

Reference Guide



TO CONVERT	MULTIPLY BY	TO OBTAIN
BAR	1019.7	GRAMS/CM ³
BAR	29.53	INCHES Hg at 0 DEG C
CENTIMETERS	0.3937	INCHES
CARATS	0.2	GRAM
CUBIC CENTIMETERS	0.0610237	CUBIC INCHES
CUBIC FEET	0.0283	CUBIC METERS
CUBIC FEET	7.4805	GALLONS
CUBIC FEET	1728	CUBIC INCHES
CUBIC FEET	0.037	CUBIC YARDS
CUP	8	FLUID OUNCE
FEET	30.48	CENTIMETERS
FEET PER MINUTE	0.01136	MILES/HOUR
FEET HEAD OF WATER	0.433	POUNDS/INCH ²
GALLONS	3.785	LITERS
GALLONS	128	OUNCES (liquid)
GALLONS/ MINUTE	2.228 X 10 ⁻³	CUBIC FEET/SECOND
GRAMS	0.002205	POUNDS
GRAMS	0.035274	OUNCES
GRAMS	5	CARATS
GRAMS PER LITER	1000	PARTS PER MILLION
GRAMS/CM ³	0.036127	POUNDS/INCH ³
INCHES	2.54	CENTIMETERS
INCHES	0.0254	METERS
KILOGRAMS	2.2046	POUNDS
KILOMETERS	3281	FEET
KILOMETERS	0.6214	MILES
KILOMETERS/HOUR	0.62137	MILES/HOUR
LITERS	0.2642	GALLONS
LITERS	33.814	OUNCES

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METERS	3.281	FEET
METERS	39.37	INCHES
METERS/SECOND	2.2369	MILES/HOUR
SQUARE METER	10.764	SQUARE FEET
CUBIC METER	35.3147	CUBIC FEET
CUBIC METER	1.30795	CUBIC YARD
MILES	5280	FEET
MILES	1.609	KILOMETER
MILES/HOUR	88	FEET/MINUTE
MILES/HOUR	0.447	METER/SECOND
MILLILITERS	0.0338	OUNCES (fluid)
MILLILITERS	0.0002642	GALLONS
OUNCES (fluid)	29.573	MILLILITERS
OUNCES (weight)	28.35	GRAMS
PARTS PER MILLION	0.001	GRAMS/LITER
PARTS PER MILLION	1	MILLIGRAM/KILOGRAM
POUNDS	0.4536	KILOGRAMS
POUNDS	453.6	GRAMS
POUNDS/INCH ²	6.9	KILOPASCALS
POUNDS/INCH ²	0.06895	BAR
POUNDS/INCH ²	0.068046	ATMOSPHERE
QUARTS	0.9463	LITERS
SQUARE CENTIMETER	0.001076	SQUARE FEET
SQUARE CENTIMETER	0.155	SQUARE INCHES
SQUARE FEET	0.0929	SQUARE METERS
SQUARE INCH	6.452	SQUARE CENTIMETERS
TON (2000LBS)	907	KILOGRAMS
CUBIC YARD	27	CUBIC FEET
CUBIC YARD	0.7645	CUBIC METER

Reference Guide

Diamond Characteristics

Chemical Formula: C—Carbon
Atomic Weight: 12.01
Density: 3.5–3.53 g/cc
Thermal Conductivity: 2000Wm⁻¹K⁻¹
Hardness (Mohs): 10
Index of Refraction: ≈ 2.417

GROUP IA: H (1.008)
 GROUP IIA: He (4.003)
 GROUP IIIA: B (10.811), Al (26.982), Ga (69.72), In (114.82), Tl (204.38)
 GROUP IVA: C (12.011), Si (28.086), Ge (72.61), Sn (118.71), Pb (207.2)
 GROUP VA: N (14.007), P (30.974), As (74.922), Sb (121.76), Bi (208.980)
 GROUP VIA: O (15.999), S (32.066), Se (78.96), Te (127.60), Po (209)
 GROUP VIIA: F (18.998), Cl (35.453), Br (79.904), I (126.904), At (210)
 GROUP VIII A: Ne (20.180), Ar (39.948), Kr (83.80), Xe (131.29), Rn (222)

CODE (Crystal Structure)

Cubic, Face Centered	Phonobohedral
Cubic, Body Centered	Orthorhombic
Cubic	Monoclinic
Diamond	Tetragonal

58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
140.12	140.907	144.24	[145]	150.35	151.96	157.25	158.925	162.50	164.930	167.26	168.934	173.04	174.967
90	91	92	93	94	95	96	97	98	99	100	101	102	103
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
232.038	231.036	238.03	237.048	[244]	243	247	247	[251]	[252]	[257]	[258]	[259]	[262]

1 mil = 25.4 micrometers
 1 micrometer = 0.0394 mil
 Fahrenheit to Celsius $C = (5/9) * (F-32)$
 Celsius to Fahrenheit $F = ((9/5) * C) + 32$
 Celsius to Kelvin $K = C + 273$
 $\pi = 3.1415926535$
 $e = 2.7182818284$
 $\sqrt{2} = 1.4142135623$
 1 radian = $180^\circ / \pi$
 $1^\circ = \pi/180$ radians

Micron Size	Approximate Mesh Equivalent
0.10	220,000
0.25	100,000
0.50	60,000
1	15,000
3	8,000
6	3,000
9	1,800
12	1,500
15	1,200
30	600
45	400

Factor	Prefix	Symbol	Factor	Prefix	Symbol
10 ¹⁸	exa	E	10 ⁻¹	deci	d
10 ¹⁵	peta	P	10 ⁻²	centi	c
10 ¹²	tera	T	10 ⁻³	milli	m
10 ⁹	giga	G	10 ⁻⁶	micro	μ
10 ⁶	mega	M	10 ⁻⁹	nano	n
10 ³	kilo	k	10 ⁻¹²	pico	p
10 ²	hecto	h	10 ⁻¹⁵	femto	f
10 ¹	deka	da	10 ⁻¹⁸	atto	a

Innovations in Superabrasive Products