

## BİRİMLER

Enerji, ısı ve ısı birimleri	J	Kwh I	Kgf.m	KCal	Psh	Hph	Btu	Ft.lbf	I atm
1 J(jul)=N m=W.s	1	2.778.10 <sup>-7</sup>	0.101972	2.388.10 <sup>-4</sup>	3.777.10 <sup>-7</sup>	3.725.10 <sup>-4</sup>	9.478.10 <sup>-4</sup>	0.737561	0.009869
1 KWh (Kilowatsaat)	3.6.10 <sup>6</sup>	1	3.671.10 <sup>5</sup>	859.845	1.35962	1.34102	3412.14	2.65522.10 <sup>4</sup>	35528
1 Kgf.m (Kilogram kuvvet. mt)	9.80665	2.724.10 <sup>-5</sup>	1	0.002342	3.70370.10 <sup>-6</sup>	3.653.10 <sup>-6</sup>	0.009297	7.233	0.09678
1 Kcal (kilo Kalori)	4186.8	0.001163	426.939	1	0.001581	0.001560	3.96832	3.088.02	41.32
1 Psh (Metrikbeygüçü saat)	2.648.10 <sup>5</sup>	0.735499	270.000	632.41	1	0.986320	2509.62	1.95291.10 <sup>5</sup>	26131
1 Hph (Beygüçü saat)	2.6845.10 <sup>6</sup>	0.7457	2.7375.10 <sup>5</sup>	641.186	1.0139	1	2544.43	1.98.10 <sup>5</sup>	26439
Btu (Ing. ısı birimi)	1055.06	2.931.10 <sup>-4</sup>	107.586 <sup>6</sup>	0.2511996	3.985.10 <sup>-4</sup>	3.930.10 <sup>-4</sup>	1	778.168	10.41
Ft. lbf (foot libre kuvvet)	1.35582	3.76617.10 <sup>-7</sup>	0.138255	3.223832.10 <sup>-4</sup>	5.12056.10 <sup>-7</sup>	5.05051.10 <sup>-7</sup>	0.001285	1	0.01338
l.atm (Litre atmosfer)	101.33	2.815.10 <sup>-5</sup>	10.333	0.02420	3.827.10 <sup>-5</sup>	3.775.10 <sup>-5</sup>	0.09604	74.74	1

(1T Kalori) ICa 11T=4.1868J (Milletlerarası kalori)

Güç	kgf.m/s	Kw	Kcal/s	PS	Hp	Ft.lbf/s	Ft.lbf/min	Btu/s	Btu/min
1 kgf. m/s Kilogram Kuvvet mt/sn	1	0.009807	0.002342	0.0133333	0.0131509	7.23301	433.96	0.009295	0.5577
1 Kw (Kilowat)	101.972	1	0.238846	1.35962	1.34102	737.562	4.426x10 <sup>4</sup>	0.94781	56.89
1 Kcal/s (Kilokalori/sn)	426.9	4.1868	1	5.692	5.614	3088.05	185280	3.96832	238.08
1 PS (Metrikbeygüçü)	75	0.735499	0.175671	1	0.986320	542.476	3.255x10 <sup>4</sup>	0.69712	41.83
1 HP (Beygüçü)	76.0402	0.7457	0.1781	1.01387	1	550	3.3x10 <sup>4</sup>	0.70679	42.41
1 Ft. lb/s (Font libre kuvvet/sn)	0.138255	0.001356	3.238x10 <sup>-4</sup>	0.001843	0.001818	1	60	0.001285	0.07712
1 Ft. lb/mim (Font libre kuvvet/dakika)	2.305x10 <sup>-3</sup>	2.260x10 <sup>-6</sup>	5.396x10 <sup>-6</sup>	3.072x10 <sup>-5</sup>	3.030x10 <sup>-5</sup>	0.01667	1	2.141x10 <sup>-3</sup>	1.285x10 <sup>-3</sup>
Btu/s (ING. ısı birimi/sn)	107.586	1.05505	0.251993	1.4345	1.4149	778.17	4.670x10 <sup>4</sup>	1	60
Btu/min (ing.ısı birimi/dk.)	1.793	0.01758	4.2x10 <sup>-3</sup>	0.02390	0.02357	12.97	778.0	0.01667	1

1 Poncelet= 100kgf.m/s

Birimlerin As ve US Katlarına göre aldıkları ön taklar

Basınç	atm Atmosfer	at kgf/cm <sup>2</sup>	Psi lbf/in <sup>2</sup>	Torr mm Hg	Bar	Paskal N/m <sup>2</sup>
1 atm (Normal Atmosfer)	1	1.03323	14.6559	760	1.013250	101325
0 C de 760mm Civanın Ağırlığı						
1 at (Metrik Atmosfer)	0.967841	1	14.2233	735.559	0.980665	98066.5
1 Psi	0.0680460	0.0703070	1	51.7149	0.0689476	6895
1 Torr	1.31579.10 <sup>-3</sup>	1.35951.10 <sup>-3</sup>	0.0193368	1	1.33322.10 <sup>-3</sup>	133.32
Bar = 10 <sup>5</sup> Dyn/cm <sup>2</sup>	.0.986923	1.01972	14.5038	1750.062	1	10 <sup>5</sup>

"10" un katları	Ön Takı	Ön Takı İşaretler
10 <sup>13</sup>	Exa	E
10 <sup>15</sup>	Peta	P
10 <sup>12</sup>	Tera	T
10 <sup>9</sup>	Giga	G
10 <sup>6</sup>	Mega	M
10 <sup>3</sup>	Kilo	k
10 <sup>2</sup>	Hekko	h
10	Deka	da
10 <sup>-1</sup>	Desi	d
10 <sup>-2</sup>	Santi	c
10 <sup>-3</sup>	Mili	m
10 <sup>-6</sup>	Mikro	u
10 <sup>-9</sup>	Nano	n
10 <sup>-12</sup>	Piko	p
10 <sup>-15</sup>	Femto	f

Kuvvet	Birim Analizi	N	Dyn	kgf	lbf	Poundal
1 Newton (N) =kg.m/s <sup>2</sup> MKS Sistem		1	10 <sup>5</sup>	0.101972	0.224809	7233
1 DIN (Dyn)=gr.cm/s <sup>2</sup> Metrik Mutlak Sistem CGS		10 <sup>5</sup>	1	1.01972.10 <sup>-6</sup>	2.24809.10 <sup>-6</sup>	7.233.10 <sup>-5</sup>
1 kilogram kuvvet (kgf)= 9.80665 m/sn <sup>2</sup> Metrik (Teknik) Yerçekimi Sistemi		9.80665	980665	1	2.20462	70.93
1 Libre Kuvvet (lbf) =lb.32.174 lt/sn <sup>2</sup> Ing Teknik Yerçekimi Sistemi		4.4480	444805	0.4536	1	32.17
1 Poundal = lb ft/sn <sup>2</sup> Ing Mutlak dinamik sistemi		0.1383	13825	0.0141	0.03108	1

Isı Akışı	W/m <sup>2</sup>	kcal/m <sup>2</sup> h	BTU/in <sup>2</sup> sec	BTU/ft <sup>2</sup> sec	BTU/in hr F
1 W/m <sup>2</sup>	1	0.859845	6.11494.10 <sup>7</sup>	8.80551.10 <sup>5</sup>	0.316998
1 kcal/m <sup>2</sup> h	1.163	1	7.11167.10 <sup>7</sup>	102408.10 <sup>-4</sup>	0.368669
1 BTU/in <sup>2</sup> sec	1.63534.10 <sup>5</sup>	1.40614.10 <sup>5</sup>	1	144	5.184.10 <sup>5</sup>
1 BTU/ft <sup>2</sup> sec	1.13565.10 <sup>4</sup>	9767.86	1/144	1	3600
1 BTU/ft <sup>2</sup> hr	3.15459	2.71246	1.92901.10 <sup>8</sup>	1/3600	1

Isıl Değer	J/kg	kcal/kp	BTU/lb
1 J/kg	1	2.38846.10 <sup>-4</sup>	4.299232.10 <sup>-4</sup>
1 Kcal/kp	4168.8	1	1.8
1 BTU/lb	2326	0.55556	1

Isı İletim Katsayısı	W/m C	Kcal/h m C	BTU/in ft <sup>2</sup> hrF	BTU/ ft hrF	BTU/in hr F
1 W/m C	1	0.859845	6.93347	0.57789	4.81491.10 <sup>-2</sup>
1 kcal/h m C	1.163	1	8.06363	0.671969	5.59974.10 <sup>-2</sup>
1 BTU/in ft <sup>2</sup> hrF	0.144228	0.124014	1	1/12	1/144
1 BTU/in hr F	1.73073	1.48816	12	1	1/12
1 BTU/in hr F	20.76882	17.85798	144	12	1

Isıl Değer	J/m <sup>3</sup>	kcal/m <sup>3</sup>	BTU/ft. <sup>3</sup>
1 J/m <sup>3</sup>	1	2.38846.10 <sup>-4</sup>	2.68392.10 <sup>-6</sup>
1 kcal/m <sup>3</sup>	4168.8	1	0.11237
1 BTU/ft <sup>3</sup>	3.7259.10 <sup>4</sup>	8.89915	1

Dinamik Viskozite	1 Ns/m <sup>2</sup> Pa.s= 10P	1 kg/h m	1 kp/s/m <sup>2</sup>	1 Lb mass/ ft. sec	1 lb force sec/ft <sup>2</sup>
1 Ns/m <sup>2</sup>	1	3600	0.101972	0.67197	2.08854.10 <sup>-2</sup>
1 kg/h m	2.77778.10 <sup>-4</sup>	1	2.83255.10 <sup>-3</sup>	1.86658.10 <sup>-4</sup>	5.80151.10 <sup>-6</sup>
1 kp s / m <sup>2</sup>	0.80665	3.53039.10 <sup>4</sup>	1	6.58976	0.204816
1 lb mass/ft.sec	1.48816	5357.39	0.151751	1	3.1081.10 <sup>2</sup>
1 lb force sec/ft <sup>2</sup>	47.88027	1.72369.10 <sup>5</sup>	4.88243	32.17405	1