

# PRODUCT INFORMATION



## Thiocarlide

Item No. 10006976

CAS Registry No.: 910-86-1

Formal Name: N,N'-bis[4-(3-methylbutoxy)phenyl]-thiourea

Synonym: Isoxyl

MF: C<sub>23</sub>H<sub>32</sub>N<sub>2</sub>O<sub>2</sub>S

FW: 400.6

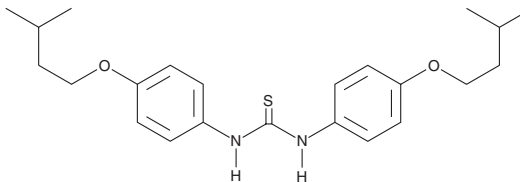
Purity: ≥98%

UV/Vis.: λ<sub>max</sub>: 273 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

### Laboratory Procedures

Thiocarlide (isoxyl) is supplied as a crystalline solid. A stock solution may be made by dissolving the isoxyl in the solvent of choice, which should be purged with an inert gas. Isoxyl is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of isoxyl in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Isoxyl is sparingly soluble in aqueous buffers. Therefore, further dilutions of the organic solvent solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Isoxyl is a thiourea derivative that was used in the 1960s to successfully treat tuberculosis (TB). It has considerable antimycobacterial activity *in vitro* and is effective against multi-drug resistant strains of *Mycobacterium tuberculosis* in the range of 1-10 µg/ml.<sup>1,2</sup> At concentrations of 10 µM, isoxyl inhibits the synthesis of *M. bovis* during six hours of exposure which is similar to isoniazid (INH) and ethionamide (ETH), two other predominant anti-TB drugs. Unlike INH and ETH, isoxyl also partially inhibits the synthesis of fatty acids. Isoxyl shows no acute toxicity against primary macrophage cell cultures as demonstrated by diminution of redox activity.<sup>2</sup>

### References

1. Phetsuksiri, B., Jackson, M., Scherman, H., *et al.* Unique mechanism of action of the thiourea drug isoxyl on mycobacterium tuberculosis. *J. Biol. Chem.* **278**(52), 53123-53130 (2003).
2. Phetsuksiri, B., Baulard, A.R., Cooper, A.M., *et al.* Antimycobacterial activities of isoxyl and new derivatives through the inhibition of mycolic acid synthesis. *Antimicrob. Agents Chemother.* **43**(5), 1042-1051 (1999).

#### 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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