN 143, DIN 14387).
 - **Hand Protection:** Nitrile rubber gloves (Full and splash contact). Breakthrough time: 480 min; Glove thickness: 0.11 mm.
 - **Eye Protection:** Safety glasses tested and approved under government standards such as NIOSH (US) or EN 166 (EU).
 - **Skin and Body Protection:** Protective clothing.
 - **Hygiene Measures:** Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** powder
- **Color:** N/A
- **Odor:** N/A
- **Odor Threshold:** N/A
- **pH:** N/A
- **Melting Point/Range:** 540 - 547 °F / 282 - 286 °C (decomposition)
- **Boiling Point/Range:** 374 °F / 190 °C (at 0.13 hPa)
- **Flash Point:** N/A
- **Evaporation Rate:** N/A

- **Flammability (solid, gas):** N/A
- **Upper/Lower Explosion Limit:** N/A
- **Vapor Pressure:** N/A
- **Relative Vapour Density:** N/A
- **Relative Density:** N/A
- **Water Solubility:** N/A
- **Partition Coefficient (n-octanol/water):** log Pow: -0.424
- **Autoignition Temperature:** N/A
- **Decomposition Temperature:** N/A
- **Viscosity:** N/A
- **Explosive Properties:** Not classified as explosive.
- **Oxidizing Properties:** None
- **Molecular Weight:** 130.08 g/mol
- **Particle Size:** N/A

10. STABILITY AND REACTIVITY

- **Reactivity:** Flammable organic substances in correspondingly fine distribution may have a powder explosion potential when whirled up.
- **Chemical Stability:** Chemically stable under standard ambient conditions (room temperature).
- **Possibility of Hazardous Reactions:** Violent reactions possible with strong oxidizing agents and bases.
- **Conditions to Avoid:** No information available.
- **Incompatible Materials:** No information available.
- **Hazardous Decomposition Products:** In the event of fire, see Section 5.

11. TOXICOLOGICAL INFORMATION

- **Acute Toxicity:** LD50 Oral - Rat - 230 mg/kg. Symptoms include irritations of mucous membranes in the mouth, pharynx, oesophagus, and gastrointestinal tract.
- **Skin Corrosion/Irritation:** Slight irritation.
- **Serious Eye Damage/Irritation:** N/A.
- **Respiratory or Skin Sensitization:** N/A.
- **Germ Cell Mutagenicity:** Positive results in cytogenetic analysis (Hamster, intraperitoneal), sperm tests (Mouse, intravenous), and other mutation test systems (Mouse, oral).
- **Carcinogenicity:** Suspected of causing cancer. No components present at $\geq 0.1\%$ are identified as probable, possible, or confirmed human carcinogens by IARC, NTP, or OSHA.
- **Reproductive Toxicity:** N/A.
- **STOT - Single Exposure:** N/A.
- **STOT - Repeated Exposure:** N/A.
- **Aspiration Hazard:** N/A.
- **Additional Information:** Symptoms include nausea, vomiting, anorexia, diarrhoea, stomatitis, fever, weakness, headache, depression, skin irritation, erythema, bone marrow depression, bleeding syndrome, renal impairment, and death. Systemic effects include changes in the blood count and stomach/intestinal

disorders. This is a therapeutically used substance and should be handled with particular care.

12. ECOLOGICAL INFORMATION

- **Toxicity:** Toxicity to fish: LC50 (Oncorhynchus mykiss) > 1,000 mg/l (48 h).
- **Persistence and Degradability:** Not readily biodegradable (0% biodegradation over 21 days, OECD 301C). Not readily eliminated from water (0% biodegradation over 14 days, OECD 302B).
- **Bioaccumulative Potential:** log Pow: -0.424.
- **Mobility in Soil:** N/A.
- **Other Adverse Effects:** Discharge into the environment must be avoided.

13. DISPOSAL CONSIDERATIONS

- **Waste Treatment Methods:** Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers. Do not mix with other waste. Handle uncleaned containers like the product itself.

14. TRANSPORT INFORMATION

- **DOT (49 CFR):**
 - UN number: UN 2811
 - Proper shipping name: Toxic powder, organic, n.o.s. (5-fluorouracil)
 - Class: 6.1
 - Packing group: III
 - Labels: Division 6.1 - Toxic substances
 - ERG Code: 154
 - Marine pollutant: no
- **IMDG:**
 - UN number: UN 2811
 - Proper shipping name: TOXIC POWDER, ORGANIC, N.O.S. (5-fluorouracil)
 - Class: 6.1
 - Packing group: III
 - Labels: 6.1
 - EmS Code: F-A, S-A
 - Marine pollutant: no
- **IATA:**
 - UN number: UN 2811
 - Proper shipping name: Toxic powder, organic, n.o.s. (5-fluorouracil)
 - Class: 6.1
 - Packing group: III
 - Labels: Division 6.1 - Toxic substances

15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components: 5-fluoro-2,4(1H,3H)-pyrimidinedione; CAS-No.: 51-21-8; Component RQ (lbs): 500;
Calculated product RQ (lbs): 500

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components: 5-fluoro-2,4(1H,3H)-pyrimidinedione; CAS-No.: 51-21-8; Component TPQ (lbs): 10000

Components: 5-fluoro-2,4(1H,3H)-pyrimidinedione; CAS-No.: 51-21-8; Component TPQ (lbs): 500*

*: powder in the molten or powder form (particles < 100 microns), in solution, or meeting the NFPA reactivity criteria

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313

16. OTHER INFORMATION

Revision Date: 2026/07/10

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.