

CONVERSION FACTORS



FLOW RATE IN VOLUME

UNIT		m ³ /s	L/s	cfm	gpm
<i>Cubic metre per second</i>	m ³ /s	1	1×10 ³	2118,88	15850
<i>Litre per second</i>	L/s	1×10 ⁻³	1	2,1189	15,85
<i>Cubic foot per minute</i>	cfm	0,4719×10 ⁻³	0,4719	1	7,48
<i>Gallon per minute</i>	gpm	0,6309×10 ⁻⁴	0,06309	0,1337	1

MASS

UNIT		kg	lb	ton
<i>Kilogramme</i>	kg	1	2,2046	1×10 ⁻³
<i>Pound</i>	lb	0,4536	1	0,454×10 ⁻³
<i>Ton short (US)</i>	ton	907,1847	2000	1

AREA

UNIT		m ²	cm ²	in ²	ft ²
<i>Square metre</i>	m ²	1	1×10 ⁴	1550	10,764
<i>Square centimetre</i>	cm ²	1×10 ⁻⁴	1	0,155	10,764×10 ⁻⁴
<i>Square inch</i>	in ²	6,452×10 ⁻⁴	6,452	1	6,944×10 ⁻³
<i>Square foot</i>	ft ²	9,290×10 ⁻²	928,03	144	1

LENGTH

UNIT		m	cm	mm	in	ft
<i>Metre</i>	m	1	1×10 ²	1×10 ³	39,370	3,281
<i>Centimetre</i>	cm	1×10 ⁻²	1	10	0,390	0,033
<i>Milimetre</i>	mm	1×10 ⁻³	1×10 ⁻¹	1	0,039	3,28×10 ⁻³
<i>Inch</i>	in	2,54×10 ⁻²	2,540	25,4	1	0,083
<i>Foot</i>	ft	0,305	30,480	304,8	12	1

VOLUME

UNIT		m ³	L	in ³	ft ³	gal
<i>Cubic metre</i>	m ³	1	1×10 ³	61,024×10 ³	35,315	219,969
<i>Cubic decimetre or liter</i>	dm ³ (L)	1×10 ⁻³	1	61,024	0,353	0,220
<i>Cubic inch</i>	in ³	0,0164×10 ⁻³	0,016	1	5,787×10 ⁻⁴	3,605×10 ⁻³
<i>Cubic foot</i>	ft ³	0,028	28,317	1728	1	6,229
<i>Gallon (UK)</i>	gal	4,546×10 ⁻³	4,546	277,419	0,161	1

WORK, ENERGY, HEAT AND ENTHALPY

UNIT		J	kgfm	kcal	Wh	Btu
<i>Joule</i>	J	1	0,1020	0,2388×10 ⁻³	0,2778×10 ⁻³	0,9478×10 ⁻³
<i>Kilogramme metre</i>	kgfm	9,807	1	2,342×10 ⁻³	2,724×10 ⁻³	9,295×10 ⁻³
<i>Kilocalorie</i>	kcal	4186,8	426,92	1	3,968	3,968
<i>Watt hour</i>	Wh	3600	367,08	0,861	1	3,413
<i>British thermal unit</i>	Btu	1055,06	107,58	0,252	0,293	1

CONVERSION FACTORS

POWER								
UNIT		W	kcal/h	kgm/s	BTU/h	ft lb/s	BHP	CV
<i>Watt</i>	W	1	0,8605	0,102	3,413	0,7375	1,341×10 ⁻³	1,360×10 ⁻³
<i>Kilocalorie/hour</i>	kcal/h	1,1628	1	0,1186	3,9683	0,8576	1,559×10 ⁻³	1,581×10 ⁻³
<i>Kilogramme metre/sec</i>	kgm/s	9,807	8,434	1	33,47	7,233	1,315×10 ⁻²	1,333×10 ⁻²
<i>British thermal unit/hour</i>	BTU/h	0,293	0,252	0,02988	1	0,2161	0,393×10 ⁻³	0,398×10 ⁻³
<i>Foot pound/second</i>	ft lb/s	1,356	1,166	0,1383	4,627	1	1,818×10 ⁻³	1,844×10 ⁻³
<i>Brake horsepower</i>	BHP	745,7	641,3	76,04	2547	550	1	1,0139
<i>Horsepower (metric)</i>	CV	735,5	632,53	75	2512,2	542,4	0,986	1

VELOCITY				
UNIT		m/s	ft/s	km/h
<i>Metre per second</i>	m/s	1	3,2808	3,6
<i>Foot per second</i>	ft/s	0,3048	1	1,0973
<i>Kilometre per hour</i>	km/h	0,2778	0,9113	1

PRESSURE								
UNIT		Pa	bar	at	mm Hg	kgf/m ²	psi	lbf/ft ²
<i>Pascal</i>	Pa	1	1x10 ⁻⁵	1,0197x10 ⁻⁵	0,0075	0,10197	0,145x10 ⁻³	0,02088
<i>Bar</i>	bar	1x10 ⁵	1	1,0197	750,07	10197	14,5050	2088
<i>Atmosphere (Kgf/cm²)</i>	at	98070	0,9807	1	735,56	10000	14,223	2048,16
<i>Millimetre of mercury</i>	mm Hg	133,32	1,3332x10 ⁻³	1,3595x10 ⁻³	1	13,595	0,0193	1,392
<i>Kilogramme per sq. mtr.</i>	kgf/m ²	9,807	9,807x10 ⁻⁵	1x10 ⁻⁴	0,0735	1	0,0014	0,205
<i>Pounds per sq. Inch</i>	psi	6894,14	0,06894	0,0703	51,719	703,07	1	144
<i>Pounds per sq. foot</i>	lbf/ft ²	47,876	4,7876x10 ⁻⁴	4,8824x10 ⁻⁴	0,7183	4,8824	0,00694	1

WATER HARDNESS					
UNIT		°Fr	°dH	GPG	ppm
<i>French degree</i>	°Fr	1	0,56	0,583	10,0
<i>German degree</i>	°dH	1,79	1	1,040	17,9
<i>Grain/US gallon</i>	GPG	1,71	0,958	1	17,1
<i>Parts per million</i>	ppm	0,10	0,056	0,0583	1

TEMPERATURE							
°C	°F	°C	°F	°C	°F	°C	°F
-35	-31	40	104	115	239	190	374
-30	-22	45	113	120	248	195	383
-25	-13	50	122	125	257	200	392
-20	-4	55	131	130	266	205	401
-15	5	60	140	135	275	210	410
-10	14	65	149	140	284	215	419
-5	23	70	158	145	293	220	428
0	32	75	167	150	302	225	437
5	41	80	176	155	311	230	446
10	50	85	185	160	320	235	455
15	59	90	194	165	329	240	464
20	68	95	203	170	338	245	473
25	77	100	212	175	347	250	482
30	86	105	221	180	356	255	491
35	95	110	230	185	365	260	500

Conversion equations	$T(^{\circ}F) = (1,8 \times T(^{\circ}C)) + 32$
	$T(^{\circ}C) = 0,55 \times (T(^{\circ}F) - 32)$
	$T(K) = T(^{\circ}C) + 273,15$