Technical Datasheet

n-Pentane

Product Category Pentanes

Description n-Pentane contains a minimum of 95% n-Pentane. It is used for its high volatility, high purity and low odour.

Typical Properties

Property	Unit	Method	Value
Water	% m/m	ASTM D1364	< 0.005
Density @15°C	kg/L	ASTM D4052	0.632
Coefficient of Cubic Expansion @20°C	10^{-4}/°C	Calculated	16
Refractive Index @20°C	-	ASTM D1218	1.358
Colour	Saybolt	ASTM D156	+30
Bromine Index	mg Br/100g	ASTM D1492	50
Copper Corrosion (1hr @100°C)	-	ASTM D130	1
Doctor Test	-	ASTM D4952	Negative
Non Volatile Matter	mg/100ml	ASTM D1353	< 1
Distillation, Initial Boiling Point	°C	ASTM D1078	35
Distillation, Dry Point	°C	ASTM D1078	37
Relative Evaporation Rate (nBuAc=1)	-	ASTM D3539	12
Relative Evaporation Rate (Ether=1)	-	DIN 53170	< 1.0
Antoine Constant A #	kPa, °C	-	6.56180
Antoine Constant B #	kPa, °C	-	1438.75
Antoine Constant C #	kPa, °C	-	280.050
Antoine Constants: Temperature range	°C	-	-5 to + 25

Vapor Pressure @ 0°C	kPa	Calculated	27
Vapor Pressure @ 20°C	kPa	Calculated	58
Saturated Vapor Concentration @ 20°C	g/m^3	Calculated	1728
Paraffins	% m/m	GC	>99
Naphthenes	% m/m	GC	< 1
Aromatics	mg/kg	SMS 2728	< 5
Benzene	mg/kg	GC	< 3
Toluene	mg/kg	GC	< 3
n-Hexane	%m/m	GC	< 0.1
Sulfur	mg/kg	ISO 20846	< 0.5
Flash Point, (Abel)	°C	IP170	< -50
Lower Explosion Limit in Air	% v/v		1.7
Upper Explosion Limit in Air	% v/v		7.8
Auto Ignition Temperature	°C	ASTM E659	404
Electrical Conductivity @ 20°C	pS/m	ASTM D4308	< 1
Dielectric Constant @ 20°C	-	-	1.8
Aniline Point	°C	ASTM D611	71
Kauri-Butanol Value	-	ASTM D1133	29
Pour Point	°C	ASTM D97	< -50
Viscosity @ 25°C	mm^2/s	ASTM D445	0.35
Surface Tension @20°C	mN/m	Du Nouy ring	16
Thermal Conductivity @ 20°C	W/m/°C		0.12
Hildebrand Solubility Parameter	$(cal/cm^3)^{1/2}$	-	7.0
Hydrogen Bonding Index	-	-	0
Fractional Polarity	-	-	0
Heat of Vaporization at T_{boil}	kJ/kg	-	357
Heat of Combustion (Net) @t 25°C	kJ/kg	-	46500
Specific Heat @ 20°C	kJ/kg/°C	-	2.4
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: $\log P = A - B/(T+C)$