

**Energy conversions**


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1 erg	= 1 dyne-centimeter = $10^{-7}$ joule
1 joule	= 1 newton-meter
1 foot-pound	= 1.356 joule
1 calorie	= 4.184 joule
1 Btu	= $1.055 \times 10^3$ joule
1 horsepower-hour	= $2.6845 \times 10^6$ joule
1 kilowatt-hour	= $3.6 \times 10^6$ joule = $3.413 \times 10^3$ Btu
1 MeV	= $1.6 \times 10^{-13}$ joule
Energy of fission of 1 atom of $^{235}\text{U}$	= 199 MeV = $3.2 \times 10^{-11}$ joule
Energy equivalent of 1 ton of TNT	= $4.2 \times 10^9$ joule
Energy of fission of 1 kilogram of $^{235}\text{U}$	= 20 kilotons of TNT
Hydrogen fusion:	$D + T \rightarrow {}_2\text{He}^4 + n + 17.6 \text{ MeV}$
Energy equivalent of 1 gram of matter	= $9 \times 10^{13}$ joule
High heat value of 1 ton of coal	= $26 \times 10^6$ Btu
High heat value of 1 cord of red oak	= $30 \times 10^6$ Btu
High heat value of 100 gallons of fuel oil	= $15 \times 10^6$ Btu
High heat value of 20 000 cu ft natural gas	= $20 \times 10^6$ Btu
US energy consumption	= $10^{20}$ joule $\text{yr}^{-1}$ (proj. 1970–2000)
Earth's daily receipt of solar energy	= $1.49 \times 10^{22}$ joule = $4.2 \times 10^{12}$ Mwh
Earth's rotational energy	= $2.2 \times 10^{29}$ joule
Earth's total heat content	= $3 \times 10^{31}$ joule
1 D-cell flashlight battery	= $10^4$ watt-s = $10^4$ joule

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