

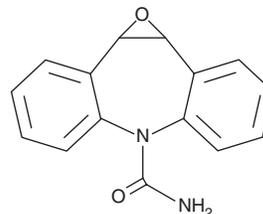
# PRODUCT INFORMATION



## Carbamazepine 10,11-epoxide

Item No. 33908

**CAS Registry No.:** 36507-30-9  
**Formal Name:** 1a,10b-dihydro-6H-dibenz[b,f]oxireno[d]azepine-6-carboxamide  
**Synonyms:** CBZ-E, CBZ 10,11-epoxide  
**MF:** C<sub>15</sub>H<sub>12</sub>N<sub>2</sub>O<sub>2</sub>  
**FW:** 252.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 211 nm  
**Supplied as:** A 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

Carbamazepine 10,11-epoxide is supplied as a solid. A stock solution may be made by dissolving the carbamazepine 10,11-epoxide in the solvent of choice, which should be purged with an inert gas. Carbamazepine 10,11-epoxide is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of carbamazepine 10,11-epoxide in DMSO and DMF is approximately 1 and 5 mg/ml, respectively.

Carbamazepine 10,11-epoxide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, carbamazepine 10,11-epoxide should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Carbamazepine 10,11-epoxide has a solubility of approximately 0.16 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

Carbamazepine 10,11-epoxide is an active metabolite of the anticonvulsant carbamazepine.<sup>1,2</sup> It is formed from carbamazepine by the cytochrome P450 (CYP) isoforms CYP3A4 and CYP2C8 in microsomes prepared from HepG2 cells expressing CYP3A4 or CYP2C8, respectively.<sup>1</sup> Carbamazepine 10,11-epoxide has anticonvulsant activity against maximal electroshock-induced seizures in mice.<sup>2</sup> It has been found in wastewater effluent.<sup>3</sup>

### References

1. Kerr, B.M., Thummel, K.E., Wurden, C.J., *et al.* Human liver carbamazepine metabolism. Role of CYP3A4 and CYP2C8 in 10,11-epoxide formation. *Biochem. Pharmacol.* **47(11)**, 1969-1979 (1994).
2. Bourgeois, B.F. and Wad, N. Individual and combined antiepileptic and neurotoxic activity of carbamazepine and carbamazepine-10,11-epoxide in mice. *J. Pharmacol. Exp. Ther.* **231(2)**, 411-415 (1984).
3. Miao, X.-S., Yang, J.-J., and Metcalfe, C.D. Carbamazepine and its metabolites in wastewater and in biosolids in a municipal wastewater treatment plant. *Environ. Sci. Technol.* **39(19)**, 7469-7475 (2005).

#### 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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