



Diisobutyl Ketone

Product Code	S1226
Region	Europe
Product Category	Ketones
CAS Registry Number	108-83-8
Synonym(s)	DIBK; isovalerone; 2,6[4,6]-dimethyl-4[2]-heptanone
Description	Diisobutyl ketone is a slow evaporating ketonic solvent which is immiscible with water, but miscible with other organic solvents. It is a light coloured liquid with a mild, characteristic odour. Shell DIBK is a mixture of two isomers: 2,6-dimethyl-4-heptanone and 4,6-dimethyl-2-heptanone in the ratio 2:1.

Typical Properties

Property	Unit	Method	Value
Purity, min.	%m/m	GC	94.0
Water	%m/m	ASTM D1364	0.03
Density at 20°C	kg/l	ASTM D4052	0.808
Specific Gravity at 20°C/20°C	-	ASTM D4052	0.810
Specific Gravity at 25°C/25°C	-	ASTM D4052	0.806
Coefficient of Cubic Expansion at 20°C	10 ⁻⁴ /°C	Calculated	10
Refractive Index at 20°C	-	ASTM D1218	1.413
Colour	Pt-Co	ASTM D1209	< 20
Boiling Point	°C	-	168
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	0.18
Relative Evaporation Rate (Ether=1)	-	DIN 53170	48
Antoine Constant A #	kPa. °C	-	6.07029
Antoine Constant B #	kPa. °C	-	1476.40
Antoine Constant C #	kPa. °C	-	195.000
Temperature Limits for Antoine Equation #	°C	-	+20 to +170
Vapour Pressure at 20°C	kPa	Calculated	0.16

Vapour Pressure at 50°C	kPa	Calculated	1.1
Saturated Vapor Concentration at 20°C	g/m ³	Calculated	9
Volatile Organic Compound (VOC)	g/l	EU / EPA	808
Flash Point (Abel)	°C	IP 170	50
Auto Ignition Temperature	°C	ASTM E659	345
Lower Explosion Limit	%v/v	-	0.8
Upper Explosion Limit	%v/v	-	6.2
Electrical Conductivity at 20°C	pS/m	ASTM D4308	4*10 ⁶
Dielectric Constant at 20°C	-	-	9.9
Freezing Point	°C	-	-42
Surface Tension at 20°C	mN/m	-	23
Viscosity at 20°C	mPa.s	-	0.92
Hildebrand Solubility Parameter	(cal/cm ³) ^{1/2}	-	7.8
Hydrogen Bonding Index	-	-	9.8
Fractional Polarity	-	-	0.123
Heat of Vaporisation at T _{boil}	kJ/kg	-	277
Heat of Combustion (Net) at 25°C	kJ/kg	-	37500
Specific Heat at 20°C	kJ/kg/°C	-	1.96
Thermal Conductivity at 20°C	W/m/°C	-	0.13
Miscibility at 20°C: Solvent in water	%m/m	-	0.05
Miscibility at 20°C: Water in solvent	%m/m	-	0.45
Azeotrope with Water: Boiling Point	°C	-	97.3
Azeotrope with Water: Solvent Content	%m/m	-	49.0
Molecular Weight	g/mol	-	142

(#) In the Antoine temperature range, the vapor pressure P (kPa) at temperature T (°C) can be calculated by means of the Antoine equation: $\log P = A - B/(T+C)$

Test Methods

Copies of copyrighted test methods can be obtained from the issuing organisations:

American Society for Testing and Materials (ASTM) : www.astm.org
Energy Institute (IP) : www.energyinst.org.uk
Deutsches Institut für Normung (DIN) : www.din.de

N.B: For routine quality control local test methods may be applied. Such methods have been validated against those mentioned in this datasheet.

Quality

Diisobutyl Ketone does not contain detectable quantities of polycyclic aromatics, heavy metals or chlorinated compounds.

Hazard Information

For detailed Hazard Information please refer to the Safety Data Sheet on www.shell.com/chemicals.

Storage Handling

Provided proper storage and handling precautions are taken we would expect Diisobutyl Ketone to be technically stable for at least 12 months. For detailed advice on Storage and Handling please refer to the Safety Data Sheet on www.shell.com/chemicals.

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