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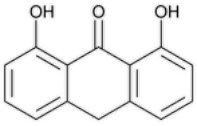
Anthralin



$C_{14}H_{10}O_3$ 226.23

9(10*H*)-Anthracenone, 1,8-dihydroxy-;

1,8-Dihydroxy-9-anthrone CAS RN®: 1143-38-0; UNII: U8CJK0JH5M.

DEFINITION

Anthralin contains NLT 97.0% and NMT 102.0% of anthralin ($C_{14}H_{10}O_3$), calculated on the dried basis.

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)

Sample solution: 10 µg/mL in chloroform

Acceptance criteria: Meets the requirements

ASSAY

• **Procedure**

[Note—Use low-actinic glassware.]

Mobile phase: *n*-Hexane, dichloromethane, and glacial acetic acid (82:12:6)

Internal standard solution: 0.5 mg/mL of *o*-nitroaniline in *n*-hexane prepared as follows. First dissolve *o*-nitroaniline in a small quantity of dichloromethane, and then dilute with *n*-hexane.

System suitability stock solution: 0.1 mg/mL of USP Anthralin RS and 0.2 mg/mL of danthron in dichloromethane

System suitability solution: Transfer 5 mL of the *System suitability stock solution* into a 25-mL volumetric flask, add 5 mL of *n*-hexane, and dilute with *Mobile phase* to volume.

Solvent blank solution: *Mobile phase*, *n*-hexane, and dichloromethane (3:1:1)

Standard stock solution: 0.25 mg/mL of USP Anthralin RS in dichloromethane

Standard solution: Transfer 5 mL each of *Standard stock solution* and *Internal standard solution* into a 25-mL volumetric flask, and dilute with *Mobile phase* to volume.

Sample stock solution: 0.25 mg/mL of Anthralin in dichloromethane

Sample solution: Transfer 5 mL each of *Sample stock solution* and *Internal standard solution* into a 25-mL volumetric flask, dilute with *Mobile phase* to volume.

Chromatographic system

(See *Chromatography ⟨621⟩, System Suitability*.)

Mode: LC

Detector: UV 354 nm

Column: 4.6-mm × 25-cm; packing L3

Flow rate: 2 mL/min

Injection volume: 10 µL

System suitability

Samples: *System suitability solution*, *Solvent blank solution*, and *Standard solution*

[Note—The relative retention times for anthralin, danthron, dianthrone, and *o*-nitroaniline are 1.0, 1.2, 1.7, and 2.3, respectively.]

Suitability requirements

Resolution: NLT 1.3 between anthralin and danthron, *System suitability solution*

Tailing factor: NMT 1.5, *System suitability solution*

Relative standard deviation: NMT 2.0% of the ratio of the peak responses, *Standard solution*

Interference: No discernible signal is observed at the retention time of anthralin, *Solvent blank solution*

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of anthralin ($C_{14}H_{10}O_3$) in the portion of Anthralin taken:

$$\text{Result} = (R_U/R_S) \times (C_S/C_U) \times 100$$

R_U = peak response ratio of anthralin to *o*-nitroaniline from the *Sample solution*

R_S = peak response ratio of anthralin to *o*-nitroaniline from the *Standard solution*

C_S = concentration of USP Anthralin RS in the *Standard solution* (µg/mL)

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

Acceptance criteria: 97.0%–102.0% on the dried basis

IMPURITIES

- **Residue on Ignition ⟨281⟩:** NMT 0.1%
- **Chloride and Sulfate, *Chloride*⟨221⟩**

Sample: 1 g

Analysis: To 15 mL of water add the *Sample*, mix, and filter. Acidify 5 mL of the filtrate with nitric acid, and add a few drops of silver nitrate TS.

Acceptance criteria: No more opalescence is produced immediately than is present in a 5-mL portion of the filtrate to which nothing has been added.

- **Chloride and Sulfate, *Sulfate*⟨221⟩**

Sample: 5 mL of the untreated filtrate obtained in the test for *Chloride*

Analysis: To the *Sample* add 3 drops of 3 N hydrochloric acid and 5 drops of barium chloride TS.

Acceptance criteria:

No more turbidity is produced than is present in a 5-mL portion of the filtrate to which nothing has been added.

SPECIFIC TESTS

- **Melting Range or Temperature, *Class I*⟨741⟩:** 178°–181°
- **Loss on Drying ⟨731⟩**

Analysis: Dry a sample over silica gel for 4 h.

Acceptance criteria: NMT 0.5%

- **Acidity or Alkalinity**

Analysis: Suspend a sample in water, and filter.

Acceptance criteria: The filtrate is neutral to litmus.

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in tight containers in a cool place. Protect from light.
- **USP Reference Standards ⟨11⟩**

USP Anthralin RS

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
ANTHRALIN	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
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