

Status: Currently Official on 14-Feb-2025
 Official Date: Official as of 01-Aug-2021
 Document Type: USP Monographs
 DocId: GUID-47FD8DF7-BA38-42C1-887A-4B6FBEEE28A2_5_en-US
 DOI: https://doi.org/10.31003/USPNF_M43726_05_01
 DOI Ref: op76t

© 2025 USPC
 Do not distribute

Itraconazole Capsules

DEFINITION

Itraconazole Capsules contain NLT 90.0% and NMT 110.0% of the labeled amount of itraconazole ($C_{35}H_{38}Cl_2N_8O_4$).

IDENTIFICATION

- **A.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the Assay.
- **B.** The UV spectrum of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the Assay.

ASSAY

PROCEDURE

Solution A: 5.8 g/L of [monobasic ammonium phosphate](#) in [water](#). Adjust with [phosphoric acid](#) to a pH of 2.0. Pass through a suitable filter of 0.45-µm pore size.

Solution B: [Acetonitrile](#) and [tetrahydrofuran](#) (90:10)

Mobile phase: *Solution A* and *Solution B* (45:55)

Diluent: [Methanol](#) and [tetrahydrofuran](#) (50:50)

Standard solution: 0.1 mg/mL of [USP Itraconazole RS](#) in *Diluent*. Sonicate, if necessary, to dissolve.

Sample stock solution: Nominally 1 mg/mL of itraconazole in *Diluent* prepared as follows. Transfer an amount nominally equivalent to 100 mg of itraconazole, from the contents of NLT 20 Capsules, to a 100-mL volumetric flask. Add 70 mL of *Diluent*, and sonicate for about 30 min. Dilute with *Diluent* to volume. Pass through a suitable filter of 0.45-µm pore size.

Sample solution: Nominally 0.1 mg/mL of itraconazole in *Diluent* from the *Sample stock solution*

Chromatographic system

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

Mode: LC

Detector: UV 225 nm. For *Identification B*, use a diode array detector in the range of 200–400 nm.

Column: 4.6-mm × 15-cm; 3-µm packing [L1](#)

Column temperature: 30°

Flow rate: 1.5 mL/min

Injection volume: 10 µL

Run time: NLT 2 times the retention time of itraconazole

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 itraconazole ($C_{35}H_{38}Cl_2N_8O_4$) in the portion of Capsules taken:

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

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

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

C_S = concentration of [USP Itraconazole RS](#) in the *Standard solution* (mg/mL)

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

Acceptance criteria: 90.0%–110.0%

PERFORMANCE TESTS

Change to read:

- [DISSOLUTION \(711\)](#).

Test 1

Medium: 0.25% (w/v) sodium lauryl sulfate in [0.1 N hydrochloric acid](#); 900 mL

Apparatus 2: 75 rpm; with a three-prong sinker

Time: 45 min

Standard stock solution: 0.55 mg/mL of [USP Itraconazole RS](#) in 40% [glacial acetic acid](#). Sonicate, if necessary, to dissolve.

Standard solution: 0.02 mg/mL of [USP Itraconazole RS](#) in *Medium* from the *Standard stock solution*

Sample solution: A filtered portion of the solution under test, suitably diluted with *Medium*, to obtain a concentration similar to that of the *Standard solution*.

Blank: *Medium*

Instrumental conditions

Mode: UV

Analytical wavelength: 260 nm

System suitability

Sample: *Standard solution*

Suitability requirements

Relative standard deviation: NMT 2.0% for 5 replicates

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of itraconazole ($C_{35}H_{38}Cl_2N_8O_4$) released:

$$\text{Result} = (A_U/A_S) \times (C_S/L) \times V \times D \times 100$$

A_U = absorbance of the *Sample solution*

A_S = absorbance of the *Standard solution*

C_S = concentration of [USP Itraconazole RS](#) in the *Standard solution* (mg/mL)

L = label claim (mg/Capsule)

V = volume of *Medium*, 900 mL

D = dilution factor for the *Sample solution*, if applicable

Tolerances: NLT 80% (Q) of the labeled amount of itraconazole ($C_{35}H_{38}Cl_2N_8O_4$) is dissolved.

Test 2: If the product complies with this test, the labeling indicates that it meets USP *Dissolution Test 2*. All solutions containing itraconazole should be stored in low-actinic or amber glassware and protected from light.

Medium: Simulated gastric fluid without enzymes, deaerated; 900 mL

Apparatus 2: 100 rpm; with a sinker, ▲if necessary▲ (USP 1-Aug-2021)

Time: 60 min

▲Quantify the amount of itraconazole dissolved by one of the following procedures.

Spectrophotometric procedure▲ (USP 1-Aug-2021)

Standard stock solution: 0.55 mg/mL of [USP Itraconazole RS](#) in methanol prepared as follows. Transfer a suitable amount of [USP Itraconazole RS](#) to a suitable volumetric flask and add about 80% of the flask volume of methanol. Heat the solution to 65° in a water bath, with intermittent stirring, until dissolved. Dilute with methanol to final volume.

Standard solution: 0.022 mg/mL of [USP Itraconazole RS](#) in *Medium* from the *Standard stock solution*

Sample solution: Pass a portion of the solution under test through a suitable filter and dilute with *Medium*, if necessary.

Blank: *Medium*

Instrumental conditions

Mode: UV

Analytical wavelength: 255 nm

System suitability

Sample: *Standard solution*

Suitability requirements

Relative standard deviation: NMT 2.0%

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of itraconazole ($C_{35}H_{38}Cl_2N_8O_4$) dissolved:

$$\text{Result} = (A_U/A_S) \times (C_S/L) \times V \times D \times 100$$

A_U = absorbance of the *Sample solution*

A_S = absorbance of the *Standard solution*