Pimozide Tablets

DEFINITION

Pimozide Tablets contain NLT 90.0% and NMT 110.0% of the labeled amount of pimozide ($C_{28}H_{29}F_2N_3O$).

IDENTIFICATION

Change to read:

- **A.** •**INFRARED ABSORPTION** ⟨**197**⟩**:** [NOTE—Methods described in ⟨197K⟩ or ⟨197A⟩ may be used.]• (IRA 1-Nov-2016)
  Sample: Grind an appropriate number of Tablets to prepare a 1-mg/mL solution of pimozide in dichloromethane. Shake the solution for 5 min, and pass through a suitable filter. Evaporate the filtrate to dryness under reduced pressure. •Use the dried residue.• (IRA 1-Nov-2016)
  Acceptance criteria: •Meet the requirements• (IRA 1-Nov-2016)
- **B.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.

ASSAY

- **PROCEDURE**

Protect all pimozide solutions from light.
Solution A: 2.5 g/L of ammonium acetate and 8.5 g/L of tetrabutylammonium hydrogen sulfate in water
Solution B: Acetonitrile
Mobile phase: See *Table 1*.

Table 1

Time (min)	Solution A (%)	Solution B (%)
0	80	20
10	70	30
15	70	30
16	80	20
30	80	20

System suitability solution: 0.04 mg/mL of USP Pimozide RS and 0.02 mg/mL of USP Mebendazole RS in methanol
Standard solution: 0.4 mg/mL of USP Pimozide RS in methanol
Sample solution: Nominally 0.4 mg/mL of pimozide prepared as follows. Transfer a suitable number of powdered Tablets (NLT 20) to a suitable volumetric flask. Add about 70% of the flask volume of methanol, and mechanically shake for 30 min. Dilute with methanol to volume, and mix well with the aid of sonication for 10 min. Centrifuge, and pass a portion of the supernatant through a suitable filter of 0.45-µm pore size.
Chromatographic system
(See *Chromatography* ⟨621⟩*, System Suitability*.)
Mode: LC
Detector: UV 280 nm
Column: 4.6-mm × 10-cm; 3-µm packing L1
Flow rate: 2 mL/min
Injection volume: 10 µL
System suitability
Samples: *System suitability solution* and *Standard solution*
[NOTE—The relative retention times for mebendazole and pimozide are 0.88 and 1.0, respectively.]
Suitability requirements
Resolution: NLT 5.0 between the pimozide and mebendazole peaks, *System suitability solution*
Relative standard deviation: NMT 2.0% for pimozide, *Standard solution*
Analysis
Samples: *Standard solution* and *Sample solution*
Calculate the percentage of the labeled amount of pimozide ($C_{28}H_{29}F_2N_3O$) in the portion of Tablets taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = peak response of pimozide from the *Sample solution*
r_S = peak response of pimozide from the *Standard solution*
C_S = concentration of USP Pimozide RS in the *Standard solution* (mg/mL)
C_U = nominal concentration of pimozide in the *Sample solution* (mg/mL)

Acceptance criteria: 90.0%–110.0%

PERFORMANCE TESTS

Change to read:

- **DISSOLUTION** ⟨**711**⟩
Medium: 0.01 N hydrochloric acid; 900 mL
Apparatus 2: 50 rpm
Time: 30 min
•**Buffer:** 5 g/L of ammonium acetate in water. Adjust with glacial acetic acid to a pH of 4.5.
Mobile phase: Acetonitrile and *Buffer* (40:60)
Standard solution: (*L*/900) mg/mL of USP Pimozide RS in *Mobile phase*, where *L* is the label claim of pimozide in mg/Tablet
Sample solution: Pass a portion of the solution under test through a suitable filter of 0.45-µm pore size.
Chromatographic system
(See *Chromatography* ⟨621⟩*, System Suitability*.)
Mode: LC
Detector: UV 280 nm
Column: 3.0-mm × 25-cm; 5-µm packing L1
Flow rate: 0.8 mL/min
Injection volume: 100 µL
Run time: 2.5 times the retention time of pimozide
System suitability
Sample: *Standard solution*
Suitability requirements
Tailing factor: NMT 2.0
Relative standard deviation: NMT 2.0%
Analysis
Samples: *Standard solution* and *Sample solution*
Calculate the percentage of the labeled amount of pimozide ($C_{28}H_{29}F_2N_3O$) dissolved:

$$\text{Result} = (r_U/r_S) \times C_S \times V \times (1/L) \times 100$$

r_U = peak response of pimozide from the *Sample solution*
r_S = peak response of pimozide from the *Standard solution*
C_S = concentration of USP Pimozide RS in the *Standard solution* (mg/mL)
V = volume of *Medium*, 900 mL
L = label claim (mg/Tablet)• (IRA 1-Nov-2016)

Tolerances: NLT 80% (*Q*) of the labeled amount of pimozide ($C_{28}H_{29}F_2N_3O$) is dissolved.

- **UNIFORMITY OF DOSAGE UNITS** ⟨**905**⟩**,** *Content Uniformity***:** Meet the requirements

IMPURITIES

Change to read:

- **ORGANIC IMPURITIES**

Protect all pimozide solutions from light.

Solution A, Solution B, Mobile phase, System suitability solution, and **Chromatographic system:** Proceed as directed in the *Assay*.

Standard solution: 0.01 mg/mL of USP Pimozide RS in methanol

Sample solution: Nominally 2 mg/mL of pimozide prepared as follows. Transfer a suitable number of powdered Tablets (NLT 20) to a suitable volumetric flask. Add about 70% of the flask volume of methanol, and mechanically shake for 30 min. Dilute with methanol to volume, and mix well with the aid of sonication for 10 min. Centrifuge, and pass a portion of the supernatant through a suitable filter of 0.45-µm pore size.

System suitability

Samples: *System suitability solution* and *Standard solution*

[NOTE—The relative retention times for mebendazole and pimozide are 0.88 and 1.0, respectively.]

Suitability requirements

Resolution: NLT 5.0 between pimozide and mebendazole, *System suitability solution*

Relative standard deviation: NMT 5.0%, *Standard solution*

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of each impurity in the portion of Tablets taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = peak response of each impurity from the *Sample solution*

r_S = peak response of pimozide from the *Standard solution*

C_S = concentration of USP Pimozide RS in the *Standard solution* (mg/mL)

C_U = nominal concentration of pimozide in the *Sample solution* (mg/mL)

Acceptance criteria

•**Any individual degradation product:** NMT 1.0%

Total degradation products: NMT 2.0%• (IRA 1-Nov-2016)

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers. Store at controlled room temperature.
- **USP REFERENCE STANDARDS** ⟨**11**⟩

USP Mebendazole RS

USP Pimozide RS