

## Benzene

It is primarily used as a chemical raw material in the synthesis of styrene (polystyrene plastics and synthetic rubber), phenol (phenolic resins), cyclo hexane (nylon), aniline maleic anhydride (polyester resins), alkyl benzenes (detergents), chloro benzenes, and other products used in the production of drugs, dyes, insecticides and plastics.

### BENZENE CONFORMS TO IS 534:1992 SPECIFICATIONS

#### BENZENE SPECIFICATION:

Sr. No.	Characteristics	Requirements			Method of test (*)	
		Type A	Type B	Type C	Annex	Other Indian Standard
i)	Colour, Platinum-cobalt scale, max	15	20	30		IS 8768:1988
ii)	Relative density at 15.6/15.6 °c	0.879 to 0.886	0.879 to 0.886	0.872 to 0.882	Density correction to 15°C (given as Annexure K in the standard)	IS 1448[P:16]:1990
iii)	Distillation range	The difference between the temperatures (running points) at which 1 and 96 percent of the volume taken have been collected shall not exceed 0.6 °c. this range shall include the temperature of 80.1 °c	The difference between the temperatures (running points) at which 1 and 96 percent of the volume taken have been collected shall not exceed 0.6 °c. this range shall include the temperature of 80.1 °c	The difference between the temperatures (running points) at which 1 and 96 percent of the volume taken have been collected shall not exceed 0.6 °c. this range shall include the temperature of 80.1 °c	A (see Note)	
iv)	Residue on evaporation, mg/100 ml, max.	5	5	5		8 of IS 82:1973
v)	Total sulphur, mg/kg, max.	2	100	1000	Determination of total sulphur content given in annex B of the standard	
vi)	Solidification point, °c, min.	5.3	5.3	4.85	Determination of solidification point given in the annex C of	

					the standard	
vii)	Neutrality	Shall not give acidic reaction	Shall not give acidic reaction	Shall not give acidic reaction	Neutrality test given in annex D of the standard.	
viii)	Acid wash colour, colour standard, max.	0.3	0.3	1.0	Acid wash test given in the annex E of the standard	
ix)	Copper corrosion	To pass the test	To pass the test	To pass the test	Copper corrosion test given in the annex F of the standard	
x)	Aromatic impurities (other than benzene) mg/kg, max.	300	500	-	Analysis of aromatic impurities by gas chromatography given in the annex G of the standard	-
xi)	n-heptane, higher aliphatic and alicyclic compounds (Cyclohexane and methyl hexane) mg/kg, max.	50	-	-	Analysis of n-heptane, higher aliphatic & alicyclic compounds by gas chromatography given in the annex G of the standard	-
xii)	Bromine index, max.	10	-	-	Determinations of bromine index given in annex H of the standard.	-

#### Note

(\*) preparation of material for test-prepare a mixture of equal parts of anhydrous sodium sulphate (Previously dried at 150 °c for two hours) and sodium sulphate decahydrate. Both salts shall be finely powdered . Place 120 ml of the material in a dry, wide mouth glass-stoppered bottle having a capacity about 20% greater than the volume taken. To this add 5% (m/v) of the sodium sulphate mixture. Close the bottle and place it up to the base of the neck in a water bath at an ambient temperature. Shake the bottle vigorously at intervals of 5 min. over a period of 20 min. Allow to stand in the water bath for further 10 min. Remove the bottle from water bath, quickly dry the outside and decant the sample in a cool, empty, dry that has previously been heated at 110 °c in an oven. Close this bottle securely and use the treated sample for determination of distillation range. Fused calcium securely and use the treated sample for determination of distillation range. Fused calcium chloride or plaster of paris may also be used to the extent of 5 % (m/v) for the preparation of material for the test.