

## Material Safety Data Sheet

Version 4.4

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Folinic acid calcium salt hydrate

Product Number : F7878  
Brand : Fluka

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

OSHA Hazards  
Target Organ Effect, Irritant, Carcinogen

## Target Organs

Blood, Liver, Nerves., Heart

## GHS Classification

Skin irritation (Category 2)  
Eye irritation (Category 2A)  
Respiratory sensitization (Category 1)  
Skin sensitization (Category 1)  
Specific target organ toxicity - single exposure (Category 3)

## GHS Label elements, including precautionary statements

## Pictogram



## Signal word

Danger

## Hazard statement(s)

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.

## Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P280 Wear protective gloves.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

## HMIS Classification

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

## NFPA Rating

Health hazard: 2  
Fire: 0  
Reactivity Hazard: 0

## Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	Calcium folinate Citrovorum factorcalcium salt 5-Formyl-5,6,7,8-tetrahydrofolic acidcalcium salt Leucovorin calcium salt 5-Formyl-5,6,7,8-tetrahydropteroyl-L-glutamic acidcalcium salt 5-HCO-H4PteGlu
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Formula	<chem>C20H21CaN7O7 · xH2O</chem>
Molecular Weight	511.50 g/mol

Component	Concentration
<b>Folinic acid calcium salt hydrate</b>	
CAS-No. 6035-45-6	60 - 100 %

  

Component	Concentration
<b>Ethanol</b>	
CAS-No. 64-17-5 EC-No. 200-578-6 Index-No. 603-002-00-5	1 - 5 %

## 4. FIRST AID MEASURES

## General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

## If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

## In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

## In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

## If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIREFIGHTING MEASURES

## Conditions of flammability

Not flammable or combustible.

## Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Calcium oxide

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Do not let product enter drains.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis	
Ethanol	64-17-5	TWA	1,000 ppm	USA, ACGIH Threshold Limit Values (TLV)	
Remarks	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans				
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		The value in mg/m <sup>3</sup> is approximate.			
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA, NIOSH Recommended Exposure Limits	

**Personal protective equipment****Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the

concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	solid
Colour	no data available

**Safety data**

pH	no data available
Melting point/freezing point	Melting point/range: 240 - 250 °C (464 - 482 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Calcium oxide  
Other decomposition products - no data available

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity****Oral LD50**

no data available (Folinic acid calcium salt hydrate)

**Inhalation LC50**

no data available (Folinic acid calcium salt hydrate)

**Dermal LD50**

no data available (Folinic acid calcium salt hydrate)

**Other information on acute toxicity**

no data available (Folinic acid calcium salt hydrate)

**Skin corrosion/irritation**

no data available (Folinic acid calcium salt hydrate)

**Serious eye damage/eye irritation**

no data available (Folinic acid calcium salt hydrate)

**Respiratory or skin sensitization**

May produce an allergic reaction. (Folinic acid calcium salt hydrate)

May cause allergic respiratory and skin reactions (Folinic acid calcium salt hydrate)

**Germ cell mutagenicity**

no data available (Folinic acid calcium salt hydrate)  
(Folinic acid calcium salt hydrate)

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

(Folinic acid calcium salt hydrate)

no data available (Folinic acid calcium salt hydrate)

**Teratogenicity**

no data available (Folinic acid calcium salt hydrate)

(Folinic acid calcium salt hydrate)

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

Inhalation - May cause respiratory irritation. (Folinic acid calcium salt hydrate)

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available (Folinic acid calcium salt hydrate)

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
(Folinic acid calcium salt hydrate)

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available (Folinic acid calcium salt hydrate)

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

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**15. REGULATORY INFORMATION****OSHA Hazards**

Target Organ Effect, Irritant, Carcinogen

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

CAS-No.  
64-17-5

Revision Date  
2007-03-01

**Pennsylvania Right To Know Components**

CAS-No.

Revision Date

Ethanol 64-17-5 2007-03-01  
Folinic acid calcium salt hydrate 6035-45-6

**New Jersey Right To Know Components**

Ethanol	CAS-No.	Revision Date
Folinic acid calcium salt hydrate	64-17-5	2007-03-01
	6035-45-6	

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION**

**Further information**

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