



# Methyl Ethyl Ketone

Product Code	S2113
Region	Global
Product Category	Ketones
CAS Registry Number	78-93-3
Synonym(s)	2-Butanone, MEK

**Description** Methyl ethyl ketone, MEK, a low boiling, fast evaporating solvent is a colourless, stable liquid, partially miscible with water. MEK has exceptionally good solvency for many synthetic and natural resins that are used in the formulation of printing inks, lacquers, and other types of coatings.

## 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	0.002
Density at 20°C	kg/l	ASTM D4052	0.805
Specific Gravity at 20°C/20°C	-	ASTM D4052	0.806
Specific Gravity at 25°C/25°C	-	ASTM D4052	0.802
Coefficient of Cubic Expansion at 20°C	10 <sup>-4</sup> /°C	Calculated	13
Refractive Index at 20°C	-	ASTM D1218	1.379
Colour	Pt-Co	ASTM D1209	< 5
Boiling Point	°C	-	80
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	4.0
Relative Evaporation Rate (Ether=1)	-	DIN 53170	3.3
Antoine Constant A #	kPa. °C	-	6.18444
Antoine Constant B #	kPa. °C	-	1259.22
Antoine Constant C #	kPa. °C	-	221.758

Temperature Limits for Antoine Equation #	°C	-	-40 to +90
Vapour Pressure at 20°C	kPa	Calculated	9.5
Vapour Pressure at 50°C	kPa	Calculated	36
Saturated Vapor Concentration at 20°C	g/m <sup>3</sup>	Calculated	280
Volatile Organic Compound (VOC)	g/l	EU / EPA	805
Flash Point (Abel)	°C	IP 170	-6
Auto Ignition Temperature	°C	ASTM E659	515
Lower Explosion Limit	%v/v	-	1.8
Upper Explosion Limit	%v/v	-	11.5
Electrical Conductivity at 20°C	pS/m	ASTM D4308	2*10 <sup>7</sup>
Dielectric Constant at 20°C	-	-	18.5
Freezing Point	°C	-	-86
Surface Tension at 20°C	mN/m	-	25
Viscosity at 20°C	mPa.s	-	0.42
Hildebrand Solubility Parameter	(cal/cm <sup>3</sup> ) <sup>1/2</sup>	-	9.3
Hydrogen Bonding Index	-	-	10.5
Fractional Polarity	-	-	0.510
Heat of Vaporization at T <sub>boil</sub>	kJ/kg	-	433
Heat of Combustion (Net) at 25°C	kJ/kg	-	31500
Specific Heat at 20°C	kJ/kg/°C	-	2.19
Thermal Conductivity at 20°C	W/m/°C	-	0.15
Miscibility at 20°C: Solvent in water	%m/m	-	25
Miscibility at 20°C: Water in solvent	%m/m	-	12
Azeotrope with Water: Boiling Point	°C	-	73.4
Azeotrope with Water: Solvent Content	%m/m	-	88.7
Molecular Weight	g/mol	-	72

(#) 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](http://www.astm.org)  
Energy Institute (IP) : [www.energyinst.org.uk](http://www.energyinst.org.uk)  
Deutsches Institut für Normung (DIN) : [www.din.de](http://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 ethyl ketone as produced complies with ASTM D740 Type I (Regular grade), Type II (Urethane grade) and DIN 53247.

Methyl ethyl 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](http://www.shell.com/chemicals).

## Storage Handling

Provided proper storage and handling precautions are taken we would expect Methyl Ethyl 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](http://www.shell.com/chemicals).

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