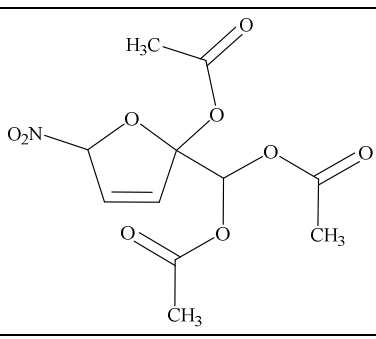


# Certificate of Analysis

Certificate No.: **20181022002**

Date: October 22, 2018

Retest date: October 17, 2021

<b>Compound Name:</b>	<b>Nifuratel Impurity 13</b>	
<b>Synonyms:</b>	(2-Acetoxy-5-nitro-2,5-dihydrofuran-2-yl)methylene diacetate	
<b>TLC Catalogue Number:</b>	N-4716	
<b>CAS Number:</b>	5904-70-1	
<b>Molecular Weight:</b>	303.22	
<b>Molecular Formula:</b>	C <sub>11</sub> H <sub>13</sub> NO <sub>9</sub>	
<b>Source:</b>	TLC Pharmaceutical Standards	
<b>Source Lot No.:</b>	3202-020A14	
<b>Storage Conditions:</b>	Store at 2-8 °C.	
<b>Solubility:</b>	Acetonitrile	

Test Description	Specifications	Results
<b>Visual Description</b>	White to off-white solid	<b>Conforms</b>
<b>Identification</b>		
<b>MS</b>	Conforms to structure	<b>Conforms</b>
<b><sup>1</sup>H NMR</b>	Conforms to structure	<b>Conforms</b>
<b>Purity (HPLC)</b>	Not less than 95.0%	<b>98.4%</b>
<b>Impurity (HPLC)</b>	RT 9.82, 1.2%; RT 20.90, 0.3%	
<b>Water Content (KF)</b>	N/A	<b>0.1%</b>
<b>Residual Solvents (NMR)</b>	No residual solvent	
<b>Assay (%)</b>	Not less than 95.0%	<b>98.3%</b>
<b>Recommendation:</b>	<b>Released.</b> The compound contains 1.2% Nitrofurfural Diacetate (Nifuratel Impurity A) (TLC No. N-472, RT 9.82) according to its HPLC and LC-MS.	

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

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