Physicochemical Constants							
Quantity	Symbol	Value	Unit	Uncertainty			
atomic mass unit	ати, и	$1.66053873 \times 10^{-27}$	kg	8 th DP			
Avogadro constant	$N_{Av} n_{Av}$	$6.02214199 \times 10^{23}$	1/mol	8 th DP			
Boltzmann constant	<i>k, k</i> _B	$1.3806503 \times 10^{-23}$	J/K	6 th DP			
Coulomb constant	С	$6.24150974 \times 10^{18}$	e	8 th DP			
dielectric constant	ε 0	$8.854187817 \times 10^{-12}$	F/m	exactly			
elementary charge	e, q	$1.602176462 \times 10^{-19}$	С	8 th DP			
elementary mass of a neutron	m _n	$1.67492716 \times 10^{-27}$	kg	8 th DP			
elementary mass of a proton	<i>m</i> _p	$1.67262158 \times 10^{-27}$	kg	8 th DP			
elementary mass of an electron	m _e	$9.10938188 \times 10^{-31}$	kg	8 th DP			
Faraday constant	F	9.64853415 × 10 ⁴	C/mol	8 th DP			
gas constant	R	8.314472	J/mol·K	6 th DP			
gas constant	R	0.08205746	L·atm/mol·K	8 th DP			
Planck constant	h	$6.62606876 \times 10^{-34}$	J∙s	8 th DP			
Rydberg constant	R_{∞}	1.0973731568549 × 10 ⁷	1/m	12 th DP			
speed of light	С	2.99792458 × 10 ⁸	m/s	exactly			
standard gravity	<i>g</i> ₀	9.80665	m/s ²	exactly			
π		3.14159265359		infinite precisio			
e		2.71828182846		infinite precision			
ln(2)		0.69314718056		infinite precisio			
ln(10)		2.30258509299		infinite precision			
Standard Temperature and Pressure	STP	0°C, 1 atm		exactly			
molar volume of an ideal gas	V _m (STP)	22.41400	L	5 th DP			
Standard Ambient Temperature and Pressure	SATP	25°C, 1 atm		exactly			
molar volume of an ideal gas	V _m (SATP)	24.46543	L	5 th DP			
Thermodynamic Standard State	TSS	25°C, 1 atm, 1 <i>M</i>		exactly			
Nernst factor		0.05916	V	5 th DP			

From Value From Unit	Conversion Factors								
1 cal = 4.184 J exactly 1 eV = 1.60217653 × 10 ⁻¹⁹ J 8th DP 1 L-atm = 101.325 J exactly 1 Btu = 1055.05585 J 5th DP 1 (dietary) Cal = 1000 cal exactly 1 mi = 1760 yd exactly 1 yd = 3 ft exactly 1 ft = 12 in exactly 1 in = 2.54 cm exactly 1 mi = 1.609344 km exactly 1 A = 1 × 10 ⁻¹⁰ m exactly 1 b = 2000 b exactly 1 b = 453.59237 g exactly 1 c = 0.200 g exactly <th>From Value</th> <th>From Unit</th> <th></th> <th>To Value</th> <th>To Unit</th> <th>Uncertainty</th>	From Value	From Unit		To Value	To Unit	Uncertainty			
1 eV = 1.60217653 x 10 ⁻¹⁹ J 8 th DP 1 L-atm = 101.325 J exactly 1 Btu = 1055.05585 J 5 th DP 1 (dietary) Cal = 1000 cal exactly Length 1 mi = 1760 yd exactly 1 yd = 3 ft exactly 1 ft = 12 in exactly 1 in = 2.54 cm exactly 1 mi = 1.609344 km exactly 1 mi = 1.609344 km exactly Mass I ton = 2000 lb exactly 1 lb = 16 oz exactly 1 lb = 453.59237 g exactly 1 t	Energy								
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1 L-atm = 101.325 J exactly 1 Btu = 1055.05585 J 5th DP 1 (dietary) Cal = 1000 cal exactly Length 1 mi = 1760 yd exactly 1 yd = 3 ft exactly 1 ft = 12 in exactly 1 in = 2.54 cm exactly 1 mi = 1.609344 km exactly 1 Å = 1 × 10°10 m exactly 1 lb = 2000 lb exactly 1 lb = 453.59237 g exactly 1 t = 1000 kg exactly 1 ct = 0.200 g exactly 1 atm = 101325 <td>1</td> <td>eV</td> <td>=</td> <td>$1.60217653 \times 10^{-19}$</td> <td>J</td> <td>8th DP</td>	1	eV	=	$1.60217653 \times 10^{-19}$	J	8 th DP			
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Length	1	Btu	=	1055.05585	J	5 th DP			
1 mi = 1760 yd exactly 1 yd = 3 ft exactly 1 ft = 12 in exactly 1 in = 2.54 cm exactly 1 mi = 1.609344 km exactly 1 Å = 1 × 10 ⁻¹⁰ m exactly 1 ton = 2000 lb exactly 1 lb = 16 oz exactly 1 lb = 453.59237 g exactly 1 t = 1000 kg exactly 1 ct = 0.200 g exactly Pressure 1 atm = 101325 Pa exactly 1 atm = 101325 bar exactly 1 atm = 760 mmHg exactly <td>1</td> <td>(dietary) Cal</td> <td>=</td> <td>1000</td> <td>cal</td> <td>exactly</td>	1	(dietary) Cal	=	1000	cal	exactly			
1 yd = 3 ft exactly 1 ft = 12 in exactly 1 in = 2.54 cm exactly 1 mi = 1.609344 km exactly 1 Å = 1 × 10 ⁻¹⁰ m exactly 1 ton = 2000 lb exactly 1 lb = 16 oz exactly 1 lb = 453.59237 g exactly 1 t = 1000 kg exactly 1 t = 0.200 g exactly Pressure - 0.200 g exactly 1 atm = 1.01325 Pa exactly 1 atm = 760 mmHg exactly 1 atm = 760 torr exactly 1	Length								
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Pressure 1 atm = 101325 Pa exactly 1 atm = 1.01325 bar exactly 1 atm = 760 mmHg exactly 1 atm = 760 torr exactly 1 atm = 14.69594878 psi 8^{th} DP 1 bar = 1×10^5 Pa exactly	1	t	=	1000	kg	exactly			
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1 bar = 1×10^5 Pa exactly	1	atm	=	760	torr	exactly			
	1	atm	=	14.69594878	psi	8 th DP			
1 Pa = 1 N/m^2 exactly	1	bar	=	1×10^{5}		exactly			
	1	Pa	=	1	N/m^2	exactly			

		Conv	version Factors		
From Value	From Unit		To Value	To Unit	Uncertainty
Radioactivity					
1	Ci	=	3.70×10^{10}	Bq	exactly
1	Gy	=	1	J/kg	exactly
1	Gy	=	100	rad	exactly
1	R	=	2.58×10^{-4}	C/kg	exactly
1	Sv	=	100	rem	exactly
Temperature					
0	°C	=	273.15	K	exactly
100	°C	=	373.15	K	exactly
T _C	°C	=	T _C + 273.15	K	exactly
T _C	°C	=	$(^{9}/_{5} \times T_{C}) + 32$	°F	exactly
$T_{\rm F}$	°F	=	$(T_F - 32) \times {}^5/_9$	°C	exactly
Time					
1	(calendar) yr	=	365	d	exactly
1	(solar) yr	=	365.242	d	3 rd DP
1	d	=	24	h	exactly
1	h	=	60	min	exactly
1	min	=	60	S	exactly
1	Hz	=	1	1/s	exactly
Volume					
1	gal	=	4	qt	exactly
1	qt	=	2	pt	exactly
1	pt	=	2	cup	exactly
1	pt	=	16	fl.oz.	exactly
1	fl.oz.	=	8	dram	exactly
1	gal	=	231	in ³	exactly
1	gal	=	3.785411784	L	exactly
1	cm ³	=	1	mL	exactly
1	m^3	=	1×10^{3}	L	exactly