

HPLC Method for Analysis of Caffeine, Theophylline and Theobromine on Primesep SB Column on Cromite™



High Performance Liquid Chromatography (HPLC) Method for Analysis of Caffeine , Theobromine , Theophylline

Caffeine is a natural stimulant and methylxanthine alkaloid. with the molecular formula $C_8H_{10}N_4O_2$. Caffeine can be found in a variety of plants, including tea, coffee, cocoa, kola nuts, and guarana. Ingestion of it can increase alertness and cognitive function. It can also cause worsening anxiety, heart palpitations, and headaches.

Theophylline is a methylxanthine compound with the molecular formula $C_7H_8N_4O_2$. It is a caffeine metabolite and is often used in forensic analyses. Besides analytical use, it is often used in treating respiratory conditions.

Theobromine is a methylxanthine alkaloid with the molecular formula $C_7H_8N_4O_2$. It is a derivative of caffeine. It can be found in many foods, including chocolate and tea. Despite that, it is toxic to dogs.

Caffeine , Theobromine , Theophylline can be retained and analyzed using the Primesep SB stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and ethanol (EtOH) with a phosphoric acid buffer. Detection is performed using UV.

Method Parameters

Column	Primesep SB, 3.2 x 100 mm, 5 µm, 100 Å, dual ended
Mobile Phase	EtOH- 10%
Buffer	Phosphoric Acid
Flow Rate	0.5 mL/min
Detection	UV 275 nm

Quelle: <https://sielc.com/hplc-method-for-analysis-of-caffeine-theophylline-theobromine>