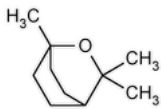


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Eucalyptol



C₁₀H₁₈O 154.25
1,3,3-Trimethyl-2-oxabicyclo[2.2.2]octane;
1,8-Epoxy-*p*-menthane CAS RN®: 470-82-6; UNII: RV6J6604TK.

DEFINITION
Eucalyptol is obtained from oil of eucalyptus and from other sources. It contains NLT 98.0% and NMT 100.0% of C₁₀H₁₈O.

IDENTIFICATION

Change to read:

- **A.** ▲ [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy: 197F](#) ▲ (CN 1-MAY-2020)
- **B.** Add 1 mL of phosphoric acid to 1 mL of Eucalyptol contained in a test tube maintained in an ice bath. A solid white crystalline mass is formed, from which eucalyptol separates upon addition of warm water.

ASSAY

PROCEDURE

System suitability solution: 0.2 mg/mL of limonene and 0.9 mg/mL of [USP Eucalyptol RS](#) in methanol
Sample solution: 0.9 mg/mL of Eucalyptol in methanol
Blank: Methanol
Chromatographic system
(See [Chromatography \(621\), System Suitability](#).)
Mode: GC
Detector: Flame ionization
Column: 0.32-mm × 60-m fused-silica capillary column coated with phase G16
Temperature
Injector port: 250°
Detector: 250°
Column: See [Table 1](#).

Table 1

Initial Temperature (°)	Temperature Ramp (°/min)	Final Temperature (°)	Hold Time at Final Temperature (min)
60	6	200	—

Split flow rate: 50 mL/min
Carrier gas: Helium
Column head pressure: 30 psi
Injection size: 1 µL
System suitability
Sample: *System suitability solution*
Suitability requirements
Resolution: NLT 2.0 between limonene and eucalyptol
Column efficiency: NLT 150,000 theoretical plates, eucalyptol
Analysis

Samples: *Sample solution* and *Blank*

[NOTE—Identify any peaks from the *Sample solution* that correspond to those in the *Blank* by their retention times.]

Calculate the percentage of eucalyptol (C₁₀H₁₈O) in the portion of Eucalyptol taken:

$$\text{Result} = (r_U/r_T) \times 100$$

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

r_T = sum of all peak responses from the *Sample solution*, other than the responses corresponding to those of the *Blank*

Acceptance criteria: 98.0%–100.0%

IMPURITIES

• LIMIT OF PHENOLS

Analysis 1: Shake 5 mL with 5 mL of sodium hydroxide TS.

Acceptance criteria 1: The volume of Eucalyptol is not diminished.

Analysis 2: Shake 1 mL with 20 mL of water and allow the liquids to separate. To 10 mL of the water layer add 1 drop of ferric chloride TS.

Acceptance criteria 2: The mixture develops no violet color.

SPECIFIC TESTS

- **SPECIFIC GRAVITY** (841): 0.921–0.924
- **CONGEALING TEMPERATURE** (651): NLT 0°
- **OPTICAL ROTATION, Angular Rotation** (781A): –0.5° to +0.5°
- **DISTILLING RANGE, Method I** (721): 174°–177°
- **REFRACTIVE INDEX** (831): 1.455–1.460 at 20°

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight containers.
- **USP REFERENCE STANDARDS** (11).
[USP Eucalyptol RS](#)

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

Topic/Question	Contact	Expert Committee
EUCALYPTOL	Documentary Standards Support	SM22020 Small Molecules 2
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM22020 Small Molecules 2

Chromatographic Database Information: [Chromatographic Database](#)

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