

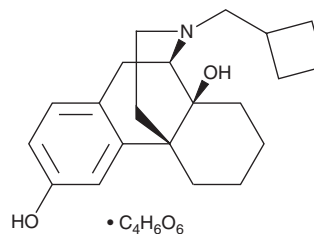
# PRODUCT INFORMATION



## Butorphanol (tartrate)

Item No. 23812

**Formal Name:** 17-(cyclobutylmethyl)-morphinan-3,14-diol  
2,3-dihydroxybutanedioate  
**Synonym:** (-)-Butorphanol  
**MF:**  $C_{21}H_{29}NO_2 \cdot C_4H_6O_6$   
**FW:** 477.6  
**Purity:**  $\geq 98\%$   
**Supplied as:** A neat solid  
**Storage:**  $-20^\circ\text{C}$   
**Stability:**  $\geq 6$  years



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

### Description

Butorphanol (tartrate) (Item No. 23812) is an analytical reference material categorized as an opioid.<sup>1</sup> Butorphanol is regulated as a Schedule IV compound in the United States. This product is intended for research and forensic applications.

This product is qualified as a Reference Material that has been manufactured and tested to ISO/IEC 17025 and ISO 17034 international standards for reference materials.

### Reference

1. Commiskey, S., Fan, L.W., Ho, I.K., *et al.* Butorphanol: Effects of a prototypical agonist-antagonist analgesic on  $\kappa$ -opioid receptors. *J. Pharmacol. Sci.* **98(2)**, 109-116 (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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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