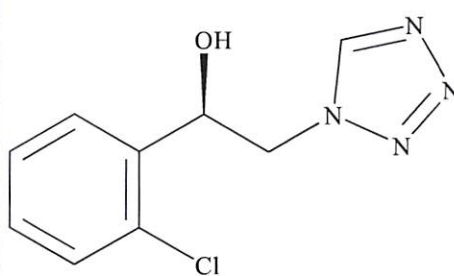


Certificate of Analysis

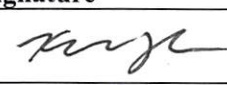

Certificate No.: 20260529009-2

Date: May 29, 2026

Retest date: May 26, 2029

Compound Name:	Tulobuterol Impurity 7	
Synonyms:	(R)-1-(2-chlorophenyl)-2-(1H-tetrazol-1-yl)ethan-1-ol	
TLC Catalogue Number:	T-206010	
CAS Number:	1259059-74-9	
Alternate CAS Number:	2297784-40-6 (Racemic)	
Molecular Weight:	224.65	
Molecular Formula:	C ₉ H ₉ ClN ₄ O	
Source:	TLC Pharmaceutical Standards	
Source Lot No.:	7399-073A4	
Storage Conditions:	Store at 2-8 °C	
Solubility:	Methanol, DMSO, Ethanol	

Test Description	Specifications	Results
Visual Description	White to off-white solid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	99.9%
Impurity (HPLC)	N/A	
Purity (Chiral HPLC)	Not less than 98.0%	100.0%
Water Content (KF)	N/A	0.1%
Optical Rotation	N/A	$[\alpha]_D^{25.0}(c=0.53, CH_3OH): -88.2^\circ$
Residual Solvents (NMR)	0.3% ethyl acetate	
Assay (%)	Not less than 90.0%	99.5%
Recommendation:	Release.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		06/09/2026
Approved by:	Quality Assurance		06/09/2026

Attachments: Peak Attribution Table, Assay Calculation, HPLC, IR, MS and NMR spectra.