

# Gasoline (Unleaded)

Reference ID

**Synonyms:** Automotive Fuel  
Petrol

For additional fuel specifications refer to ASTM D 4814.

Data from Shell 1999 were taken from MSDS Number 211-100.

## Equation(s) for Predicting Evaporation

$$\%Ev = (13.2 + 0.21T)\ln(t)$$

Where %Ev = weight percent evaporated; T = surface temperature (°C); t = time (minutes)

ESD 96

## Flash Point (°C)

-30

Shell 99a

## Flammability Limits in Air (volume %)

1.4 to 7.6

Shell 99a

## Ignition Temperature (°C)

280

Shell 99a

## Odour Threshold (ppm)

&lt;0.25

Shell 99a

## Density (g/mL)

Temperature  
(°C)

15

0.750 to 0.850

Shell 99a

## Kinematic Viscosity (mm<sup>2</sup>/s or cSt)

Temperature  
(°C)

38

&lt;1

Shell 99a

## Boiling Point Distribution (weight %)

Boiling Point  
(°C)

40

Weight %

26

ESD 94

60

30

80

44

100

70

120

84

140

85

160

88

180

95

200

98

## Boiling Point Distribution (°C)

Weight %

25

Boiling Point  
(°C)

30

ESD 94

35

40

45

50

55

60

65

70

75

# Gasoline (Unleaded)

Boiling Point Distribution (°C)			Reference ID
Weight %	Boiling Point (°C)		
80			ESD 94
85			
90			
95			
Boiling Range (°C)			Reference ID
35 to 220			Shell 99a
Aqueous Solubility (mg/L)			
	Temperature (°C)		
	20 (approx.)	307 (a)	MacLean 89
	22	112 (a)	Suntio 86
	20 (approx.)	261 (b)	MacLean 89
(a) fresh water; (b) salt water			
Acute Toxicity of Water Soluble Fraction (mg/L)			
	Test Organism		
48h EC50	Daphnia magna	5 (a)	MacLean 89
		2 (b)	EETD 89
	Artemia spp.	25 (a)	MacLean 89
		9 (b)	EETD 89
48h LC50	Daphnia magna	50 (a)	MacLean 89
		18 (b)	EETD 89
	Artemia spp.	51 (a)	MacLean 89
		18 (b)	EETD 89
	Rainbow trout larvae	7 (c)	Lockhart 87
		5 (d)	
(a) results based on fluorescence spectroscopy; (b) results based on GC purge-and-trap analysis; (c) closed container; (d) open container			
Threshold Limit Values (ppm)			
	TWA	300	ACGIH 99
	STEL	500	