

Earth Science Reference Tables

PHYSICAL CONSTANTS

Radioactive Decay Data

RADIOACTIVE ISOTOPE	DISINTEGRATION	HALF-LIFE (years)
Carbon-14	$C^{14} \rightarrow N^{14}$	5.7×10^3
Potassium-40	$K^{40} \rightarrow \begin{matrix} Ar^{40} \\ Ca^{40} \end{matrix}$	1.3×10^9
Uranium-238	$U^{238} \rightarrow Pb^{206}$	4.5×10^9
Rubidium-87	$Rb^{87} \rightarrow Sr^{87}$	4.9×10^{10}

Specific Heats of Common Materials

MATERIAL	SPECIFIC HEAT (calories/gram • C°)
Water $\left\{ \begin{matrix} \text{solid} \\ \text{liquid} \\ \text{gas} \end{matrix} \right.$	0.5
	1.0
	0.5
Dry air	0.24
Basalt	0.20
Granite	0.19
Iron	0.11
Copper	0.09
Lead	0.03

Properties of Water

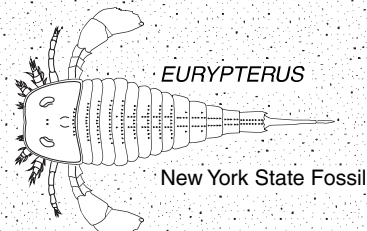
Energy gained during melting	80 calories/gram
Energy released during freezing	80 calories/gram
Energy gained during vaporization	540 calories/gram
Energy released during condensation	540 calories/gram
Density at 3.98°C	1.00 gram/milliliter

EQUATIONS

Percent deviation from accepted value	$\text{deviation (\%)} = \frac{\text{difference from accepted value}}{\text{accepted value}} \times 100$
Eccentricity of an ellipse	$\text{eccentricity} = \frac{\text{distance between foci}}{\text{length of major axis}}$
Gradient	$\text{gradient} = \frac{\text{change in field value}}{\text{distance}}$
Rate of change	$\text{rate of change} = \frac{\text{change in field value}}{\text{time}}$
Density of a substance	$\text{density} = \frac{\text{mass}}{\text{volume}}$

2001 EDITION

This edition of the Earth Science Reference Tables should be used in the classroom beginning in the 2000–2001 school year. The first examination for which these tables will be used is the January 2001 Regents Examination in Earth Science.



Generalized Landscape Regions of New York State

