

TOLUENE

Prepared at the 25th JECFA (1981), published in FNP 19 (1981) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). An ADI 'not specified' was established at the 25th JECFA (1981) (No toxicological problems from residues as a food solvent in accordance with GMP)

SYNONYMS Toluol, phenylmethane

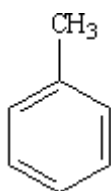
DEFINITION

Chemical names Toluene, methylbenzene

C.A.S. number 108-88-3

Chemical formula C_7H_8

Structural formula



Formula weight 92.13

Assay Not less than 99%

DESCRIPTION Clear, colourless liquid with a characteristic odour

FUNCTIONAL USES Extraction solvent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Very slightly miscible with water; miscible with ethanol

Specific gravity (Vol. 4) 0.864 - 0.870

PURITY

Distillation range (Vol. 4) Not more than 1° including 110.6°

Colour Not more than Colour Standard No. 20

Non-volatile residue (Vol. 4) Not more than 5 mg/100 ml

Sulfur compounds Passes test
See description under TESTS

Non-aromatic substances Not more than 0.2% v/v
Proceed as directed in the *Aromatic Hydrocarbons Determination* and calculate the content of non-aromatic substances by the method of area percentage (area normalization)

Benzene Not more than 0.5% v/v
Proceed as directed under the *Aromatic Hydrocarbons Determination*

Lead (Vol. 4) Not more than 2 mg/kg
Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, "Instrumental Methods."

TESTS

PURITY TESTS

Sulfur compounds Negative for hydrogen sulfide and sulfur dioxide by the following test:

Reagents

- Lead acetate solution (saturated)
- Potassium Iodate Solution (10 g of KIO_3 /100 ml)
- Starch Paper: Dip strips of filter paper in starch solution and dry.

Procedure

Make a qualitative test for hydrogen sulfide (H_2S) and sulfur dioxide (SO_2) at the time of performing the distillation test. This is done by hanging a strip of filter paper moisten with the lead acetate solution and a strip of starch paper moistened with the potassium iodate solution on the end of the condenser tube. The strips are so placed that they are suspended in the upper part of the receiving cylinder so that drops of condensate pass between the strips without touching them. If, at the end of the test, the lead acetate paper shows discoloration, H_2S is present, but not SO_2 . If the lead acetate paper shows no discoloration but the starch iodate paper develops a blue colour, SO_2 is present but not H_2S . If neither paper shows discoloration, neither H_2S nor SO_2 is present.