

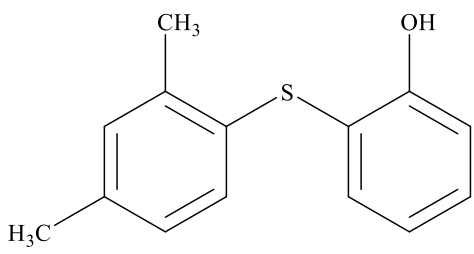
# Certificate of Analysis

Certificate No.: 20210610017

Date: June 10, 2021

Retest date: June 8, 2024

<b>Compound Name:</b> Vortioxetine Impurity 47	
<b>Synonyms:</b>	2-((2,4-dimethylphenyl)thio)phenol
<b>TLC Catalogue Number:</b>	V-043055
<b>CAS Number:</b>	N/A
<b>Molecular Weight:</b>	230.33
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>14</sub> OS
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	4481-078A6
<b>Storage Conditions:</b>	Store at 2-8 °C
<b>Solubility:</b>	Methanol



The chemical structure shows a central sulfur atom (S) bonded to two phenyl rings. The left phenyl ring has methyl groups (CH<sub>3</sub>) at the 2 and 4 positions. The right phenyl ring has a hydroxyl group (OH) at the 1 position.

Test Description	Specifications	Results
<b>Visual Description</b>	Colorless liquid	<b>Conforms</b>
<b>Identification</b>		
IR	Conforms to structure	<b>Conforms</b>
MS	Conforms to structure	<b>Conforms</b>
<sup>1</sup> H NMR	Conforms to structure	<b>Conforms</b>
<b>Purity (HPLC)</b>	Not less than 95.0%	<b>100.0%</b>
<b>Impurity (HPLC)</b>	N/A	
<b>Water Content (KF)</b>	N/A	<b>0.3%</b>
<b>Residual Solvents (NMR)</b>	1.8% <i>n</i> -hexane	
<b>Assay (%)</b>	Not less than 90.0%	<b>97.9%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		
Approved by:	Quality Assurance		

**Attachments:** HPLC, IR, MS and NMR spectra.