



Methyl Isobutyl Ketone

Product Code S1215

Region Europe

Product Category Ketones

CAS Registry Number 108-10-13

Synonym(s) 4-methyl-2-pentanone, MIBK

Description Methyl Isobutyl ketone, MIBK, a medium boiling ketone is a stable water-white liquid. Like acetone and MEK, it displays strong solvent power for cellulose esters vinyl polymers and copolymers, and most natural and synthetic resins. MIBK is a medium evaporating solvent with excellent solvency characteristics and with a high tolerance for hydrocarbon diluents.

Typical Properties

Property	Unit	Method	Value
Purity, min.	%m/m	GC	99.5
Water	%m/m	ASTM D1364	0.03
Acidity (as Acetic Acid)	%m/m	ASTM D1613	0.001
Density at 20°C	kg/l	ASTM D4052	0.800
Specific Gravity at 20°C/20°C	-	ASTM D4052	0.801
Specific Gravity at 25°C/25°C	-	ASTM D4052	0.798
Coefficient of Cubic Expansion at 20°C	10 ⁻⁴ /°C	Calculated	12
Refractive Index at 20°C	-	ASTM D1218	1.396
Colour	Pt-Co	ASTM D1209	< 5
Boiling Point	°C	-	116
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	1.6
Relative Evaporation Rate (Ether=1)	-	DIN 53170	7.2
Antoine Constant A #	kPa. °C	-	6.31286
Antoine Constant B #	kPa. °C	-	1449.92
Antoine Constant C #	kPa. °C	-	220.093

Temperature Limits for Antoine Equation #	°C	-	-20 to +120
Vapour Pressure at 20°C	kPa	Calculated	1.9
Vapour Pressure at 50°C	kPa	Calculated	8.8
Saturated Vapor Concentration at 20°C	g/m ³	Calculated	77
Volatile Organic Compound (VOC)	g/l	EU / EPA	800
Flash Point (Abel)	°C	IP 170	15
Auto Ignition Temperature	°C	ASTM E659	460
Lower Explosion Limit	%v/v	-	1.3
Upper Explosion Limit	%v/v	-	8
Electrical Conductivity at 20°C	pS/m	ASTM D4308	3*10 ⁷
Dielectric Constant at 20°C	-	-	13.1
Freezing Point	°C	-	-85
Surface Tension at 20°C	mN/m	-	24
Viscosity at 20°C	mPa.s	-	0.59
Hildebrand Solubility Parameter	(cal/cm ³) ^{1/2}	-	8.4
Hydrogen Bonding Index	-	-	10.5
Fractional Polarity	-	-	0.315
Heat of Vaporization at T _{boil}	kJ/kg	-	364
Heat of Combustion (Net) at 25°C	kJ/kg	-	35000
Specific Heat at 20°C	kJ/kg/°C	-	2.14
Thermal Conductivity at 20°C	W/m/°C	-	0.14
Miscibility at 20°C: Solvent in water	%m/m	-	2.0
Miscibility at 20°C: Water in solvent	%m/m	-	2.4
Azeotrope with Water: Boiling Point	°C	-	87.9
Azeotrope with Water: Solvent Content	%m/m	-	75.7
Molecular Weight	g/mol	-	100

(#) 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

Methyl Isobutyl Ketone can be supplied to meet the requirements of ASTM D1153 and DIN 53247. Methyl Isobutyl 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 Methyl Isobutyl 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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