

ALTERNATIVE FUELS DATA TABLE

	Methane	Propane	LNG	Gasoline	Diesel	Hydrogen	Methanol	Ethanol
Formula	CH ₄	C ₃ H ₈	CH ₄	C ₈ H ₁₈	C ₁₂ H ₂₆	H ₂	CH ₃ OH	C ₂ H ₅ OH
Research Octane Number	130	112	130	91-98	N.A	130+	107	108
Motor Octane Number	130	97	130	83-90	N.A	N.A	91	92
Cetane Number	-10	5-10	-10	8-14	40-65	N.A	3	8
Density of Liquid Fuel(kg/lt)	N.A	0.509	0.421	0.746	0.808	0.0708	0.79	0.783
Density of Gas (kg/m ³)	0.6512	0.508	N.A	4.4		0.0838		
Boiling Point (C)	-162	-42	-162	27-240		-252.7		
Lower Heating Value (kj/kg)	49,913	46,238	49,913	42,661	43,419	119,444	19,859	26,855
Energy Content (Volume) (BTU/gallon)	121,459	84,448	28,287	114,194	125,881	N/A	N/A	57,449
Energy Compared to Gasoline	65%	72%	66%	100%	113%	26%	47%	66%
Energy Compared to Diesel	57%	64%	60%	88%	100%	23%	41%	58%
Stoichiometric A/F Ratio (mass)	17.3	15.7	17.3	14.7	15	34.3	6.5	9
Heat of Vaporization (kj/kg)	507	423	507	355	286	N.A	1186	842
Energy of Stoich. Mixture (Vapor)	3.58	3.79	3.58	3.55	3.61	3.58	3.45	3.46
Wobbe Number (Mj/m ³)	50.66	74.7	50.66	N.A	N.A			
Autoignition Temperature (C)	540	482	450	257	316	574	464	423
Peak Flame Temperature (C)	1790	1990	1790	1977	2054	2045		
Spark Ignition Energy (mj)	0.29	0.305	0.29	0.24	0.24	0.02		
Flammability Limits (vol %)	5.3-15	2.1- 10.4		1.4- 7.6	0.6- 5.5	4-75		
Max. Burning Velocity in NTP air (cm/s)	37-45	43-52	37-45	37-43				
Specific Gravity at NTP (60 deg F)	0.55	1.52	0.55	2-4	4-6			
Reid Vapor Pressure (psi)	2400	208		8-15	0.2		4.6	2.3
Flame Visibility, relative	0.6	0.6	0.6	1	1			
Flash Point (F)	-300	-100 to - 150	-306	-45	165		52	55

* @ 3500 psi