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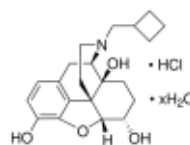
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## Product Specification

Product Name:  
Nalbuphine hydrochloride hydrate - ≥98% (HPLC)

Product Number: **N4396**

Formula:  $C_{21}H_{27}NO_4 \cdot HCl \cdot xH_2O$   
Formula Weight: 393.90 g/mol



TEST	Specification
Appearance (Color)	White to Light Yellow
Appearance (Form)	Powder
Proton NMR spectrum	Conforms to Structure
Water (by Karl Fischer)	2.2 - 9.9 %
Carbon (anhydrous)	62.7 - 65.3 %
Purity (HPLC)	≥ 98 %
Solubility (Color)	Colorless to Faint Yellow
Solubility (Turbidity)	Clear to Very Slightly Hazy
50 mg/mL, H <sub>2</sub> O	
Recommended Retest Period	-----
4 Years	

Specification: PRD.3.ZQ5.10000008400

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.