

## N. Unit Conversion

### SI Decimal Multiples

Prefix	Symbol	Factor	Term
kilo	k	$10^3$	thousand
mega	M	$10^6$	million
giga	G	$10^9$	billion
tera	T	$10^{12}$	trillion
peta	P	$10^{15}$	quadrillion

### Mass

Name		t	kg	t <sub>s</sub>	t <sub>l</sub>	lb	Units System
tonne	t	1	1000	1.102	0.984	2205	Metric
kilograms	kg	0.001	1	0.001	0.001	2.205	Metric/SI
short tons	t <sub>s</sub>	0.907	907	1	0.893	2000	American
long tons	t <sub>l</sub>	1.016	1016	1.120	1	2240	Imperial
pounds	lb	0.000454	0.454	0.0005	0.000446	1	American/Imperial

### Volume

Name		Mm <sup>3</sup>	Bcf	mmbbls	Units System
million cubic meters	Mm <sup>3</sup>	1	0.0353	6.289	Metric/SI
billion cubic feet	Bcf	28.317	1	178.08	American/Imperial
million barrels	mmbbls	0.159	0.00562	1	Common Oil

### Energy and Heat

Name		PJ	Cal <sub>th</sub>	btu	GWh	boe	toe	Units System
Petajoule	PJ	1	$2.390 \times 10^{14}$	$9.478 \times 10^{11}$	277.78	$1.634 \times 10^5$	23885	Metric/SI
Thermochemical calories	Cal <sub>th</sub>	$4.184 \times 10^{-15}$	1	0.004	$1.162 \times 10^{-12}$	$6.837 \times 10^{-10}$	$9.993 \times 10^{-11}$	Imperial/American
British thermal units	btu	$1.055 \times 10^{-12}$	252.16	1	$2.931 \times 10^{-10}$	$1.724 \times 10^{-7}$	$2.520 \times 10^{-8}$	Imperial/American
Gigawatt hours	GWh	0.0036	$8.604 \times 10^{11}$	$3.412 \times 10^9$	1	588.30	85.98	Common Electricity
Barrels of oil equivalent	boe	$6.119 \times 10^{-6}$	$1.463 \times 10^9$	$5.800 \times 10^6$	0.0017	1	0.146	Common Oil
Tonnes of oil equivalent (toe)	toe	$4.187 \times 10^{-5}$	$1.001 \times 10^{10}$	$3.968 \times 10^7$	0.01163	6.842	1	Common Oil

### Electrical Capacity – Power

Name		MW	kW	HP <sub>e</sub>
Megawatt	MW	1	1000	1340.5
Kilowatt	kW	0.001	1	1.340
Horsepower (Electrical)	HP <sub>e</sub>	0.0000746	0.746	1