

Calorific Value Table



Environment Friendly
Engineering Solution Company



In Association with SVCH-Technologies, Moscow (Russia)

ISO 9001-2008 | ISO 9001-2015 | EMS 14001 | OHSAS 18001

Fuel	Density		Higher Heating Value (HHV) (Gross Calorific Value - GCV)					Lower Heating Value (LHV) (Net Calorific Value - NCV)				
	@0°C/32°F, 1 bar											
Gaseous fuels	[kg/m³]	[g/ft³]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/m³]	[Btu/ft³]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/m³]	[Btu/ft³]
Acetylene	1.097	31.1	13.9	49.9	21453	54.7	1468					
Ammonia				22.5	9690							
Hydrogen	0.090	2.55	39.4	141.7	60920	12.7	341	33.3	120.0	51591	10.8	290
Methane	0.716	20.3	15.4	55.5	23874	39.8	1069	13.9	50.0	21496	35.8	964
Natural gas (US market)*	0.777	22.0	14.5	52.2	22446	40.6	1090	13.1	47.1	20262	36.6	983
Town gas						18.0	483					
	@15°C/60°F											
Liquid fuels	[kg/l]	[kg/gal]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/l]	[Btu/gal]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/l]	[Btu/gal]
Acetone	0.787	2.979	8.83	31.8	13671	25.0	89792	8.22	29.6	12726	23.3	83580
Butane	0.601	3.065	13.64	49.1	21109	29.5	105875	12.58	45.3	19475	27.2	97681
Butanol	0.810		10.36	37.3	16036	30.2	108359	9.56	34.4	14789	27.9	99934
Diesel fuel*	0.846	3.202	12.67	45.6	19604	38.6	138412	11.83	42.6	18315	36.0	129306
Dimethyl ether (DME)	0.665	2.518	8.81	31.7	13629	21.1	75655	8.03	28.9	12425	19.2	68973
Ethane	0.572	2.165	14.42	51.9	22313	29.7	106513	13.28	47.8	20550	27.3	98098
Ethanol (100%)	0.789	2.987	8.25	29.7	12769	23.4	84076	7.42	26.7	11479	21.1	75583
Diethyl ether (ether)	0.716	2.710	11.94	43.0	18487	30.8	110464					
Gasoline (petrol)*	0.737	2.790	12.89	46.4	19948	34.2	122694	12.06	43.4	18659	32.0	114761
Gas oil (heating oil)*	0.84	3.180	11.95	43.0	18495	36.1	129654	11.89	42.8	18401	36.0	128991
Glycerin	1.263	4.781	5.28	19.0	8169	24.0	86098					
Heavy fuel oil*	0.98	3.710	11.61	41.8	17971	41.0	146974	10.83	39.0	16767	38.2	137129
Kerosene*	0.821	3.108	12.83	46.2	19862	37.9	126663	11.94	43.0	18487	35.3	126663
Light fuel oil*	0.96	3.634	12.22	44.0	18917	42.2	151552	11.28	40.6	17455	39.0	139841
LNG*	0.428	1.621	15.33	55.2	23732	23.6	84810	13.50	48.6	20894	20.8	74670
LPG*	0.537	2.033	13.69	49.3	21195	26.5	94986	12.64	45.5	19561	24.4	87664
Marine gas oil*	0.855	3.237	12.75	45.9	19733	39.2	140804	11.89	42.8	18401	36.6	131295
Methanol	0.791	2.994	6.39	23.0	9888	18.2	65274	5.54	19.9	8568	15.8	56562
Methyl ester (biodiesel)	0.888	3.361	11.17	40.2	17283	35.7	128062	10.42	37.5	16122	33.3	119460
MTBE	0.743	2.811	10.56	38.0	16337	28.2	101244	9.75	35.1	15090	26.1	93517
Oils vegetable (biodiesel)*	0.92	3.483	11.25	40.5	17412	37.3	133684	10.50	37.8	16251	34.8	124772
Paraffin (wax)*	0.90	3.407	12.78	46.0	19776	41.4	148538	11.53	41.5	17842	37.4	134007

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Gaseous fuels	[kg/m ³]	[g/ft ³]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/m ³]	[Btu/ft ³]	[kWh/kg]	[MJ/kg]	[Btu/lb]	[MJ/m ³]	[Btu/ft ³]
Pentane	0.63	2.385	13.50	48.6	20894	30.6	109854	12.60	45.4	19497	28.6	102507
Petroleum naphtha*	0.725	2.745	13.36	48.1	20679	34.9	125145	12.47	44.9	19303	32.6	116819
Propane	0.498	1.885	13.99	50.4	21647	25.1	89963	12.88	46.4	19927	23.1	82816
Residual oil*	0.991	3.752				41.8	150072	10.97	39.5	16982	39.2	140470
Tar*			10.00	36.0	15477							
Turpentine	0.865	3.274	12.22	44.0	18917	38.1	136555					
Solid fuels*			[kWh/kg]	[MJ/kg]	[Btu/lb]			[kWh/kg]	[MJ/kg]	[Btu/lb]		
Anthracite coal			9.06	32.6	14015							
Bituminous coal			8.39	30.2	12984			8.06	29.0	12468		
Carbon			9.11	32.8	14101							
Charcoal			8.22	29.6	12726			7.89	28.4	12210		
Coke			7.22	26.0	11178							
Lignite (brown coal)			3.89	14.0	6019							
Peat			4.72	17.0	7309							
Petroleum coke			8.69	31.3	13457			8.19	29.5	12683		
Semi anthracite			8.19	29.5	12683							
Sub-Bituminous coal			6.78	24.4	10490							
Sulfur (s)			2.56	9.2	3955			2.55	9.2	3939		
Wood (dry)	0.701		4.50	16.2	6965			4.28	15.4	6621		

1 kWh/kg = 1547.7 Btu(IT)/lb = 3.597 GJ/t = 3597.1 kJ/kg = 860.421 kcal/kg



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