

Material Safety Data Sheet

Methotrexate USP

ACC# 91571

Section 1 - Chemical Product and Company Identification

MSDS Name: Methotrexate USP

Catalog Numbers: BP2665, BP26651, BP266510, BP2665100, BP266525, BP2665500

Synonyms: Glutamic acid, N-(p-(((2,4-diamino-6-pteridinyl)methyl)methylamino)benzol)-, L-; Amethopterin; (+)-Amethopterin; Amethopterine; 4-Amino-4-deoxy-N(sup 10)-methylpteroylglutamate; 4-Amino-4-deoxy-N(sup 10)-methylpteroylglutamic acid; 4-Amino-10-methylfoli.

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
59-05-2	Methotrexate	ca 100	200-413-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow crystalline powder.

Warning! May cause heritable genetic damage. This substance has caused adverse reproductive and fetal effects in humans. May cause eye, skin, and respiratory tract irritation. May cause blood abnormalities. Light sensitive. May cause bone marrow depression. May cause liver and kidney damage. Hygroscopic (absorbs moisture from the air). May cause dermatitis. Target Organs: Blood, kidneys, liver, lungs, gastrointestinal system, bone marrow, immune system.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May be harmful if absorbed through the skin. May cause skin irritation, rashes, itching, dermatitis, photosensitivity, discoloration of the skin, acne, burning and hair loss.

Ingestion: Poison by ingestion. Exposure may cause anemia and other blood abnormalities. May

cause bone marrow depression. Ingestion may result in irritation of the esophagus, bleeding of the stomach and ulcer formation. May cause headaches, drowsiness, anorexia, blurred vision, eye discomfort, ringing in the ears, fatigue, dizziness, gingivitis, diarrhea, hair loss, cerebrospinal fluid effects, blood pressure depression, and cyanosis. May cause blood cell counts to decrease. People with preexisting liver or kidney malfunctions are at increased risk from this substance. Liver dysfunction is usually reversible, but may lead to cirrhosis. Inhalation: May cause effects similar to those described for ingestion. May cause respiratory tract irritation. May cause lung damage. May cause "Methotrexate Lung Injury," which may also be present with dyspnea, tachypnea, cough, cyanosis. This condition is potentially fatal. Chronic: May cause liver and kidney damage. May cause reproductive effects (spermatogenesis, oogenesis), developmental effects in fetuses, and possibly abortion. May cause chronic liver toxicity. Has had human mutagenic effects. May cause decreased immunity to infections.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Persons with preexisting liver or kidney disorders are at increased risk from this substance.

Antidote: Charcoal hemoperfusion is recommended.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical powder or appropriate foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Store protected from light. Use only in a chemical fume hood. Keep from contact with moist air and steam.

Storage: Deep freeze (below -20°C). Keep containers tightly closed. Store protected from moisture. Store protected from light.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methotrexate	none listed	none listed	none listed

OSHA Vacated PELs: Methotrexate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder

Appearance: yellow

Odor: None reported

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 195 deg C

Decomposition Temperature: > 195 deg C

Solubility: insoluble

Specific Gravity/Density: Not available.
Molecular Formula: C₂₀H₂₂N₈O₅
Molecular Weight: 454.2046

Section 10 - Stability and Reactivity

Chemical Stability: Decomposes on exposure to light. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Light, dust generation, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 59-05-2: MA1225000

LD50/LC50:

CAS# 59-05-2:

Oral, mouse: LD50 = 146 mg/kg;

Oral, rat: LD50 = 135 mg/kg;

Carcinogenicity:

CAS# 59-05-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: IARC has classified this substance as a Group 3 carcinogen: not classifiable--inadequate human and animal evidence.

Teratogenicity: Methotrexate is a known human teratogen, with skull and limb abnormalities frequently reported. The most characteristic malformation is a "clover-leaf" skull with a large head, swept black hair, low set ears, prominent eyeballs, and wide nasal bridge. Oral, woman: 250 ug/kg (9 wk after conception)--developmental abnormalities: craniofacial and musculoskeletal.

Reproductive Effects: Adverse reproductive effects have occurred in humans.

Mutagenicity: Mutagenic effects have occurred in humans.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No data available.

Physical: No data available.

Other: None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ALKALOIDS, SOLID, N.O.S. (Methotrexate)	ALKALOIDS, SOLID, N.O.S. (Methotrexate)
Hazard Class:	6.1	6.1
UN Number:	UN1544	UN1544
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 59-05-2 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 59-05-2 can be found on the following state right to know lists: New Jersey, Massachusetts.

California Prop 65

WARNING: This product contains Methotrexate, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T

Risk Phrases:

R 25 Toxic if swallowed.

R 46 May cause heritable genetic damage.

R 61 May cause harm to the unborn child.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 28A After contact with skin, wash immediately with plenty of water

WGK (Water Danger/Protection)

CAS# 59-05-2: No information available.

Canada - DSL/NDSL

CAS# 59-05-2 is listed on Canada's NDSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 6/14/2000

Revision #6 Date: 11/09/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.