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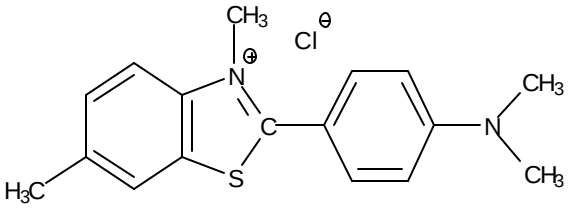
ProductInformation

THIOFLAVIN T
Sigma Prod. No. T3516
Store at room temperature

Replacement for 22,885-0

CAS NUMBER: 2390-54-7
COLOR INDEX NUMBER: 49005
SYNONYMS: C.I. 49005; Basic Yellow 1; Thioflavine TCN; Primoflavine T; Rhoduline Yellow 6G; Setoflavin T; Tannoflavin T[1]



PHYSICAL PROPERTIES:

Appearance: A yellow to orange-brown powder
Extinction coefficient: E^{mM} = 26.6(416 nm in ethanol)[2]
Molecular formula: $C_{17}H_{19}ClN_2S$
Formula weight: 318.9
Based on CHN analysis, the dye content is reported as "approximately 75%", with specific value reported on a certificate of analysis.

SOLUBILITY / SOLUTION STABILITY:

The product forms a clear, very dark yellow solution in methanol (0.1% w/v). It has been tested by TLC at 50 mg/mL in glacial acetic acid:water (1:1).[2] Thioflavin T is reportedly soluble in cold water, very soluble in hot water and soluble in alcohol up to 100 mg/mL (yellow with green fluorescence).[1] Working solutions should probably be prepared fresh for each use.[4]

GENERAL REMARKS/APPLICATIONS:

Thioflavin T has been used as a dye for silk, cotton, wool, nylon and acetate (the latter two with fluorescence), and used to color ballpoint-pen ink; it was used in the fluorescent staining of viruses.[3]

The product is used in the staining of tissue to show primary and secondary amyloid deposits. A stock solution of 0.5% of the dye in 0.1 N HCl is described, using a solution prepared fresh and filtered.[4] Thioflavin T has been used in the fluorometric determination of amyloid fibrils in vitro. In the absence of amyloid fibrils, the dye fluoresced faintly at the excitation and emission maxima of 350 and 438 nm, respectively. In the presence of amyloid fibrils, there was a bright fluorescence with this dye at the excitation and emission maxima of 450 and 482 nm, respectively. The fluorescence change was linear from 0 to 2.0 µg/ml of amyloid fibrils.[5]

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CITED REFERENCES:

1. *Conn's Biological Stains*, 9th ed., R.D. Lillie, ed. (Williams and Wilkins, 1977), p. 370.
2. Sigma files or quality control data.
3. *Sigma Aldrich Handbook of Stains, Dyes and Indicators*, F.J. Green, ed. (Aldrich Chem. Co., 1990) p. 701.
4. *Staining Procedures*, 4th ed., G. Clark, ed. (Williams and Wilkins, 1987) p. 100.
5. Naiki, H., et al., *Anal. Biochem.*, 177, 244-249 (1989).