

## CONVERSION FACTORS FOR ENERGY UNITS

	Wavenumber $\bar{\nu}$ $\text{cm}^{-1}$	Frequency $\nu$ MHz	Energy $E$ aJ	Energy $E$ eV	Energy $E$ $E_h$	Molar energy $E_m$ kJ/mol	Molar energy $E_m$ kcal/mol	Temperature $T$ K
$\bar{\nu}$ : 1 $\text{cm}^{-1}$	$\cong 1$	$2.997925 \times 10^4$	$1.986447 \times 10^{-5}$	$1.239842 \times 10^{-4}$	$4.556335 \times 10^{-6}$	$11.96266 \times 10^{-3}$	$2.85914 \times 10^{-3}$	1.438769
$\nu$ : 1 MHz	$\cong 3.33564 \times 10^{-5}$	1	$6.626076 \times 10^{-10}$	$4.135669 \times 10^{-9}$	$1.519830 \times 10^{-10}$	$3.990313 \times 10^{-7}$	$9.53708 \times 10^{-8}$	$4.79922 \times 10^{-5}$
$E$ : 1 aJ	$\cong 50341.1$	$1.509189 \times 10^9$	1	6.241506	0.2293710	602.2137	143.9325	$7.24292 \times 10^4$
$E$ : 1 eV	$\cong 8065.54$	$2.417988 \times 10^8$	0.1602177	1	$3.674931 \times 10^{-2}$	96.4853	23.0605	$1.16045 \times 10^4$
$E$ : 1 $E_h$	$\cong 219474.63$	$6.579684 \times 10^9$	4.359748	27.2114	1	2625.500	627.510	$3.15773 \times 10^5$
$E_m$ : 1 kJ/mol	$\cong 83.5935$	$2.506069 \times 10^6$	$1.660540 \times 10^{-3}$	$1.036427 \times 10^{-2}$	$3.808798 \times 10^{-4}$	1	0.239006	120.272
$E_m$ : 1 kcal/mol	$\cong 349.755$	$1.048539 \times 10^7$	$6.947700 \times 10^{-3}$	$4.336411 \times 10^{-2}$	$1.593601 \times 10^{-3}$	4.184	1	503.217
$T$ : 1 K	$\cong 0.695039$	$2.08367 \times 10^4$	$1.380658 \times 10^{-5}$	$8.61738 \times 10^{-5}$	$3.16683 \times 10^{-6}$	$8.31451 \times 10^{-3}$	$1.98722 \times 10^{-3}$	1

Examples of the use of this table: 1 aJ  $\cong$  50341  $\text{cm}^{-1}$   
 1 eV  $\cong$  96.4853  $\text{kJ mol}^{-1}$

The symbol  $\cong$  should be read as meaning “corresponds to” or “is equivalent to”.

$E = h\nu = hc\bar{\nu} = kT$ ;  $E_m = N_A E$ ;  $E_h$  is the Hartree energy