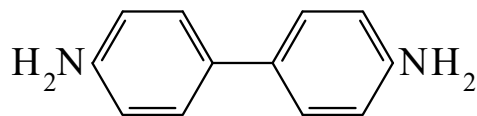




>>Entry Name: 4,4'-Diaminobiphenyl

Synonym(s): [1,1'-Biphenyl]-4,4'-diamine, 9Cl. Benzidine, 8Cl. *p,p'*-Bianiline



CAS Registry Number: 92-87-5

Molecular Formula: C₁₂H₁₂N₂

Molecular Weight: 184.24

Accurate Mass: 184.100048

Percentage Composition: C 78.23%; H 6.56%; N 15.20%

Source/Synthesis: Manuf. by reduction of corresponding nitro compound or by benzidine rearrangement of hydrazobenzene

Use/Importance: Used for pptn. of SO₄²⁽⁻⁾, WO₄²⁽⁻⁾; gives colour reactions with Au(III), Tl(III), Cl₂; used for photometric detn. of CN⁽⁻⁾, NO₂⁽⁻⁾, ClO₃⁽⁻⁾, SO₄²⁽⁻⁾ (indirectly).

Use now restricted due to carcinogenicity. Monomer for polyamides and polyimides

Physical Description: Cryst. (H₂O or EtOH)

Melting Point: Mp 128°

Boiling Point: Bp₇₄₀ 400°

Solubility: Sol. EtOH, Et₂O; sl. sol. H₂O

pKa Value: pK_{a1} 4.95; pK_{a2} 3.85 (25°)

Other Data: There are also two metastable forms, Mps 122° and 125°

Hazard & Toxicity: Human carcinogen. Use prohibited in the UK under the Control of Substances Hazardous to Health Regulation 1988. Occup. use associated with development of bladder cancer. Exp. carcinogen. Other systemic effects on blood, liver and kidneys

Fluka: 12115

Sigma: B3503

Supelco: 4-8504

>>Derivative: Hydrochloride (1:2)

CAS Registry Number: 531-85-1

Physical Description: Leaflets

Solubility: Sol. H₂O

Fluka: 12125

Rare Chemicals Library: S44008-6

Sigma: B0386

>>Derivative: Sulfate

CAS Registry Number: 531-86-2

Physical Description: Scales

Solubility: Prac. insol. H₂O, EtOH

Fluka: 12130

Rare Chemicals Library: S56355-2

>>Derivative: Picrate (1:2)

CAS Registry Number: 41412-45-7

Physical Description: Yellow powder (C₆H₆)

Melting Point: Mp 230 dec.°

>>Derivative: *N*-Ac

CAS Registry Number: 3366-61-8

Molecular Formula: C₁₄H₁₄N₂O

Molecular Weight: 226.277

Accurate Mass: 226.110613

Percentage Composition: C 74.31%; H 6.24%; N 12.38%; O 7.07%

Physical Description: Needles (EtOH aq.)

Melting Point: Mp 204.5-205.5° (199°)