Mode: LC
Detector: UV 254 nm
Column: 4.6-mm × 25-cm; packing L1
Flow rate: 2 mL/min
Injection volume: 20 µL
System suitability
Sample: *Standard solution*
Suitability requirements
Tailing factor: NMT 1.5
Relative standard deviation: NMT 0.73%
Analysis
Samples: *Standard solution* and *Sample solution*
Calculate the percentage of acetazolamide ($C_4H_6N_4O_3S_2$) in the portion of Acetazolamide taken:

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

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

Acceptance criteria: 98.0%–102.0% on the anhydrous basis

IMPURITIES

- **RESIDUE ON IGNITION** ⟨281⟩: NMT 0.1%
- **CHLORIDE AND SULFATE** ⟨221⟩, *Chloride*
  Sample solution: Digest 1.5 g with 75 mL of water at about 70° for 5 min. Cool to room temperature, and filter.
  Acceptance criteria: A 25-mL portion of the filtrate shows no more chloride than corresponds to 0.10 mL of 0.020 N hydrochloric acid (0.014%).
- **CHLORIDE AND SULFATE** ⟨221⟩, *Sulfate*
  Sample solution: A 25-mL portion of the filtrate prepared in the test for *Chloride*
  Acceptance criteria: It shows no more sulfate than corresponds to 0.20 mL of 0.020 N sulfuric acid (0.04%).
- **SELENIUM** ⟨291⟩
  Sample: 200 mg
  Acceptance criteria: NMT 30 ppm

Delete the following:

- **HEAVY METALS,** *Method II* ⟨231⟩: NMT 20 ppm (Official 1-Jan-2018)
- **SILVER-REDUCING SUBSTANCES**
  Sample: 5 g
  Analysis: Thoroughly wet the *Sample* with alcohol. Add 125 mL of water, 10 mL of nitric acid, and 5.0 mL of 0.1 N silver nitrate VS. Stir with a mechanical stirrer for 30 min. Filter, add 5 mL of ferric ammonium sulfate TS to the filtrate, and titrate with 0.1 N ammonium thiocyanate VS to a reddish-brown endpoint.
  Acceptance criteria: NLT 4.8 mL of 0.1 N ammonium thiocyanate is required.
- **ORGANIC IMPURITIES**
  Procedure: *Ordinary Impurities* ⟨466⟩
  Standard solution: Acetone and methanol (1:1)
  Test solution: Acetone and methanol (1:1)
  Eluant: *n*-Propyl alcohol and 1 N ammonium hydroxide (88:12)
  Visualization: 1

SPECIFIC TESTS

- **WATER DETERMINATION** ⟨921⟩, *Method I*: NMT 0.5%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight containers, and store at room temperature.

- **USP REFERENCE STANDARDS** ⟨11⟩
  USP Acetazolamide RS

Acetazolamide for Injection

DEFINITION

Acetazolamide for Injection is prepared from Acetazolamide with the aid of sodium hydroxide. It is suitable for parenteral use. The contents of each container, when constituted as directed in the labeling, yield a solution containing NLT 95.0% and NMT 110.0% of the labeled amount of acetazolamide ($C_4H_6N_4O_3S_2$).

IDENTIFICATION

- **A. INFRARED ABSORPTION** ⟨197K⟩
  Sample: Dissolve 500 mg in 5 mL of water, add 2 drops of hydrochloric acid, and allow the mixture to stand for about 15 min. Filter through a fine sintered-glass funnel, wash with several small portions of water, and dry under vacuum over silica gel for 3 h.
  Acceptance criteria: Meets the requirements
- **B.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.
- **C. IDENTIFICATION TESTS—GENERAL** ⟨191⟩, *Chemical Identification Tests, Sodium*: Meets the requirements

ASSAY

Change to read:

- **PROCEDURE**
  Mobile phase: Dissolve 4.1 g of anhydrous sodium acetate in 950 mL of water, add 20 mL of methanol and 30 mL of acetonitrile, and mix. Adjust with glacial acetic acid to a pH of 4.0.
  Standard solution: 0.1 mg/mL of USP Acetazolamide RS prepared as follows. Transfer USP Acetazolamide RS to a suitable volumetric flask, add 0.5 N sodium hydroxide equivalent to 10% of the final volume, and dilute with water to volume.
  Sample solution: Nominally ▲▲*USP41* 0.1 mg/mL of acetazolamide ▲from Acetazolamide for Injection▲*USP41* prepared as follows. Dissolve the contents of one container of Acetazolamide for Injection in a ▲▲*USP41* volume of water corresponding to the volume of solvent specified in the labeling. Dilute ▲▲*USP41* with water ▲as needed.▲*USP41*
  Chromatographic system
  (See *Chromatography* ⟨621⟩, *System Suitability*.)
  Mode: LC
  Detector: UV 254 nm
  Column: 4.6-mm × 25-cm; ▲10-µm▲*USP41* packing L1
  Flow rate: 2 mL/min
  Injection volume: 20 µL
  System suitability
  Sample: *Standard solution*
  Suitability requirements
  Tailing factor: NMT 1.5
  Relative standard deviation: NMT 1.0%
  Analysis
  Samples: *Standard solution* and *Sample solution*
  Calculate the percentage of the labeled amount of acetazolamide ($C_4H_6N_4O_3S_2$) in the portion of Acetazolamide for Injection taken:

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

r_U = peak response of acetazolamide from the *Sample solution*