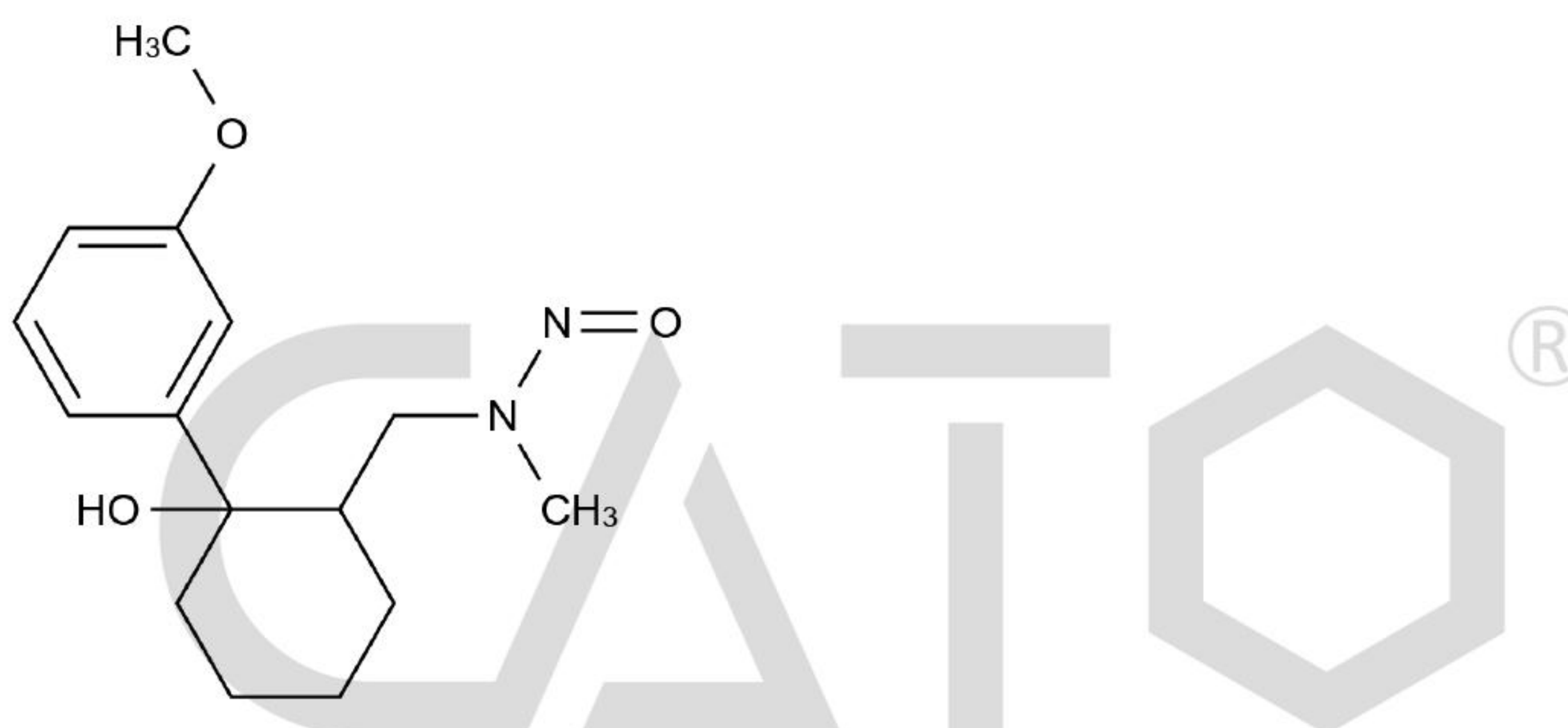


Certificate of Analysis

Reference Material & Standard

Product Name:	Tramadol Impurity 21	Catalogue Number:	C4X-149821
Synonyms:	N/A	Lot Number:	0313-RH-0077
CAS Number:	N/A	Expiry Date:	Mar 10, 2030
Molecular Formula:	C ₁₅ H ₂₂ N ₂ O ₃	Storage:	-20°C±5°C Protected from light and Sealed
Molecular Weight:	278.35	Shipping Condition:	Shipping with Ice Packs

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Yellow Oil
Identification	LCMS&HNMR	Confirmed
Purity	HPLC	98.8933%
Loss On Drying	TGA	1.718%
Assay		97.2%

Comment:

The calculation of the mass balance method follows the formula (calculated on the non-dried basis):

Assay (%) = (100% - Loss On Drying) * Purity HPLC (%) / 100%

Loss On Drying is considered as absolute effect, HPLC purity is considered as relative effect.

Signature:

Prepared by:

Hin Lam

Reviewed by:

Lisa

Approved by General Manager:

David

Date: Mar 16, 2026

Date: Mar 16, 2026

Date: Mar 16, 2026



Add: 3rd Floor, Building B, No.179, Guangpu Rd East, Huangpu District, Guangzhou, China

Tel: +86-20-81960175

Email: supports@cato-chem.com

Web: <https://www.cato-chem.com>

