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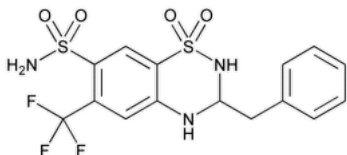
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Bendroflumethiazide

Change to read:


 $C_{15}H_{14}F_3N_3O_4S_2$ 421.41
2*H*-1,2,4-Benzothiadiazine-7-sulfonamide, 3,4-dihydro-3-(phenylmethyl)-6-(trifluoromethyl)-, 1,1-dioxide, (±)-;(±)-3-Benzyl-3,4-dihydro-6-(trifluoromethyl)-2*H*-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide CAS RN®: 73-48-3; ▲UNII: 5Q52X6ICJL▲ (USP 1-Dec-2021)

DEFINITION

Bendroflumethiazide contains NLT 98.0% and NMT 102.0% of bendroflumethiazide ($C_{15}H_{14}F_3N_3O_4S_2$), calculated on the anhydrous basis.

IDENTIFICATION

- **A. SPECTROSCOPIC IDENTIFICATION TESTS (197), Infrared Spectroscopy:** 197A or 197K
- **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

Use low-actinic glassware for the *Standard solution* and the *Sample solution*, and use the solutions within 30 min of preparation.**Diluent:** [Methanol](#) and [water](#) (80:20)**Mobile phase:** Dissolve 5.62 g of [sodium chloride](#) and 1.97 g of [anhydrous sodium sulfate](#) in 1000 mL of [water](#) in a 2-L volumetric flask. Add 4.0 mL of [glacial acetic acid](#) and 800 mL of [methanol](#), and dilute with [water](#) to volume.**Standard solution:** 0.05 mg/mL of [USP Bendroflumethiazide RS](#) in *Diluent***Sample solution:** 0.05 mg/mL of Bendroflumethiazide in *Diluent*

Chromatographic system

(See [Chromatography \(621\), System Suitability](#).)**Mode:** LC**Detector:** UV 270 nm**Column:** 4.6-mm × 15-cm; 5-μm packing [L11](#)**Column temperature:** 35°**Flow rate:** 1.5 mL/min**Injection volume:** 20 μL**Run time:** NLT 2 times the retention time of bendroflumethiazide

System suitability

Sample: *Standard solution*

Suitability requirements

Tailing factor: NMT 2.0**Relative standard deviation:** NMT 0.73%

Analysis

Samples: *Standard solution* and *Sample solution*Calculate the percentage of bendroflumethiazide ($C_{15}H_{14}F_3N_3O_4S_2$) in the portion of Bendroflumethiazide taken:

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

 r_U = peak response of bendroflumethiazide from the *Sample solution* r_S = peak response of bendroflumethiazide from the *Standard solution* C_S = concentration of [USP Bendroflumethiazide RS](#) in the *Standard solution* (mg/mL)

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

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

IMPURITIES

- **RESIDUE ON IGNITION (281):** NMT 0.2%

Delete the following:

- ▲ **SELENIUM (291).**

Sample: 100 mg of Bendroflumethiazide and 100 mg of magnesium oxide

Acceptance criteria: The absorbance from the *Test Solution* is NMT one-half that from the *Standard Solution* (NMT 30 ppm).▲ (USP 1-Dec-2021)

- **LIMIT OF 2,4-DISULFAMYL-5-TRIFLUOROMETHYLANILINE**

Use low-actinic glassware for the *Standard solution* and the *Sample solution*.

Mobile phase: Dissolve 5.62 g of [sodium chloride](#) and 1.97 g of [anhydrous sodium sulfate](#) in 1000 mL of [water](#) in a 2-L volumetric flask. Add 4.0 mL of [glacial acetic acid](#) and 800 mL of [methanol](#), and dilute with [water](#) to volume.

Standard solution: 0.75 µg/mL of [USP 2,4-Disulfamyl-5-trifluoromethylaniline RS](#) in [methanol](#)

Sample solution: 50 µg/mL of Bendroflumethiazide in [methanol](#)

Chromatographic system

(See [Chromatography \(621\), System Suitability](#).)

Mode: LC

Detector: UV 270 nm

Column: 4.6-mm × 30-cm; packing [L11](#)

Column temperature: 35°

Flow rate: 1.5 mL/min

Injection volume: 20 µL

System suitability

Sample: *Standard solution*

Suitability requirements

Resolution: NLT 1.4 between the methanol and 2,4-disulfamyl-5-trifluoromethylaniline peaks

Relative standard deviation: NMT 3.0% for 5 replicate injections

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of 2,4-disulfamyl-5-trifluoromethylaniline in the portion of Bendroflumethiazide taken:

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

r_U = peak response of 2,4-disulfamyl-5-trifluoromethylaniline from the *Sample solution*

r_S = peak response of 2,4-disulfamyl-5-trifluoromethylaniline from the *Standard solution*

C_S = concentration of [USP 2,4-Disulfamyl-5-trifluoromethylaniline RS](#) in the *Standard solution* (µg/mL)

C_U = concentration of Bendroflumethiazide in the *Sample solution* (µg/mL)

Acceptance criteria: NMT 1.5%

SPECIFIC TESTS

- **WATER DETERMINATION (921), Method I:** NMT 0.5%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight containers.

Change to read:

- **USP REFERENCE STANDARDS (11).**

[USP Bendroflumethiazide RS](#)

[USP 2,4-Disulfamyl-5-trifluoromethylaniline RS](#)

4-Amino-6-(trifluoromethyl)benzene-1,3-disulfonamide.

$C_7H_8F_3N_3O_4S_2$ ▲319.28▲ (USP 1-Dec-2021)

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
BENDROFLUMETHIAZIDE	Documentary Standards Support	SM22020 Small Molecules 2

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. 46(4)

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