

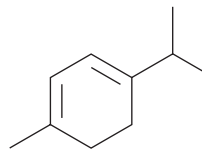
# PRODUCT INFORMATION



## $\alpha$ -Terpinene

Item No. 23178

**CAS Registry No.:** 99-86-5  
**Formal Name:** 1-methyl-4-(1-methylethyl)-1,3-cyclohexadiene  
**Synonym:** *p*-Mentha-1,3-diene  
**MF:** C<sub>10</sub>H<sub>16</sub>  
**FW:** 136.2  
**Purity:**  $\geq$ 95%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 213, 266 nm  
**Supplied as:** A liquid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



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

### Laboratory Procedures

$\alpha$ -Terpinene is supplied as a liquid. A stock solution may be made by dissolving the  $\alpha$ -terpinene in the solvent of choice, which should be purged with an inert gas.  $\alpha$ -Terpinene is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of  $\alpha$ -terpinene in these solvents is approximately 20 mg/ml.

$\alpha$ -Terpinene is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers,  $\alpha$ -terpinene should first be dissolved in ethanol and then diluted with the aqueous buffer of choice.  $\alpha$ -Terpinene has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

$\alpha$ -Terpinene is a terpenoid that has been found in *Cannabis* and has diverse biological activities, including acaricidal, antiprotozoal, and antioxidant properties.<sup>1,2</sup>  $\alpha$ -Terpinene induces 99 and 46% mortality of male and female *T. putrescentiae* larvae, respectively, when administered at a dose of 32.3  $\mu$ l/L *via* inhalation.<sup>3</sup> In mice infected with *T. evansi*, it increases longevity when used alone and decreases mortality when used in combination with diminazene aceturate (Item No. 18678).<sup>4</sup> It also scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) radicals when used at a concentration of 10 mM.<sup>5</sup>

### References

1. Giese, M.W., Lewis, M.A., Giese, L., *et al.* Development and validation of a reliable and robust method for the analysis of cannabinoids and terpenes in Cannabis. *J. AOAC Int.* **98(6)**, 1503-1522 (2015).
2. Ross, S.A. and ElSohly, M.A. The volatile oil composition of fresh and air-dried buds of *Cannabis sativa*. *J. Nat. Prod.* **59(1)**, 49-51 (1996).
3. Sánchez-Ramos, I. and Castañera, P. Acaricidal activity of natural monoterpenes on *Tyrophagus putrescentiae* (Schränk), a mite of stored food. *J. Stored Prod. Res.* **37(1)**, 93-101 (2000).
4. Baldissera, M.D., Grando, T.H., Souza, C.F., *et al.* *In vitro* and *in vivo* action of terpinen-4-ol,  $\gamma$ -terpinene, and  $\alpha$ -terpinene against *Trypanosoma evansi*. *Exp. Parasitol.* **162**, 43-48 (2016).
5. Kim, H.J., Chen, F., Wu, C., *et al.* Evaluation of antioxidant activity of Australian tea tree (*Melaleuca alternifolia*) oil and its components. *J. Agric. Food Chem.* **52(10)**, 2849-2854 (2004).

#### 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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