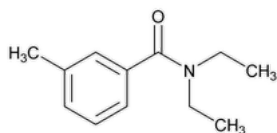


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Diethyltoluamide



$C_{12}H_{17}NO$ 191.27

Benzamide, *N,N*-diethyl-3-methyl-

N,N-Diethyl-*m*-toluamide CAS RN®: 134-62-3; UNII: FB0C1XZV4Y.

DEFINITION

Diethyltoluamide contains NLT 95.0% and NMT 103.0% of the *meta*-isomer of diethyltoluamide ($C_{12}H_{17}NO$), calculated on the anhydrous basis.

IDENTIFICATION

Change to read:

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

Solution A: 1 mL of phosphoric acid in 1000 mL of water

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

Diluent: Methanol and water (45:55)

System suitability solution: 0.2 mg/mL of [USP Diethyltoluamide RS](#) (*m*-isomer) and 0.02 mg/mL of [USP Diethyltoluamide Related Compound A RS](#) in *Diluent*. [NOTE—[USP Diethyltoluamide Related Compound A RS](#) is the *p*-isomer of diethyltoluamide.]

Standard solution: 0.2 mg/mL of [USP Diethyltoluamide RS](#) in *Diluent*

Sample solution: 0.2 mg/mL of Diethyltoluamide in *Diluent*

Chromatographic system

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

Mode: LC

Detector: UV 235 nm

Column: 4.6-mm × 15-cm; 3.5-μm packing L1

Flow rate: 1 mL/min

Injection volume: 10 μL

System suitability

Samples: *System suitability solution* and *Standard solution*

Suitability requirements

Resolution: NLT 1.5 between diethyltoluamide (*m*-isomer) and diethyltoluamide (*p*-isomer), *System suitability solution*

Tailing factor: NMT 2.0, *Standard solution*

Relative standard deviation: NMT 1.0%, *Standard solution*

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of diethyltoluamide ($C_{12}H_{17}NO$) in the portion of Diethyltoluamide taken:

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

r_U = peak response from the *Sample solution*

r_S = peak response from the *Standard solution*

C_S = concentration of the *Standard solution* (mg/mL)

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

Acceptance criteria: 95.0%–103.0% on the anhydrous basis

SPECIFIC TESTS

- **SPECIFIC GRAVITY (841):** 0.996–1.002
- **REFRACTIVE INDEX (831):** 1.520–1.524
- **ACIDITY**

Sample solution: Dissolve 10.0 g in 50 mL of neutralized alcohol, and add phenolphthalein TS.

Analysis: Titrate the *Sample solution* with 0.010 N sodium hydroxide.

Acceptance criteria: NMT 4.0 mL of 0.010 N sodium hydroxide is required.

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

ADDITIONAL REQUIREMENTS

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

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

[USP Diethyltoluamide RS](#)

[USP Diethyltoluamide Related Compound A RS](#)

N,N-Diethyl-4-toluamide.

$C_{12}H_{17}NO$ 191.27

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

Topic/Question	Contact	Expert Committee
DIETHYLTOLUAMIDE	Documentary Standards Support	SM12020 Small Molecules 1
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM12020 Small Molecules 1

Chromatographic Database Information: [Chromatographic Database](#)

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