

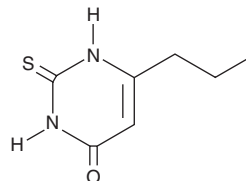
# PRODUCT INFORMATION



## Propylthiouracil

Item No. 14069

**CAS Registry No.:** 51-52-5  
**Formal Name:** 2,3-dihydro-6-propyl-2-thioxo-4(1H)-pyrimidinone  
**Synonyms:** NSC 6498, NSC 70461, 6-n-Propylthiouracil, PTU  
**MF:** C<sub>7</sub>H<sub>10</sub>N<sub>2</sub>OS  
**FW:** 170.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 214, 275 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Propylthiouracil is supplied as a crystalline solid. A stock solution may be made by dissolving the propylthiouracil in the solvent of choice, which should be purged with an inert gas. Propylthiouracil is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of propylthiouracil in these solvents is approximately 2, 10, and 12.5 mg/ml, respectively.

Propylthiouracil is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, propylthiouracil should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Propylthiouracil has a solubility of approximately 0.50 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Propylthiouracil (PTU) is a thioamide antithyroid agent.<sup>1</sup> It inhibits thyroid peroxidase activity in rat and monkey thyroid microsomes (IC<sub>50</sub>s = 0.081 and 4.1 μM, respectively). PTU (30 mg/kg) increases thyroid weight and serum thyroid stimulating hormone levels and decreases serum 3,5,3'-triiodothyronine and thyroxine levels in rats. Sensitivity to the bitter taste of PTU is genetically mediated and is associated with increased sensitivity to other sweet and bitter compounds.<sup>2</sup> Formulations containing propylthiouracil have been used in the treatment of Graves' disease and hyperthyroidism.

### References

1. Takayama, S., Aihara, K., Onodera, T., *et al.* Antithyroid effects of propylthiouracil and sulfamonomethoxine in rats and monkeys. *Toxicol. Appl. Pharmacol.* **82(2)**, 191-199 (1986).
2. Drewnowski, A. and Rock, C.L. The influence of genetic taste markers on food acceptance. *Am. J. Clin. Nutr.* **62(3)**, 506-511 (1995).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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