

Status: Currently Official on 14-Feb-2025
 Official Date: Official Prior to 2013
 Document Type: Reagents
 DocId: GUID-FEDD6BF4-CD5E-4516-843D-B1C9B207ABA5_1_en-US
 DOI: https://doi.org/10.31003/USPNF_R1933_01_01
 DOI Ref: yc3wr

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N,N-Dimethylaniline,

$C_6H_5N(CH_3)_2$ 121.18 CAS RN[®]: 121-69-7.—Light yellow liquid. Clear, colorless liquid when freshly distilled, but acquiring a reddish to reddish-brown color. Specific gravity: about 0.960. Freezing point about 2°. Insoluble in water; soluble in alcohol, in chloroform, in ether, and in dilute mineral acids.

Assay: Inject an appropriate specimen (about 0.2 µL) into a suitable gas chromatograph (see [Chromatography \(621\)](#)) equipped with a flame-ionization detector, helium being used as the carrier gas flowing at about 40 mL per minute. The following conditions have been found suitable: a 3-mm × 1.8-m stainless steel column containing 20% phase G16 on support S1A; the injection port temperature is maintained at 250°; the column temperature is maintained at 50° and programmed to rise 10° per minute to 200°. The detector temperature is maintained at 310°. The area of the N,N-dimethylaniline peak having a retention time of about 11.5 minutes is not less than 99% of the total peak area.

REFRACTIVE INDEX (831): between 1.5571 and 1.5591 at 20°.

Boiling Range (Reagent test): Distill 100 mL: the difference between the temperatures observed, when 1 mL and 95 mL have distilled, is not more than 2.5°. Its boiling temperature at a pressure of 760 mm of mercury is 194.2°.

Hydrocarbons: Dissolve 5 mL in a mixture of 10 mL of hydrochloric acid and 15 mL of water: a clear solution results and it remains clear on cooling to about 10°.

Aniline or Monomethylaniline: Place 5 mL in a glass-stoppered flask, add 5 mL of a solution of acetic anhydride in benzene (1 in 10), mix, and allow to stand for 30 minutes. Add 30.0 mL of 0.5 N sodium hydroxide VS, shake the mixture, add phenolphthalein TS, and titrate with 0.5 N hydrochloric acid VS. Perform a blank determination, and make any necessary correction. Not more than 0.30 mL of 0.5 N sodium hydroxide is consumed by the test specimen.

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

Topic/Question	Contact	Expert Committee
N,N-DIMETHYLANILINE	Margareth R.C. Marques Principal Scientific Liaison	HDQ Headquarters

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