



Data Sheet

Issued:

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Product Name

Acetone

Product Code

U8903 **Deer Park, TX (USA)**

Product Category

Ketones

CAS Registry Number

67-64-1

Synonym(s)

2-propanone, dimethyl ketone, DMK

Description

Acetone is a colorless, low boiling easy pouring liquid with characteristic odor, and is miscible in all proportions with water, alcohols, many hydrocarbons and other organic liquids. It has good solvent properties for vegetable and animal fats, cellulose ether, natural and synthetic resins and many other organic substances.

Sales Specification

Property	Unit	Min	Max	Method
Appearance	Clear & Free From Suspended Matter			ASTM D4176
Purity	%m/m	99.5		ASTM D2804
Isopropyl alcohol	%m/m		0.05	Q-044-S
Methanol	%m/m		0.05	Q-044-S
Benzene	mg/kg		30	Q-044-S
Water	%m/m		0.50	ASTM D1364
Aldehydes as HCHO	%m/m		0.002	ACS 1
Alkalinity as NH ₃	%m/m		0.001	ASTM D1614 1
Acidity as Acetic acid	%m/m		0.002	ASTM D1613
Organic Volatile Impurities		Pass		NF 1
Color	Pt-Co		5	ASTM D1209
Specific Gravity @20/20°C		0.7910	0.7925	ASTM D4052 1
Specific Gravity @25/25°C		0.7865	0.7880	ASTM D4052 1
Permanganate Fading Time @25°C	minutes	120		ASTM D1363
Non Volatile Matter	mg/100ml		1	ACS 1
Distillation Range	°C		0.8	ASTM D1078 1
Distillation Range incl. 56.1C	°C	Pass		ASTM D1078 1
Solubility in Water @25°C		Pass		ASTM D1722

(1) Agreed Specification limits - no results reported

Shell Acetone as produced and handled through loading into tank cars or tank trucks and delivery, if prepaid by Shell, complies with current Good Manufacturing Practices; the current National Formulary Monograph; ASTM D329; and the ACS 10th Edition General Use Requirements.

Typical Properties

Property	Unit	Method	Value
Purity	% m/m	ASTM D2804	min 99.5
Water	% m/m	ASTM D1364	0.25
Density @20°C	kg/l	ASTM D4052	0.791
Cubic Expansion Coefficient @20°C	(10 ⁻⁴)/°C	Calculated	14
Refractive Index @20°C	-	ASTM D1218	1.359
Refractive Index @25°C	-	ASTM D1218	1.356
Color	Pt-Co	ASTM D1209	< 5
Permanganate Fading Time @25°C	minutes	ASTM D1363	180
Acidity as Acetic Acid	% m/m	ASTM D1613	0.001
Boiling Point	°C	-	56
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	5.6
Antoine Constant A #	kPa, °C	-	6.25478
Antoine Constant B #	kPa, °C	-	1216.69
Antoine Constant C #	kPa, °C	-	230.275
Antoine Constants: Temperature range	°C	-	-50 to +70
Vapor Pressure @20°C	kPa	Calculated	25
Vapor Pressure @50°C	kPa	Calculated	82
Saturated Vapor Concentration @20°C	g/m ³	Calculated	589
Benzene	mg/kg	GC	10
Flash Point	°C	IP 170	-18
Auto Ignition Temperature	°C	ASTM E659	540
Explosion Limit: Lower	%v/v	-	2.1
Explosion Limit: Upper	%v/v	-	12.8
Electrical Conductivity @20°C	μS/m	-	20
Dielectric Constant @20°C	-	-	21.4
VOC Content	-	EPA	Exempt
Freezing Point	°C	-	-95
Surface Tension @20°C	mN/m	Du Nouy ring	24
Viscosity @20°C	mPa.s	ASTM D445	0.32
Hildebrand Solubility Parameter	(cal/cm ³) ^{1/2}	-	10
Hydrogen Bonding Index	-	-	12.5
Fractional Polarity	-	-	0.695
Heat of Vaporization @Tboil	kJ/kg	-	525
Heat of Combustion (Net) @25°C	kJ/kg	-	29000
Specific Heat @20°C	kJ/kg/°C	-	2.16
Thermal Conductivity @20°C	W/m/°C	-	0.16
Miscibility @20°C: Solvent in Water	% m/m	-	Complete
Miscibility @20°C: Water in Solvent	% m/m	-	Complete
Azeotrope with Water: Boiling Point	°C	-	Non-azeotropic
Azeotrope with Water: Solvent Content	% m/m	-	Non-azeotropic
Molecular Weight	g/mol	-	58

(#) 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 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.
Storage and Handling	Provided proper storage and handling precautions are taken we would expect Acetone 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.
Hazard Information	For detailed Hazard Information please refer to the Material Safety Data Sheet on www.shell.com/chemicals.
Contact	For further information, please visit our website at www.shell.com/chemicals, contact your local Shell representative, or call the 'Shell Chemicals' order center at 1 866 89 SHELL (1 866 897 4355).
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