



# Isopentane

## TECHNICAL DATASHEET

Pentanes  
SICC Product Code: Q1111  
CAS Registry Number: 78-78-4  
EC Number: 201-142-8

### Description

Isopentane contains a minimum of 95% Isopentane. It is used for its high volatility, high purity and low odour.

### Typical Physical Properties

Property	Unit	Value	Method
Density @ 15°C	kg/l	0.625	ASTM D4052
Coefficient of Cubic Expansion @ 20°C	10 <sup>-4</sup>	16	calculated
Refractive Index @ 20°C	-	1.354	ASTM D1218
Colour	Saybolt	+30	ASTM D156
Bromine index	mg Br/100g	20	ASTM D2710
Copper Corrosion (1hr @ 100°C)	-	1	ASTM D130
Doctor Test	-	Negative	ASTM D4952
Non-Volatile Matter	mg/100 ml	1	ASTM D1353
Distillation, Initial Boiling Point	°C	28	ASTM D1078
Distillation, Dry Point	°C	32	ASTM D1078
Relative Evaporation rate (nBuAc=1)	-	12	ASTM D3539
Antoine Constant A <sup>#</sup>	kPa, °C	7.17660	-
Antoine Constant B <sup>#</sup>	kPa, °C	1791.83	-
Antoine Constant C <sup>#</sup>	kPa, °C	318.690	-

Notes:

#: In the Antoine temperature range, the vapor pressure P (kPa) at temperature T (°C) can be calculated by means of the Antoine equation:  
 $\log P = A - B/(T+C)$ .



## Typical Physical Properties

Property	Unit	Value	Method
Antoine Constants: Temperature range	°C	-5 to +25	-
Vapor Pressure @ 0°C	kPa	36	Calculated
Vapor Pressure @ 20°C	kPa	77	Calculated
Saturated Vapor Concentration @ 20°C	g/m <sup>3</sup>	2275	Calculated
Paraffins	%m/m	> 99	GC
Napthenes	%m/m	< 1	GC
Aromatics	mg/kg	< 5	SMS 2728
Benzene	mg/kg	< 3	GC
Toluene	mg/kg	< 3	GC
n-Hexane	%m/m	< 0.1	GC
Water	%m/m	< 0.005	ASTM E1064
Sulfur	mg/kg	< 0.5	ISO 20846
Flashpoint (Abel)	°C	< -50	IP170
Lower Explosion Limit in Air	%v/v	1.3	
Upper Explosion Limit in Air	%v/v	7.6	
Auto Ignition Temperature	°C	468	ASTM E659
Electric Conductivity @ 20°C	pS/m	< 1	ASTM D4308
Dielectric Constant	-	1.8	-
Pour Point	°C	< -50	ASTM D97
Viscosity @ 25°C	mm <sup>2</sup> /s	0.32	ASTM D445
Surface Tension @ 20°C	mN/m	15	Du Nouy ring
Thermal Conductivity @ 20°C	W/m/°C	0.11	-
Hildebrand Solubility Parameter	(cal/cm <sup>3</sup> ) <sup>1/2</sup>	6.8	
Hydrogen Bonding Index	-	0	-
Fraction Polarity	-	0	-
Heat of Vaporization at T <sub>boil</sub>	kJ/kg	342	-
Heat of Combustion (Net) @ 25°C	kJ/kg	46000	-
Specific Heat @ 20°C	kJ/kg/°C	2.3	-



Property	Unit	Value	Method
Molecular Weight	g/mol	72	Calculated

### Test Methods

Copies of copyrighted test methods can be obtained from the issuing organisations:

- American Society for Testing and Materials (ASTM)
- International Organization for Standardization (ISO)
- Deutsches Institut für Normung (DIN)

Shell Method Series (SMS) methods are issued by Shell Global Solutions International B.V., Shell Technology Centre, Amsterdam, The Netherlands. Requests for copies of SMS can be made through your local Shell Chemicals company.

N.B: For routine quality control local test methods may be applied. Such methods have been validated against those mentioned in this datasheet.

### Quality

Isopentane 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.

Access Safety Data Sheets here: [Safety Data Sheets](#)

### Storage and Handling

Provided proper storage and handling precautions are taken we would expect Isopentane to be technically stable for at least 12 months. For detailed advice on Storage and Handling please refer to the Safety Data Sheet

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