

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methotrexate, meets USP and EP testing specifications

Product Number : M4010
Brand : Sigma

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

Telephone : +1 800-325-5832
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Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : (+)-Amethopterin

Formula : C₂₀H₂₂N₈O₅
Molecular Weight : 454.4 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Methotrexate			
59-05-2	200-413-8	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect, Toxic by ingestion, Irritant, Teratogen

Target Organs

Blood, Bone marrow, Liver, Gastro-intestinal system, Kidney, Immune system, Lungs

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	Toxic if swallowed.

4. FIRST AID MEASURES

General advice

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

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. FIRE-FIGHTING MEASURES

Flammable properties

Flash point no data available

Ignition temperature no data available

Suitable extinguishing media

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

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

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

7. HANDLING AND STORAGE

Handling

Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage

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

Light sensitive. hygroscopic. Keep in a dry place. Keep in a dry place. Keep in a dry place. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	powder
Colour	dark yellow

Safety data

pH	no data available
Melting point	185 - 204 °C (365 - 399 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	insoluble

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Avoid moisture. Light.

Hazardous decomposition products

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 135 mg/kg

LD50 Intraperitoneal - rat - 6 mg/kg

LD50 Subcutaneous - rat - 58 mg/kg

LD50 Intravenous - rat - 14 mg/kg

Irritation and corrosion

no data available

Sensitisation**Chronic exposure**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Methotrexate)

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

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.

May cause congenital malformation in the fetus.

Signs and Symptoms of Exposure

Symptoms and signs of poisoning are:, Nausea, Dizziness, Headache, Changes in the blood count, anemia, Drowsiness, Gastrointestinal disturbance, Vomiting, Diarrhoea, Fever, hair loss, mouth ulcers, Fatigue, chills, Anorexia., Blurred vision, increased susceptibility to infections

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	Toxic if swallowed.
Target Organs	Blood, Bone marrow, Liver, Gastro-intestinal system, Kidney, Immune system, Lungs,

Additional Information

RTECS: MA1225000

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. 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.

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

UN-Number: 1544 Class: 6.1 Packing group: III
 Proper shipping name: Alkaloids, solid, n.o.s. (Methotrexate)
 Marine pollutant: No
 Poison Inhalation Hazard: No

IMDG

UN-Number: 1544 Class: 6.1 Packing group: III EMS-No: F-A, S-A
 Proper shipping name: ALKALOIDS, SOLID, N.O.S. (Methotrexate)
 Marine pollutant: No

IATA

UN-Number: 1544 Class: 6.1 Packing group: III
 Proper shipping name: Alkaloids, solid n.o.s. (Methotrexate)

15. REGULATORY INFORMATION**OSHA Hazards**

Target Organ Effect, Toxic by ingestion, Irritant, Teratogen

DSL Status

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

Methotrexate	CAS-No. 59-05-2
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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

Methotrexate	CAS-No. 59-05-2	Revision Date 1991-07-01
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Pennsylvania Right To Know Components

Methotrexate	CAS-No. 59-05-2	Revision Date 1991-07-01
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New Jersey Right To Know Components

Methotrexate	CAS-No. 59-05-2	Revision Date 1991-07-01
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California Prop. 65 Components

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.	CAS-No. 59-05-2	Revision Date 1989-01-01
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Methotrexate

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.