gentec
Total Energy Solutions

Conversion Tables and Useful Calculations

Fluid Flow - To Convert

m^3/min	to	US Gall/min	Multiply By	264
Tonnes/hr	to	m^3/hr	Multiply By	(1.0/Specific Gravity)
Kg/sec	to	m^3/hr	Multiply By	(3.6/Specific Gravity)
m^3/hr	to	I/hr	Multiply By	1000
m^3/hr	to	Gall/min	Multiply By	3.66
I/sec	to	Gall/min	Multiply By	13.2
ft^3/min	to	I/sec	Multiply By	2.12

Air Flow - To Convert

Cfm	to	m^3/hr	Multiply By	1.7

Heat Duty -To Convert

kW	to	BTU	Multiply By	3412
Ton Cooling	to	kW	Multiply By	3.5
kW	to	Kcal/hr	Multiply By	860

Temperature - To Convert

°F	to	°C	Subtract 32 then Multiply By 0.55

Pressure - To Convert

Bar	to	Ib/in	Multiply By	14.5
Bar	to	m/water	Multiply By	10.2
Bar	to	ft/water	Multiply By	33.5
Bar	to	KPa	Multiply By	100

To Size a Fluid Chiller:-

Q (Heat Load in kW) = M (Flow in I/s) x Sh (Specific Heat KJ/Kg/K) x Sg (Specific Mass Kg/m^3) x ΔT

(If the flow given is a Mass Flow in Kg/s, then the Sg is not required)

To Size an Air Conditioning Job:-

Q (Heat Load in kW) = U (U Value of Walls, Roof, Floor) x A (Surface Area of Walls, Roof etc in m^2) x ΔT

Fluid Properties - Specific Heats (KJ/Kg/K) and Specific Gravities

Sea Water	4.01	1.02	Air	1.00	1.00
30% Ethylene Glycol	3.70	1.04	Milk	3.77	1.02
30% Propylene Glycol	3.90	1.03	Whisky	4.18	0.79
30% Hydrochloric Acid	2.66	1.16	Fruit Juice	3.73	1.02
30% Sulphuric Acid	4.19	1.00	Beer	3.75	1.06
Diesel Fuel	1.89	0.95	Typical HT Fluids	1.55	0.93

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