



Data Sheet

Issued:

16-Mar-2007

Product Name

Methyl ethyl ketone

Product Code**S2113****Product Category****Ketones****CAS Registry Number**

78-93-3

EINECS Number

201-159-0

Alternate Name

2-Butanone, MEK

Description

Methyl ethyl ketone, MEK, a low boiling, fast evaporating solvent is a Methyl ethyl ketone, MEK, is a low boiling, fast evaporating solvent 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.

Sales Specification

Property	Unit	Min	Max	Method
Purity	%m/m	99.5		ASTM D2804
Total Alcohols	%m/m		0.5	ASTM D2804
Water	%m/m		0.05	ASTM D1364
Acidity as Acetic acid	%m/m		0.003	ASTM D1613
Appearance	Clear & Free From Suspended Matte			ASTM D4176
Color	Pt-Co		10	ASTM D1209
Density @20°C	g/mL	0.804	0.806	ASTM D4052 (4)
Refractive Index @20°C		1.378	1.380	ASTM D1218 (4)
Non Volatile Matter	g/100mL		0.002	ASTM D1353
Distillation, IBP	°C	79.0		ASTM D1078 (4)
Distillation, DP	°C		80.5	ASTM D1078 (4)

(4) Agreed Specification limits - no results: Statistical average value reported

Typical Properties

Property	Unit	Method	Value
Purity	% m/m	ASTM D2804	99.5
Water	% m/m	ASTM D1364	0.03
Density @20°C	kg/L	ASTM D4052	0.805
Cubic Expansion Coefficient @20°C	(10 ⁻⁴)/°C	-	13
Refractive Index @20°C	-	ASTM D1218	1.379
Color	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
Antoine Constants: Temperature range	°C	-	-40 to +90
Vapor Pressure @20°C	kPa	Calculated	9.5
Vapor Pressure @50°C	kPa	Calculated	36
Saturated Vapor Concentration @20°C	g/mL	Calculated	280
Flash Point	°C	IP 170	-6
Auto Ignition Temperature	°C	ASTM E659	515
Explosion Limit: Lower	%v/v	-	1.8
Explosion Limit: Upper	%v/v	-	11.5
Electrical Conductivity @20°C	µS/m	ASTM D4308	20
Dielectric Constant @20°C	-	-	18.5
Freezing Point	°C	-	-86
Surface Tension @20°C	mN/m	-	25
Viscosity @20°C	mPa.s	ASTM D445	0.42
Hildebrand Solubility Parameter	(cal/cm ³) ^{1/2}	-	9.3
Hydrogen Bonding Index	-	-	10.5
Fractional Polarity	-	-	0.510
Dilution Ratio: Toluene	-	ASTM D1720	4.1
Dilution Ratio: SBP 100/140	-	ASTM D1720	0.9
Heat of Vaporization @Tboil	kJ/kg	-	433
Heat of Combustion (Net) @25°C	kJ/kg	-	31500
Specific Heat @20°C	kJ/kg/°C	-	2.2
Thermal Conductivity @20°C	W/m/°C	-	0.15
Miscibility @20°C: Solvent in Water	% m/m	-	25
Miscibility @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	Calculated	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	<p>Copies of copyrighted test methods can be obtained from the issuing organisations:</p> <p>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</p> <p>For routine quality control analyses, local test methods may be applied that are different from those mentioned in this datasheet. Such methods have been validated and can be obtained through your local Shell Chemicals company.</p>
Quality	<p>Methyl ethyl ketone can be supplied to meet the requirements of ASTM D740 Type I (Regular grade) and Type II (Urethane grade), DIN 53247 and BS 1940. Methyl ethyl ketone does not contain detectable quantities of polycyclic aromatics, heavy metals or chlorinated compounds.</p>
Storage and Handling	<p>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 Material Safety Data Sheet on www.shell.com/chemicals.</p>
Hazard Information	<p>For detailed Hazard Information please refer to the Material Safety Data Sheet on www.shell.com/chemicals.</p>
Warranty	<p>All products purchased or supplied by Shell Chemicals are subject to terms and conditions set out in the relevant contract, order acknowledgment and/or bill of lading. The relevant Shell company warrants that its product will meet those specifications designated as such herein or in other publications. All other information including that herein, supplied by Shell Chemicals is considered accurate but is furnished upon the express condition that the customer shall make its own assessment to determine the product's suitability for a particular purpose. Shell Chemicals make no other warranty either expressed or implied, regarding such other information, the data upon which the same is based, or the results to be obtained from use thereof; that any products shall be merchantable or fit for any purpose; or that the use of such other information or product will not infringe any patent.</p> <p>"Shell Chemicals" collectively refers to the companies of the Shell Group engaged in the chemicals business, each of which is an independent entity and has its own separate identity.</p>