

# HEPTANES


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## DEFINITION

These specifications refer to the heptane petroleum hydrocarbon fraction which contains isomers of the empirical formula  $C_7H_{16}$ . The relative proportion of isomers varies with the production lot. The most prevalent components are: n-heptane, dimethylcyclopentanes, 3-ethylpentane, methyl-cyclohexane and 3-methylhexane.

C.A.S. number 142-82-5 (n-heptane)

Chemical formula  $C_7H_{16}$

Structural formula 

Formula weight 100.2 (n-heptane)

## DESCRIPTION

Clear colourless mobile highly flammable liquid with a petroleum odour

**FUNCTIONAL USES** Extraction solvent

## CHARACTERISTICS

### IDENTIFICATION

Solubility (Vol. 4) Insoluble in water

Specific gravity (Vol. 4) 0.700 - 0.720

### PURITY

Distillation range (Vol. 4) 95% v/v distils between 94 and 99°

Non-volatile residue (Vol. 4) Not more than 0.5 mg/100 ml

Sulfur (Vol. 4) Not more than 5 mg/kg

Benzene (Vol. 4) Not more than 0.05%  
Determine benzene content by the *Aromatic Hydrocarbons Determination*

Polycyclic aromatic hydrocarbon Passes test  
See description under TESTS

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

#### Polycyclic aromatic hydrocarbon

Transfer 25.0 ml of sample to a 125 ml separator and add 25 ml of hexane. Mix and add 5.0 ml of dimethyl sulfoxide. Shake vigorously for 1 min. and allow to stand until two clear layers are formed. Transfer the lower layer to a second separating funnel, add 2 ml of hexane and shake the mixture vigorously. Allow to stand until two clear layers are formed. Separate the lower layer and measure its absorbance over the range 260 nm to 420 nm using as compensation liquid the clear lower layer obtained by vigorously shaking 5.0 ml of dimethyl sulfoxide with 25 ml of hexane for 1 min.

Prepare a reference solution in trimethylpentane containing 7.0 mg of naphthalene per liter and measure the absorbance of that solution at the maximum at 275 nm using trimethylpentane as compensation liquid. At no wavelength in the range 260 nm to 420 nm does the absorbance of the test solution exceed one-third that of the reference solution at 275 nm.

Use hexane, dimethyl sulfoxide and trimethylpentane of suitable quality, such as that specified for ultraviolet spectrophotometry.