d-Chlorpheniramine Maleate Extenderelease Tablets

Dissolution *<6.10>*

[pH 1.2] Perform the test with 1 tablet of *d*-Chlorpheniramine Maleate Extenderelease Tablets at 50 revolutions per minute according to the Paddle method, using 900 mL of 1st fluid for dissolution test as the dissolution medium. Start the test, withdraw not less than 20 mL of the medium at the specified minute after starting the test, and filter through a membrane filter with a pore size not exceeding 0.45 μm. Discard the first 10 mL of the filtrate, pipet V mL of the subsequent filtrate, and add 1st fluid for dissolution test to make exactly V' mL so that each mL contains about 6.7 μg of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$) according to the labeled amount. Pipet 10 mL of this solution, add 2nd fluid for dissolution test to make exactly 20 mL, and use this solution as the sample solution. Separately, weigh accurately about 33 mg of *d*-Chlorpheniramine Maleate RS, previously dried at 65ºC for 4 hours, and dissolve in 1st fluid for dissolution test to make exactly 100 mL. Pipet 2 mL of this solution, add 1st fluid for dissolution test to make exactly 100 mL. Pipet 10 mL of this solution, add 2nd fluid for dissolution test to make exactly 20 mL, and use this solution as the standard solution. Perform the test with exactly 50 μL each of the sample solution and standard solution as directed under Liquid Chromatography *<2.01>* according to the following conditions, and determine the peak areas, A_T and A_S, of *d*-chlorpheniramine of both solutions.

The requirements are met if *d*-Chlorpheniramine Maleate Extenderelease Tablets conform to the dissolution requirements.

Dissolution rate (%) with respect to the labeled amount of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$)

$$= M_S \times A_T/A_S \times V'/V \times 1/C \times 18$$

M_S: Amount (mg) of *d*-Chlorpheniramine Maleate RS

C: Labeled amount (mg) of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$) in 1 tablet

[pH 6.8] Perform the test with 1 tablet of *d*-Chlorpheniramine Maleate Extenderelease Tablets at 50 revolutions per minute according to the Paddle method, using 900 mL of 2nd fluid for dissolution test as the dissolution medium. Start the test, withdraw 20 mL of the medium at the specified minute after starting the test, and immediately fill up the dissolution medium with exactly 20 mL of the 2nd fluid for dissolution test, previously warmed to 37 ± 0.5ºC, carefully. Filter these media through a membrane filter with a pore size not exceeding 0.45 μm. Discard the first 10 mL of the filtrate, pipet V mL of the subsequent filtrate, add 2nd fluid for dissolution test to make exactly V' mL so that each mL contains about 6.7 μg of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$) according to the

labeled amount, and use this solution as the sample solution. Separately, weigh accurately about 33 mg of *d*-Chlorpheniramine Maleate RS, previously dried at 65ºC for 4 hours, and dissolve in 2nd fluid for dissolution test to make exactly 100 mL. Perform the test with exactly 50 μL each of the sample solution and standard solution as directed under Liquid Chromatography *<2.01>* according to the following conditions, and determine the peak areas, A_T and A_S, of *d*-chlorpheniramine of both solutions.

The requirements are met if *d*-Chlorpheniramine Maleate Extenderelease Tablets conform to the dissolution requirements.

Dissolution rate (%) with respect to the labeled amount of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$) on the *n*th dissolution medium withdrawing (*n*=1, 2)

$$= M_S \times \left\{ \frac{A_{T(n)}}{A_S} + \sum_{i=1}^{n-1} \left(\frac{A_{T(i)}}{A_S} \times \frac{1}{45} \right) \right\} \times \frac{V'}{V} \times \frac{1}{C} \times 18$$

M_S: Amount (mg) of *d*-Chlorpheniramine Maleate RS

C: Labeled amount (mg) of *d*-chlorpheniramine maleate ($C_{16}H_{19}ClN_2 \cdot C_4H_4O_4$) in 1 tablet

Operating conditions−

Detector: An ultraviolet absorption photometer (wavelength: 262 nm).

Column: A stainless steel column 4.6 mm in inside diameter and 15 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 μm in particle diameter).

Column temperature: A constant temperature of about 40ºC.

Mobile phase: Dissolve 3.0 g of sodium lauryl sulfate and 1 mL of phosphoric acid in water to make 1000 mL. To 900 mL of this solution add 1100 mL of acetonitrile.

Flow rate: Adjust the flow rate so that the retention time of *d*-chlorpheniramine is about 6 minutes.

System suitability−

System performance: When the procedure is run with 50 μL of the standard solution under the above operating conditions, the number of theoretical plates and the symmetry factor of the peak of *d*-chlorpheniramine are not less than 3000 and not more than 2.0, respectively.

System repeatability: When the test is repeated 6 times with 50 μL of the standard solution under the above operating conditions, the relative standard deviation of the peak area of *d*-chlorpheniramine is not more than 2.0%.

Dissolution Requirements

Labeled amount	Specified minute	Dissolution rate
6 mg	120 minutes (pH 1.2)	40−60%
	4 hours (pH 6.8)	25−55%
	24 hours (pH 6.8)	Not less than 85%

***d*-Chlorpheniramine Maleate RS** *d*-Chlorpheniramine Maleate (JP).