

# Fludarabine SDS | MSDS

## 1.PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

- **Product Name:** Fludarabine
- **Catalog Number:** S1491
- **CAS Number:** 21679-14-1
- **IUPAC Name:**  
(2R,3S,4S,5R)-2-(6-amino-2-fluoro-9H-purin-9-yl)-5-(hydroxymethyl)-tetrahydrofuran-3,4-diol

### 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

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

- Germ cell mutagenicity (Category 2), H341
- Reproductive toxicity (Category 2), H361

### 2.2 GHS Label elements, including precautionary statements

**Signal Word:** Warning

#### Hazard Statements:

- H341: Suspected of causing genetic defects.
- H361: Suspected of damaging fertility or the unborn child.

#### Precautionary Statements:

- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P308 + P313: IF exposed or concerned: Get medical advice/ attention.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

## 3. Composition/information on ingredients

### 3.2 Mixtures

**Synonyms:** 2-FLUOROADENINE 9-B-D-ARABINOFURANOSIDE

**Formula:** (2R,3S,4S,5R)-2-(6-amino-2-fluoro-9H-purin-9-yl)-5-(hydroxymethyl)-tetrahydrofuran-3,4-diol

**Molecular weight:** 285.23 g/mol

#### Components:

- **Fludarabine** (CAS-No. 21679-14-1): Concentration  $\geq 90$  -  $\leq 100$  %. Classification: Muta. 2; Repr. 2; H341, H361.
- **Methanol** (CAS-No. 67-56-1): Concentration  $\geq 1$  -  $< 3$  %. Classification: Flam. powder 2; Acute Tox. 3; STOT SE 1; H225, H301, H331, H311, H370. Concentration limits:  $\geq 10$  %: STOT SE 1, H370;  $3 - < 10$  %: STOT SE 2, H371.

## 4. First aid measures

### 4.1 Description of first-aid measures

- **General advice:** Show this safety data sheet to the doctor in attendance.
- **If inhaled:** After inhalation, move to fresh air. Call a physician.
- **In case of skin contact:** Take off contaminated clothing immediately. Rinse skin with water/shower. Consult a physician.
- **In case of eye contact:** After eye contact, rinse out with plenty of water. Remove contact lenses. Call an ophthalmologist.
- **If swallowed:** Immediately make the victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

## **4.3 Indication of any immediate medical attention and special treatment needed**

N/A.

## **5. Firefighting measures**

### **5.1 Extinguishing media**

- **Suitable extinguishing media:** Water, Foam, Carbon dioxide (CO<sub>2</sub>), powder.
- **Unsuitable extinguishing media:** No limitations of extinguishing agents are given for this substance/mixture.

### **5.2 Special hazards arising from the substance or mixture**

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Hydrogen fluoride. Combustible. Development of hazardous combustion gases or vapours is possible in the event of fire.

### **5.3 Advice for firefighters**

Stay in the danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **5.4 Further information**

Suppress gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## **6. Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: 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.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of powder.

## 6.4 Reference to other sections

For disposal see section 13.

## 7. Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions:** Tightly closed. Dry. Keep locked up or in an area accessible only to qualified or authorized persons.

**Recommended storage temperature:** 2 - 8 °C.

**Storage class (TRGS 510):** 11: Combustible powder.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Methanol (CAS-No. 67-56-1):**

- TWA: 200 ppm (ACGIH, NIOSH, OSHA Z-1, California PEL)
- STEL: 250 ppm (ACGIH, California PEL)
- ST: 250 ppm (NIOSH)
- C: 1,000 ppm (California PEL)
- Biological Occupational Exposure Limits: 15 mg/l Methanol in urine (End of shift).

### 8.2 Exposure controls

- **Appropriate engineering controls:** Change contaminated clothing. Preventive skin protection is recommended. Wash hands after working with the substance.
- **Eye/face protection:** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Safety glasses.
- **Skin protection:** Handle with impervious nitrile rubber gloves (minimum layer thickness: 0.11 mm; break through time: 480 min).
- **Body Protection:** Protective clothing.
- **Respiratory protection:** Required when powder is generated. Recommended Filter type: Filter type P3.
- **Control of environmental exposure:** Do not let product enter drains.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- a) **Appearance:** Form: powder; Color: white
- b) **Odor:** N/A
- c) **Odor Threshold:** N/A
- d) **pH:** N/A
- e) **Melting point/freezing point:** N/A
- f) **Initial boiling point and boiling range:** N/A
- g) **Flash point:** N/A
- h) **Evaporation rate:** N/A
- i) **Flammability (powder, gas):** N/A
- j) **Upper/lower flammability or explosive limits:** N/A
- k) **Vapor pressure:** N/A
- l) **Vapor density:** N/A
- m) **Density:** N/A; Relative density: N/A
- n) **Water solubility:** N/A
- o) **Partition coefficient: n-octanol/water:** log Pow: -0.790
- p) **Autoignition temperature:** N/A
- q) **Decomposition temperature:** N/A
- r) **Viscosity:** N/A
- s) **Explosive properties:** N/A
- t) **Oxidizing properties:** N/A

### 9.2 Other safety information

N/A.

## 10. Stability and reactivity

### 10.1 Reactivity

Flammable organic substances and mixtures in fine distribution may generally have a powder explosion potential when whirled up.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

N/A.

## 10.4 Conditions to avoid

No information available.

## 10.5 Incompatible materials

Strong oxidizing agents.

## 10.6 Hazardous decomposition products

In the event of fire: see section 5.

# 11. Toxicological information

## 11.1 Information on toxicological effects

### Mixture:

- **Acute toxicity:** Oral ATE > 5,000 mg/kg; Inhalation ATE (4 h) > 200 mg/l (powder); Dermal ATE > 5,000 mg/kg.
- **Skin/Eye:** N/A.
- **Germ cell mutagenicity:** Evidence of genetic defects.
- **Carcinogenicity:** No ingredient present at levels  $\geq 0.1\%$  is identified as a known or anticipated carcinogen by IARC, NTP, or OSHA.
- **Reproductive toxicity:** Suspected of damaging the unborn child and fertility.
- **Additional Information:** RTECS: AU6207000. Based on human evidence, may cause central nervous system effects and breathing difficulties.

### Components - Fludarabine:

- **Germ cell mutagenicity:** Suspected of causing genetic defects.
- **Reproductive toxicity:** Suspected of damaging the unborn child.

### Components - Methanol:

- **Acute toxicity:** Oral ATE 100.1 mg/kg (Nausea, Vomiting); Inhalation ATE (4 h) 3.1 mg/l (powder) (Respiratory tract irritation); Dermal ATE 300.1 mg/kg.
- **Sensitisation:** Negative (OECD 406).
- **STOT - single exposure:** Causes damage to organs (Eyes, Central nervous system).

# 12. Ecological information

## 12.1 Toxicity

Mixture: N/A.

**Components - Methanol:**

- **Fish:** LC50 - *Lepomis macrochirus* (Bluegill) - 15,400.0 mg/l - 96 h.
- **Daphnia:** EC50 - *Daphnia magna* (Water flea) - 18,260 mg/l - 96 h.
- **Algae:** ErC50 - *Pseudokirchneriella subcapitata* - ca. 22,000.0 mg/l - 96 h.
- **Bacteria:** IC50 - activated sludge - > 1,000 mg/l - 3 h.

## **12.2 Persistence and degradability**

N/A.

## **12.3 Bioaccumulative potential**

N/A.

## **12.4 Mobility in soil**

N/A.

## **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

## **12.6 Endocrine disrupting properties**

N/A.

###

## **16. OTHER INFORMATION**

**Revision Date:** 2026/07/29

**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.