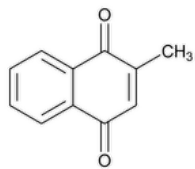


Status: Currently Official on 15-Feb-2025
Official Date: Official as of 01-May-2020
Document Type: USP Monographs
DocId: GUID-F9EA2311-0847-41FF-8293-25BD2FAC220B_3_en-US
DOI: https://doi.org/10.31003/USPNF_M48270_03_01
DOI Ref: 674p0

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Menadione



$C_{11}H_8O_2$ 172.18
1,4-Naphthalenedione, 2-methyl-;
2-Methyl-1,4-naphthoquinone CAS RN®: 58-27-5; UNII: 723JX6CXY5.

DEFINITION
Menadione contains NLT 98.5% and NMT 101.0% of menadione ($C_{11}H_8O_2$), calculated on the dried basis.

[CAUTION—Menadione powder is irritating to the respiratory tract and to the skin, and a solution of it in alcohol is a vesicant.]

IDENTIFICATION

Change to read:

- A. ▲ [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy: 197K](#)▲ (CN 1-MAY-2020)

Change to read:

- B. ▲ [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Ultraviolet-Visible Spectroscopy: 197U](#)▲ (CN 1-MAY-2020)

Standard solution: 5 µg/mL of [USP Menadione RS](#) in alcohol
Sample solution: 5 µg/mL in alcohol
Analytical wavelength: 250 nm
Acceptance criteria: Absorptivities, calculated on the dried basis, do not differ by more than 3.0%.

ASSAY

Change to read:

PROCEDURE

Sample solution: Transfer about 150 mg of Menadione into a 150-mL volumetric flask. Add 15 mL each of glacial acetic acid and 3 N hydrochloric acid, and rotate the flask until Menadione is dissolved. Add about 3 g of zinc dust, and close the flask with a stopper bearing a Bunsen valve. Shake, and allow to stand in the dark for 1 h, with frequent shaking. Rapidly decant the solution through a pledget of cotton into another flask, immediately wash the reduction flask with three 10-mL portions of freshly boiled and cooled water, and add 0.1 mL of orthophenanthroline TS.

Titrimetric system

Mode: Direct titration
Titrant: 0.1 N ceric sulfate VS
Endpoint detection: ▲Visual▲ (ERR 1-May-2020)

Analysis: Immediately titrate the combined filtrate and washings with *Titrant*. Perform a blank determination, and make any necessary correction. Each mL of 0.1 N ceric sulfate is equivalent to 8.609 mg of menadione ($C_{11}H_8O_2$).

Acceptance criteria: 98.5%–101.0% on the dried basis

IMPURITIES

- [RESIDUE ON IGNITION \(281\)](#): NMT 0.1%
- [ORDINARY IMPURITIES \(466\)](#)

Standard solution and Sample solution: Methanol
Eluant: Chloroform
Visualization: 1
Acceptance criteria: Meets the requirements

SPECIFIC TESTS

- [MELTING RANGE OR TEMPERATURE, Class I \(741\)](#): 105°–107°

- [Loss on Drying \(731\)](#)

Analysis: Dry over silica gel for 4 h.

Acceptance criteria: NMT 0.3%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in well-closed, light-resistant containers. Store at 25°, excursions permitted between 15° and 30°.
- **USP REFERENCE STANDARDS (11)**
[USP Menadione RS](#)

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

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

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. PF 29(5)

Current DocID: GUID-F9EA2311-0847-41FF-8293-25BD2FAC220B_3_en-US

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DOI ref: [674p0](#)

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