

### CERTIFICATE OF ANALYSIS

<b>PRODUCT : DILTIAZEM HCl (MICRONISED)</b>		<b>COMPENDIA : Ph.Eur.-7.7</b>
<b>BATCH NO. : DIL/M-15213</b>		<b>QUANTITY : 500 Kg</b>
<b>MFG. DATE : AUGUST.2013</b>		<b>EXP. DATE : JULY.2018</b>
<b>QC A.R. No.: FP/184/2013</b>		
TESTS	RESULTS	SPECIFICATIONS
<b>01. CHARACTERS</b>		
i. Appearance	A white, crystalline powder.	White or almost white, crystalline powder.
ii. Solubility	Freely soluble in water, in methanol and in methylene chloride, slightly soluble in anhydrous ethanol.	Freely soluble in water, in methanol and in methylene chloride, slightly soluble in anhydrous ethanol.
iii. Melting point	Melted at 213°C with decomposition	Melts at about 213° C with decomposition.
<b>02. IDENTIFICATION</b>		
IR Absorption	Concordant with working standard	IR Absorption spectrum of the sample is concordant with that of the Diltiazem hydrochloride CRS / working standard.
CHLORIDES	Positive	It gives reaction to chlorides.
<b>03. APPEARANCE OF SOLUTION</b>	Clear and colorless	Clear and colourless.
<b>04. pH</b>	4.9	4.3 to 5.3
<b>05. SPECIFIC OPTICAL ROTATION</b>	+117°	+ 115° to + 120°
<b>06. RELATED SUBSTANCES</b>		
i. Impurity F	Not Quantified	Not more than 0.3% w/w
ii. Unspecified Impurities	Not Quantified	Not more than 0.10% w/w each
iii. Total Impurities	Not Quantified	Not more than 0.30% w/w
<b>07. HEAVY METALS</b>	Less than 10 ppm	Not more than 10 ppm
<b>08. LOSS ON DRYING</b>	0.20%	Not more than 0.50% w/w
<b>09. SULPHATED ASH</b>	0.03%	Not more than 0.10% w/w
<b>10. ASSAY (By Titration)</b>	100.00%	Not less than 98.50% w/w and Not more than 101.00% w/w
<b>(On dried basis)</b>		
<b>ADDITIONAL TEST:</b>		
<b>PARTICLE SIZE</b>		
100%	24 Microns	100% Less than 100 Microns
<b>Surface Area</b>	1.84 m <sup>2</sup> /gm	For Information
<b>RESIDUAL SOLVENTS</b>		
Toluene	249 ppm	Not more than 750 ppm
Methanol	86 ppm	Not more than 500 ppm
Isopropyl Alcohol	2 ppm	Not more than 1000 ppm
Ethyl Acetate	1 ppm	Not more than 2500 ppm
<b>Bulk Density</b>	0.26 g/ml	For Information
<b>Tapped Density</b>	0.48 g/ml	For Information

**REMARKS:** The product conforms to Ph.Eur.-7.7 & Customer's Specifications

*Prepared by*  
**Prepared by**  
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*Checked by*  
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