

# SYMBOLS AND UNITS

a	[CO <sub>2</sub> aq] = concentration dissolved CO <sub>2</sub>	ε	fractionation (constant) (enrichment/depletion)
a	year	ε <sub>k</sub>	kinetic fractionation (constant)
<sup>y</sup> a	activity ratio ( <sup>y</sup> mass number, e.g. <sup>14</sup> a)	f	fraction
aq	dissolved	F	force
A	(atomic) mass number	g	gram
A	absolute (radio)activity (e.g. <sup>14</sup> A)	GM	Geiger Müller counter
AMS	accelerator mass spectrometer	γ	gamma "particle"/radiation
α <sub>l/v</sub>	fractionation factor (l rel. to v)	h	relative humidity
α <sub>k</sub>	kinetic fractionation factor	h	hour
α	alpha particle	I	electric current
b	[HCO <sub>3</sub> <sup>-</sup> ] = concentration dissolved bicarbonate	IAEA	International Atomic Energy Agency
B	magnetic field	IRMS	isotope ratio mass spectrometer
B	background counting rate	J	Joule
Bq	Becquerel = 1 disintegration·s <sup>-1</sup>	keV	kiloelectronvolt = 10 <sup>3</sup> eV
β	beta particle	K	equilibrium/acidity constant
c	[CO <sub>3</sub> <sup>2-</sup> ] = concentration dissolved carbonate ions	K	degree Kelvin
<sup>0</sup> C	degree centigrade	LSS	liquid scintillation spectrometer
C <sub>T</sub>	concentration dissolved inorganic carbon	λ	(radioactive) decay constant
C <sub>3</sub>	Calvin photosynthesis	m	mass
C <sub>4</sub>	Hatch-Slack photosynthesis	m	meter
CAM	Crassulacean Acid Metabolism	min	minute
C <sub>i</sub>	Curie = 3.7×10 <sup>10</sup> dps	mol	symbol for mole
Cl	chlorinity (in g of chloride per kg of water = ‰)	mole	number of grams equal to molar weight
d	deuterium excess of MWL	M	molar weight, mole
d	day = 8.6400×10 <sup>5</sup> s	MeV	millionelectronvolt = 10 <sup>6</sup> eV
dpm	disintegrations per minute	MS	mass spectrometer
dps	disintegrations per second	MWL	meteoric water line
D	diffusion constant/coefficient	μ	reduced mass
DIC	dissolved inorganic carbon	n	neutron
DOC	dissolved organic carbon	N	neutron number
<sup>x</sup> δ	relative isotope ratio (e.g. <sup>13</sup> δ) (defined from <sup>x</sup> R)	N	amount
<sup>y</sup> δ	relative activity ratio (e.g. <sup>14</sup> δ) (defined from <sup>y</sup> A or <sup>y</sup> a)	NBS	National Bureau of Standards
E	energy	NIST	National Institute of Standards and Technology, USA
E <sub>B</sub>	binding energy	ν	neutrino
EC	electron conversion	ν	frequency
		Ox	oxalic acid ( <sup>14</sup> C standard)
		p	pressure
		p	proton
		pH	= - <sup>10</sup> log [H <sup>+</sup> ]
		pCi	picoCurie = 10 <sup>-12</sup> Ci
		pMC	percent Modern Carbon
		P	probability
		PDB	PeeDee Belemnite
		PGC	proportional gas counter
		q	partition function
		q	electric charge
		Q	nuclear reaction energy
		r	radius
		<sup>x</sup> R	isotope ratio ( <sup>x</sup> mass number, e.g. <sup>13</sup> R)
		s	second
		s	slope of MWL = 8

sp	spallation
S	salinity (in g of salt per kg of water = ‰)
SLAP	standard light Antarctic precipitation
SMOW	standard mean ocean water
STP	standard temperature and pressure (0°C, 1 atm)
$\sigma$	standard deviation
$\Sigma$	total inorganic carbon concentration = $C_T$
t	time
t	temperature (in °C)
T	absolute temperature (in K)
$T_{1/2}$	half-life
TU	tritium unit $\equiv [^3\text{H}]/[^1\text{H}] = 10^{-18} = 0.118 \text{ Bq/L}$
$\theta$	exponent in fractionation factor ratio for $(\Delta M=2)/(\Delta M=1)$
$\tau$	mean life
v	velocity
V	volume
V	volt
VPDB	Vienna-PDB
VSMOW	Vienna-SMOW
Z	atomic number