

SOLIDS	Specific Heat, $\frac{J}{g \cdot ^\circ C}$
H ₂ O(s), ice	2.01
Al (aluminum)	0.900
Glass	0.84
Granite (rock)	0.790
Cu (copper)	0.386
Steel (iron)	0.49
Au (gold)	0.126

LIQUIDS	Specific Heat, $\frac{J}{g \cdot ^\circ C}$
H ₂ O(l), water	4.184
Ethyl alcohol	2.46
Gasoline	2.15
vegetable Oil	2.00
Methyl alcohol	1.77
Freon	0.971
Hg (Mercury)	0.140

GASES	Specific Heat, $\frac{J}{g \cdot ^\circ C}$
CH ₄ (methane)	2.25
H ₂ O(g), steam	2.03
N ₂ (nitrogen)	1.04
Air (N ₂ /O ₂)	1.01
O ₂ (oxygen)	0.916
CO ₂	0.846
Ar (argon)	0.519

Useful conversion factors:

$$1 \text{ cal} = 4.184 \text{ J} \quad (\text{cal: calories} \quad \text{J: joules})$$

Example: Latent Heat (H_{latent}) values for Water and important definitions to memorize!

$$H_{\text{fusion}} = +334 \text{ J/g} \quad (\text{solid} \rightarrow \text{liquid}) \quad (\text{fusion}=\text{melting})$$

$$H_{\text{freezing}} = -334 \text{ J/g} \quad (\text{liquid} \rightarrow \text{solid}) \quad (\text{freezing}=\text{solidification})$$

$$H_{\text{boiling}} = +2257 \text{ J/g} \quad (\text{liquid} \rightarrow \text{gas}) \quad (\text{boiling}=\text{vaporization})$$

$$H_{\text{condensation}} = -2257 \text{ J/g} \quad (\text{gas} \rightarrow \text{liquid}) \quad (\text{condensation}=\text{liquefaction})$$

$$T_{\text{boiling}} = T_{\text{condensation}} = 100.0 \text{ }^\circ\text{C} \text{ (at 1 atm)}$$

$$T_{\text{freezing}} = T_{\text{melting}} = 0.0 \text{ }^\circ\text{C}$$