

## Theophylline Datasheet

5<sup>th</sup> Edition (Revised in January, 2017)

### [ Product Information ]

**Name:** Theophylline

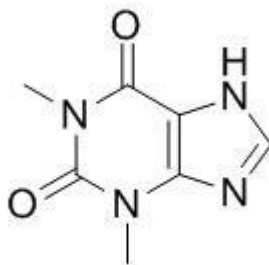
**Catalog No.:** CFN99768

**Cas No.:** 58-55-9

**Purity:** >=98%

**M.F:** C<sub>7</sub>H<sub>8</sub>N<sub>4</sub>O<sub>2</sub>

**M.W:** 180.16



**Physical Description:** White cryst.

**Synonyms:** 1,3-Dimethyl-3,4,5,7-tetrahydro-1H-purine-2,6-dione; Dimethylxanthine.

### [ Intended Use ]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Others.

### [ Source ]

The leaves of *Black tea*.

### [ Biological Activity or Inhibitors ]

Theophylline is the most widely used anti-asthma drug worldwide and is classified as a bronchodilator, although there is increasing evidence that it may have immunomodulatory effects.<sup>[1]</sup>

Theophylline can restore histone deacetylase activity and steroid responses in chronic obstructive pulmonary disease macrophages (COPD).<sup>[2]</sup>

Theophylline can antagonize flurazepam-induced depression of cerebral cortical neurons.<sup>[3]</sup>

Theophylline has an antiinflammatory action, it accelerates granulocyte apoptosis, which may play an essential role in inflammation, and controls granulocyte longevity regardless of the elevation of intracellular cAMP levels.<sup>[4]</sup>

### **[ Solvent ]**

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

### **[ HPLC Method ]<sup>[5]</sup>**

Mobile phase: 0.1% Tetrahydrofuran in water(pH=8.0)-Acetonitrile=90:10;

Flow rate: 0.8 ml/min;

Column temperature: 25 °C;

The wave length of determination: 273 nm.

### **[ Storage ]**

2-8°C, Protected from air and light, refrigerate or freeze.

### **[ References ]**

[1]Kidney J, Dominguez M, Taylor P M, *et al. Am. J. Respir. Crit. Care Med.*, 1995 ,151(6): 1907-14.

[2] Cosio B G, Tsaprouni L, Ito K, *et al. J. Exp. Med.*,2004, 200(5):689-95.

[3] Phillis J W, Edstrom J P, Ellis S W, *et al. Can. J. Physiol. Pharmacol.*, 1979, 57(8):

917-20.

[4] Yasui K, Hu B, Nakazawa T, *et al. J. Clin. Invest.*, 1997, 100(7):1677-84.

[5] Srdjenovic B, Djordjevicmilic V, Grujic N, *et al. J. Chromatogr. Sci.*, 2008, 46(2):144-9.

## **[ Contact ]**

**Address:**

S5-3 Building, No. 111, Dongfeng Rd.,  
Wuhan Economic and Technological Development Zone,  
Wuhan, Hubei 430056,  
China

**Email:** [info@chemfaces.com](mailto:info@chemfaces.com)

**Tel:** +86-27-84237783

**Fax:** +86-27-84254680

**Web:** [www.chemfaces.com](http://www.chemfaces.com)

**Tech Support:** [service@chemfaces.com](mailto:service@chemfaces.com)