

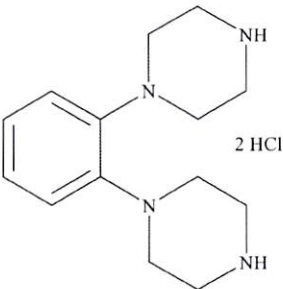


Certificate of Analysis



Certificate No.: 20241025504

Date: October 25, 2024

Retest date: October 24, 2027

Compound Name:	Vortioxetine Impurity 20 DiHCl	
Synonyms:	1,2-di(piperazin-1-yl)benzene, hydrochloride (1:2)	
TLC Catalogue Number:	V-043021	
CAS Number:	1446750-99-7 (free base)	
Molecular Weight:	246.36 2*36.46	
Molecular Formula:	C ₁₄ H ₂₂ N ₄ · 2 HCl	
Source:	TLC Pharmaceutical Standards	
Source Lot No.:	4436-005A4	
Storage Conditions:	Store at 2-8 °C	
Solubility:	Methanol, Water, DMSO, DMF	

Test Description	Specifications	Results
Visual Description	White to off-white solid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹H NMR	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	99.5%
Impurity (HPLC)	RT 9.55, 0.48%	
Water Content (KF)	N/A	2.7%
Residual Solvents (NMR)	No residual solvent	
Assay (%)	Not less than 90.0%	96.8%
Recommendation:	Release.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		10/28/2024
Approved by:	Quality Assurance		10/28/2024

Attachments: HPLC, IR, MS and NMR spectra.