

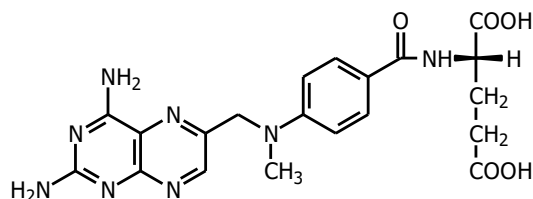
Schircks Laboratories  
 Postfach  
 CH-8494 Bauma  
 Switzerland  
 Telephone +41 (0) 55 / 212 23 24  
 E-Mail labschircks@gmail.com  
 Website [www.schircks.ch](http://www.schircks.ch)

# Schircks Laboratories

## DATA SHEET

### Methotrexate Product No. 16.411

Synonym: Amethopterin, *N*-{4-[(2,4-diamino-6-pteridiny)methyl]methylamino}benzoyl}-L-glutamic acid  
 Abbreviation used: MTX



$C_{20}H_{22}N_8O_5$  MW 454.4  
 CAS no. 59-05-2

<b>Description</b>	Yellow to orange brown crystalline powder										
<b>Biochemistry</b>	Methotrexate is an antimetabolite. It is an inhibitor of dihydrofolate reductase. MTX acts by altering the body's use of folic acid (a vitamin), which is needed for cell growth. It is suspected that this interference with folic acid is an important reason for methotrexate's benefit in rheumatoid arthritis.										
<b>Solubility</b>	MTX is practically insoluble in water. It is sparingly soluble in 0.01 M NaOH pH 10.0, (0.25 g/100 g 0.01 M NaOH (22°C)). Ultrasonication may be used to improve dissolution.										
<b>HPLC Conditions</b>	<table border="0"> <tr> <td>column</td> <td>Waters Spherisorb S5-ODS1</td> </tr> <tr> <td>eluant</td> <td>10 mM Na<sub>2</sub>HPO<sub>4</sub> pH 6.0 / Methanol (19:1)</td> </tr> <tr> <td>flow rate</td> <td>1 ml/min</td> </tr> <tr> <td>wavelength</td> <td>254 nm</td> </tr> <tr> <td>solution</td> <td>1 mg/ml 0.01 M NaOH</td> </tr> </table>	column	Waters Spherisorb S5-ODS1	eluant	10 mM Na <sub>2</sub> HPO <sub>4</sub> pH 6.0 / Methanol (19:1)	flow rate	1 ml/min	wavelength	254 nm	solution	1 mg/ml 0.01 M NaOH
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solution	1 mg/ml 0.01 M NaOH										
<b>Purity: HPLC</b>	>98.5%. Related substances are N-methylfolic acid, 4-aminofolic acid, 2,4-diamino-10-methylpteroic acid and 10-methylpteroic acid.										
<b>Stability</b>	Methotrexate powder is stable at room temperature for at least 3 months. It is hygroscopic. A 1 mM solution of MTX in 0.01 M NaOH is very stable. HPLC analysis of the 1 mM solution after 7 days at room temperature showed no degradation.										
<b>Storage</b>	Keep the powder dry in amber vials at -20°C or colder. Methotrexate can be transported without the use of dry ice.										
<b>Uses</b>	MTX was first developed to treat certain types of cancer. It is routinely used at high doses as a cancer therapy and is also used at much lower doses to treat neoplastic diseases, severe psoriasis, Crohn's disease and adult rheumatoid arthritis. Our product is sold for laboratory use only.										
<b>Precautions</b>	<b>Highly Toxic. Use Special Handling precautions. Avoid inhalation and skin contact.</b> Side effects to the use of this drug may include suppression of bone marrow production of blood cells, hepatitis, and others.										
<b>References</b>	"Taber's Cyclopedic Medical Dictionary", Copyright © 2001 by F. A. Davis Co., Phil., PA.										

Further data sheets can be found on our website [www.schircks.ch](http://www.schircks.ch)

The information given in this publication is based on our current knowledge and experience. It does not relieve users or processors from carrying out their own precautions and tests.