Conversion Charts and Formulas

METRIC SYSTEM

LENGTH - Basic unit is a meter

Metric					
Unit	Meters	Inches	Feet	Yards	Miles
Millimeter (mm)	.001	-	-	-	-
Centimeter (cm)	.01	.3937	-	-	-
Decimeter (dm)	.1	3.937	.3281	.1094	-
Meter (m)	1	39.37	3.281	1.094	-
Decameter (dkm)	10	393.7	32.81	10.94	-
Hectometer (hm)	100	3937	328.1	109.4	-
Kilometer (km)	1000	-	3281	1094	.6214

To convert

Inch to mm - multiply by 25.4 mm to inch - multiply by .03937 feet to meters - multiply by .3048 Meters to feet - multiply by 3.281 Yards to meters - multiply by .9144 Meters to yards - Multiply by 1.094 Miles to km - multiply by 1.609 km to miles - multiply by .6214

Area - Basic unit is centare (ca) which is one square meter

Metric		Square	Square	Square	
Unit	Centares	Inchces	Feet	Yards	Acres
Sq. Millimeter(sq. mm)	0.000001	-	-	-	-
Sq. Centimeter(sq. cm)	0.0001	0.1550	-	-	-
Sq. Decemeter(sq. dm)	0.01	15.50	0.1076	-	-
Centare/sq. meter (ca/sq m)	1	1550	10.76	1.196	-
Are (a)	100	-	1076	119.6	-
Hectare (ha)	10,000	-	-	-	2.471
Sq. Kilometer(sq. km)	1,000,000	-	-	-	247.1

To convert

Sq. in. to sq. cm - multiply by 6.452 Sq. cm to sq. in. - mutliply by .1550 Sq. Ft. to sq. m. - multiply by .0929 Sq. m. to sq. ft. - multiply by 10.76 Sq. yds to sq. m. - multiply by .8361 Sq. m. to sq. yds. - multiply by 1.196 Acres to Hectares - multiply by .4047 Hectares to Acres - multiply by 2.471 Acres to sq. km - mukltiply by .004047 Sq. km to Acres - multiply by 247.1 Sq. miles to sq. km - multiply by 2.590 Sq. km to sq. miles - multiply by .3861

VOLUME - Basic unit is stere (s) which is 1 cubic meter

Metric Unit	Steres	Cubic Inch	Cubic Foot	Cubic Yards
Cu. Millimeter (cu mm)	.000000001	-	-	-
Cu. Centimeter (cu cm)	.000001	.06102	-	-
Cu. Decimeter (cu dm)	.001	61.023	-	-
Desistere (ds)	.1	6102.3	3.531	.1308
Stere/Cu Meter (s/cu m)	1	61023	35.31	1.308
Decastere (dks)	10	-	353.1	13.08

To convert

Cu. In. to Cu. Mm - multiply by 1639 Cu. Ft. to Cu. M - multiply by .0283 Cu. Mm to Cu. In. - multiply by .000061 Cu. M to Cu. Ft - multiply by 35.31Cu. In. to Cu. cm - multiply by 16.39 Cu. Yards to Cu. M - multiply by .7646 Cu. Cm. To Cu. In.- multiply by .06102 Cu. M to Cu. yds - multiply by 1.308

Weight - Basic unit is gram (g)

Metric				
Unit	Grams	Grains	Ounces	Pounds
Milligram(mg)	0.001	0.01543	-	-
Centigram (cg)	0.01	0.1543	-	-
Decigram (dg)	0.1	1.543	-	-
Gram	1	15.43	0.03527	-
Decagram (dkg)	10	154.3	0.3527	-
Hectogram (hg)	100	1543	3.527	0.22046
Kilogram (kg)	1000	-	35.27	2.2046
Quintal (q)	100,000	-	3527	220.46
Metric Ton (MT)	1,000,000	-	-	2204.6

To convert

g to cg - multiply by 6.48 cg to g - multiply by .1543 Ounces to g - multiply by 31.103

g to Ounces - multiply by .03527 Pounds to kg - multiply by .4536 kg to Pounds - multiply by 2.2046

Tons(2000#) to Metric Tons - multiply by .9078 Metric Tons to Tons(2000#) - multiply by 1.1023

Specific Gravity of LiquidsSpecific gravity is the ratio of chemical weight per gallon divided by the weight of water per gallon.

		Specific
Liquid	Temp °F	Gravity
Water (1 cu. Ft. weighs 62.41 lb) 50	1.00
Brine (Sodium Chloride 25%)	32	1.20
Pennsylvannia Crude Oil	80	0.85
Fuel Oil No. 1 and 2	85	0.95
Gasoline	80	0.74
Kerosene	85	0.82
Lubricating Oil SAE 10-20-30	115	0.94

	-	Specific
Liquid	Temp °F	Gravity
30% Acetic Acid	68	1.04
50% Acetic Acid	68	1.05
20% Chromic Acid	68	1.16
20% Hydrogen Peroxide	68	1.07
25% Methyl Alcohol	68	0.96
10% Nitric Acid	68	1.05
20% Nitric Acid	68	1.11

		Specific
Liquid	Temp °F	Gravity
20% Phosphoric Acid	68	1.11
20% Dsodium Hydroxide	68	1.21
50% Sodium Hydroxide	68	1.52
20% Sulphuric Acid	68	1.14
50% Sulphuric Acid	68	1.40
98% Sulphuric Acid	68	1.83

¹ Gallon = 3.7854 liters

¹ liter = 0.26417 gallons

Conversion Charts and Formulas

Conversion Constants

Inches Feet 0.0833 Inches of water Inches of Mercury 0.0736 Inches of water Inches of Mercury 0.0736 Inches of water Inches of water Ounces per sq. inch 0.578 Inches of water Inches of water Ounces per sq. inch 0.578 Inches of water Inches of water Inches of water Ounces per sq. inch 0.578 Inches of water Inches of water Ounces per sq. inch 0.578 Inches of water Inches of Water 13.57 Inches of Water 1.000 Inches of Wat	To Change	То	Multiply By	To Change	То	Multiply By
Feet	Inches	Feet	0.0833	Inches of water	Inches of Mercury	0.0736
Feet Yards 0.3333 Inches of Mercury Inches of Water 13.57	Inches	Millimeters	25.4	Inches of water	Ounces per sq. inch	0.578
Variable Variable	Feet	Inches	12	Inches of water	Pounds per sq. foot	5.2
Square Inches Square Feet 0.00694 Inches of Mercury Pounds per sq. inch 0.4898 Square Feet Square Inches 144 Ounces per sq. inch Inches of Mercury 0.17 Square Feet Square Yards 0.11111 Ounces per sq. inch Inches of Water 1.73 Square Yards Square feet 9 Pounds per sq. inch Inches of Water 27.71 Cubic Inches Cubic Feet 0.00058 Pounds per sq. inch Feet of water 2.309 Cubic Feet Cubic Vards 0.3703 Pounds per sq. inch Inches of Mercury 2.042 Cubic Feet Cubic Vards 0.3703 Pounds per sq. inch Inches of Mercury 2.042 Cubic Feet Cubic Vards 0.3703 Pounds per sq. inch Inches of Mercury 2.042 Cubic Feet Cubic Feet 27 Feet of water Pounds per sq. inch O.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.134 cu. Ft. per min. 500 lb. per hr. x sp. Gr. Feet of water Short Tons Cubic Feet Cub	Feet	Yards	0.3333	Inches of Mercury	Inches of Water	13.57
Square Feet Square Inches 144 Ounces per sq. inch Inches of Mercury 0.17	Yards	Feet	3	Inches of Mercury	Feet of Water	1.131
Square Feet Square Yards Square Yards Square feet 9	Square Inches	Square Feet	0.00694	Inches of Mercury	Pounds per sq. inch	0.4898
Square Yards	Square Feet	Square Inches	144	Ounces per sq. inch	Inches of Mercury	0.17
Cubic Inches Cubic Feet 0.00058 Pounds per sq. inch Feet of water 2.309 Cubic Feet Cubic Inches 1728 Pounds per sq. inch Inches of Mercury 2.042 Cubic Feet Cubic Feet 27 Feet of water Pounds per sq. inch 0.08805 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1327 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1327 Atmosphere Pounds per sq. inch 14.70 Gallons Ounces 16 Short Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Long Tons Pounds <td< td=""><td>Square Feet</td><td>Square Yards</td><td>0.11111</td><td>Ounces per sq. inch</td><td>Inches of Water</td><td>1.73</td></td<>	Square Feet	Square Yards	0.11111	Ounces per sq. inch	Inches of Water	1.73
Cubic Feet Cubic Inches 1728 Pounds per sq. inch Inches of Mercury 2.042 Cubic Feet Cubic Yards 0.03703 Pounds per sq. inch Atmosphere 0.06805 Cubic Vards Cubic Feet 27 Feet of water Pounds per sq. inch 0.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Cubic Feet Gallons 7.48 Feet of water Pounds per sq. inch 1.470 Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 1.470 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 1.470 Gallons Pounds of Water 8.337 Atmosphere Pounds of Mecury 29.92 Gallons O.12004 Long Tons 2.04 2.00 2.00 Ounces Pounds 0.0625 Short Tons Long Tons 0.89 1 gpm = 0.134 cu. Ft. per min. = 500 lb. per hr. x sp. Gr. °F = (°F - 32) x 0.556 500lb.	Square Yards	Square feet	9	Pounds per sq. inch	Inches of Water	27.71
Cubic Feet Cubic Yards 0.03703 Pounds per sq. inch feet of water Atmosphere 0.06805 Cubic Nards Cubic Feet 27 Feet of water Pounds per sq. inch 0.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 0.4331 Cubic Feet Gallons 7.48 Feet of water Inches of Mercury 0.8843 Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Pounds per sq. inch 14.70 Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2200 Pounds per sq. Inch 0.03609 Pressure	Cubic Inches	Cubic Feet	0.00058	Pounds per sq. inch	Feet of water	2.309
Cubic Yards Cubic Feet 27 Feet of water Pounds per sq. inch 0.4331 Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. inch 62 Cubic Feet Gallons 7.48 Feet of water Inches of Mercury 0.8843 Gallons Cubic Inches 231 Atmosphere Pounds of Mercury 29.92 Gallons Cubic Feet 0.1337 Atmosphere Inches of Mecury 29.92 Gallons Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Dounds 2000 Pounds Ounces 16 Short Tons Long Tons 0.89 1 gpm = 0.134 cu. Ft. per min. **C **F = (*F - 32) x 0.556 **F = 1 gal. (inches of Mecury **Descriptions **P **C **F **C **C **C **F	Cubic Feet	Cubic Inches	1728	Pounds per sq. inch	Inches of Mercury	2.042
Cubic Inches Gallons 0.00433 Feet of water Pounds per sq. foot 62 Cubic Feet Gallons 7.48 Feet of water Inches of Mercury 0.8843 Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Inches of Mecury 29.92 Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2200 Pounds Ounces 16 Short Tons Long Tons 0.89 Inches of Water Pounds per sq. inch 0.0625 Short Tons Long Tons 0.89 Inches of Water Flow Temperature 1 2000 1 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000	Cubic Feet	Cubic Yards	0.03703	Pounds per sq. inch	Atmosphere	0.06805
Cubic Feet Gallons 7.48 Feet of water Inches of Mercury 0.8843 Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Inches of Mecury 29.92 Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2000 Pounds Ounces 16 Short Tons Long Tons 0.89 Inch ounces Pounds per sq. Inch ounces 16 Short Tons Long Tons 0.89 Inch ounces Pounds per sq. Inch ounces 16 Short Tons Long Tons 0.89 Inch ounces Flow Temperature 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Cubic Yards	Cubic Feet	27	Feet of water	Pounds per sq. inch	0.4331
Gallons Cubic Inches 231 Atmosphere Pounds per sq. inch 14.70 Gallons Cubic Feet 0.1337 Atmosphere Inches of Mecury 29.92 Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2000 Pounds Ounces 16 Short Tons Long Tons 0.89 Inches of Water Pounds per sq. Inch 0.03609 Inches of Water Pounds 2000 Inches of Water Pounds per sq. Inch 0.03609 Inches of Water	Cubic Inches	Gallons	0.00433	Feet of water	Pounds per sq. foot	62
Gallons Cubic Feet 0.1337 Atmosphere Inches of Mecury 29.92 Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2000 Pounds Ounces 16 Short Tons Long Tons 0.89 Inches of Water Pounds per sq. Inch 0.03609 Fort Tons Long Tons 0.89 Flow Temperature Temperature Temperature	Cubic Feet	Gallons	7.48	Feet of water	Inches of Mercury	0.8843
Gallons Pounds of Water 8.337 Atmosphere Feet of water 34 Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces Pounds 0.0625 Short Tons Pounds 2000 Pounds Ounces 16 Short Tons Long Tons 0.89 Inch of Water Pounds per sq. Inch 0.03609 Long Tons Pounds 2000 Inch of Water Pounds 2.000 Short Tons Long Tons 2.000 Dounds 2000 Inch of Water Pounds 2.000 Short Tons Long Tons Long Tons 2.000 Short Tons Long Tons Long Tons 2.000 Short Tons Long Tons Short Tons Long Tons Short Tons Long Tons Short Tons Long Tons 0.89 Pounds Ecc (1.8) + 32 To	Gallons	Cubic Inches	231	Atmosphere	Pounds per sq. inch	14.70
Pounds of Water Gallons 0.12004 Long Tons Pounds 2240 Ounces 16 Short Tons Pounds 2000 Pounds per sq. Inch 0.03609 Short Tons Long Tons 0.89 Flow Temperature Temperature 1 gpm = 0.134 cu. Ft. per min. °C = (°F - 32) x 0.556 °F = C(1.8) + 32 °F = 2.01 in. 9 colspan="3">Volume 1 cu. Ft. per min. (cfm) = 1 gpm / sp. Gr. Volume 1 gal. (US) = 128 fl. Oz. (US) 9 colspan="3">Pounds per sq. in. = 2.31 cu. ln. 1 gal. (US) = 128 fl. Oz. (US) 9 colspan="3">Pounds per sq. in. = 0.833 gal. (Brit.) = 0.833 gal. (Brit.) 1 cu. Ft. = 7.48 gal. (US) 1 cu. Ft. = 7.48 gal. (US) 1 lb. (avir) = 16 oz. (avoir) = 7000 grain = 7000 grain = 7000 grain = 10.8 per sq. in. = 7000 grain = 7000	Gallons	Cubic Feet	0.1337	Atmosphere	Inches of Mecury	29.92
Pounds of Water Ounces Gallons Pounds 0.0625 Long Tons Short Tons Pounds 2000 Pounds Ounces 16 Inches of Water 16 Short Tons Long Tons 10.89 Flow Temperature 1 gpm = 0.134 cu. Ft. per min. = 500 lb. per hr. x sp. Gr. = 500 lb. per hr. x sp. Gr. = 1 gpm / sp. Gr. °C = (°F - 32) x 0.556 = (°F -	Gallons	Pounds of Water	8.337	Atmosphere	Feet of water	34
Pounds Pounds per sq. Inch 0.03609 Pounds per sq. Inch 0.03609	Pounds of Water	Gallons	0.12004	Long Tons	Pounds	2240
Pounds per sq. Inch	Ounces	Pounds	0.0625	Short Tons	Pounds	2000
Flow Temperature 1 gpm = 0.134 cu. Ft. per min. °C = (°F - 32) x 0.556 = 500 lb. per hr. x sp. Gr. °F = C(1.8) + 32 500lb. Per hr. = 1 gpm / sp. Gr. Volume 1 cu. Ft. per min. (cfm) = 448.8 gal. Per hr. (gph) Volume Volume 1 gal. (US) = 128 fl. Oz. (US) = 231 cu. ln. = 231 cu. ln. = 0.833 gal. (Brit.) = 0.833 gal. (Brit.) 1 ft. water at 60°F 1 cu. Ft. = 7.48 gal. (US) 1 ft. water at 60°F 0.49 lb. Per sq. in. Mass I in. Hg at 60°F = 0.49 lb. Per sq. in. 1 lb. (avoir) = 16 oz. (avoir) = 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = 1 ton (short) = 2000 lb.	Pounds	Ounces	16	Short Tons	Long Tons	0.89
1 gpm	Inches of Water	Pounds per sq. Inc	h 0.03609			
## Sould be per hr. x sp. Gr. ## Sould be per hr. (gph) ## Pressure 1 gal. (US)		Flow			Temperature	
= 500 lb. per hr. x sp. Gr. = 1 gpm / sp. Gr. 1 cu. Ft. per min. (cfm) Pressure 1 lb. Per sq. in. = 2.31 ft. water at 60°F 1 ft. water at 60°F 1 in. Hg at 60°F 2 lo. 49 lb. Per sq. in. = 10.84 in. hg at 60°F 1 lb. Per sq. in. = 0.49 lb. Per sq. in. = 1.13 ft. water at 60°F 1 lb. Per sq. in. = 1.13 ft. water at 60°F 1 lb. Per sq. in. = 1.10 (svoir) = 7000 grain 1 lb. Per sq. in. = 2000 lb.	1 gpm	= 0.134	cu. Ft. per min.	°C	= (°F - 32)	x 0.556
Tou. Ft. per min. (cfm) 448.8 gal. Per hr. (gph) Volume 1 gal. (US) = 128 fl. Oz. (US) = 231 cu. In. 1 lb. Per sq. in. = 0.833 gal. (Brit.) = 2.04 in. hg at 60°F 1 cu. Ft. = 7.48 gal. (US) 1 ft. water at 60°F Mass I in. Hg at 60°F Mass I in. Hg at 60°F = 16 oz. (avoir) = 7000 grain I lb. Per sq. in. = 1 ton (short) = 2000 lb.	.	= 500 lb.	per hr. x sp. Gr.	°F	= C(1.8) + 1	32
1 gal. (US)	500lb. Per hr.	= 1 gpm	/ sp. Gr.			
Pressure = 231 cu. In. 1 lb. Per sq. in. = 2.31 ft. water at 60°F = 0.833 gal. (Brit.) 1 ft. water at 60°F 1 cu. Ft. = 7.48 gal. (US) 1 ft. water at 60°F Mass I in. Hg at 60°F 0.49 lb. Per sq. in. 1 lb. (avoir) = 16 oz. (avoir) = 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = 1 ton (short) = 2000 lb.	1 cu. Ft. per min. (cfm)	= 448.8	gal. Per hr. (gph)		Volume	
1 lb. Per sq. in. = 2.31 ft. water at 60°F = 0.833 gal. (Brit.) = 2.04 in. hg at 60°F 1 cu. Ft. = 7.48 gal. (US) 1 ft. water at 60°F = 0.4333 lb. Per sq. in. = 0.884 in. hg at 60°F I in. Hg at 60°F = 0.49 lb. Per sq. in. 1 lb. (avoir) = 16 oz. (avoir) = 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = 1 ton (short) = 2000 lb.				1 gal. (US)	= 128 fl. Oz	z. (US)
= 2.04 in. hg at 60°F		Pressure		<u></u>	= 231 cu. li	n.
1 ft. water at 60°F = 0.4333 lb. Per sq. in. = 0.884 in. hg at 60°F	1 lb. Per sq. in.	= 2.31 ft.	. water at 60°F		= 0.833 gal. (Brit.)	
= 0.884 in. hg at 60°F I in. Hg at 60°F = 0.49 lb. Per sq. in. = 1.13 ft. water at 60°F I lb. Per sq. in. gauge (psig)+ 1 ton (short Mass Mass		= 2.04 in	. hg at 60°F	1 cu. Ft. = 7.48 gal. (US)		(US)
I in. Hg at 60°F = 0.49 lb. Per sq. in. 1 lb. (avoir) = 16 oz. (avoir) = 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = lb. Per sq. in. gauge (psig)+ 1 ton (short) = 2000 lb.	1 ft. water at 60°F	= 0.4333	Blb. Per sq. in.			
= 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = lb. Per sq. in. gauge (psig)+ 1 ton (short = 2000 lb.		= 0.884 i	n. hg at 60°F	Mass		
= 1.13 ft. water at 60°F = 7000 grain I lb. Per sq. in. = lb. Per sq. in. gauge (psig)+ 1 ton (short = 2000 lb.	I in. Hg at 60°F	= 0.49 lb	. Per sq. in.			voir)
I lb. Per sq. in. = lb. Per sq. in. gauge (psig)+ 1 ton (short = 2000 lb.	3			, ,		,
, , , , , , , , , , , , , , , , , , , ,	I lb. Per sq. in.			•		
				1 ton (long)		