

GRANDEURS	SYMBOLES	UNITES	AUTRES UNITES	FORMULES
LONGUEUR	L	[m]	1 Pouce = 25,4 [mm]	1000 m = 1Km Mille nautique : 1mille = 1852 m 1 mile = 1609,244 m
SURFACE	S	[m ²]	1 are = 100 [m ²] 1 ha = 10 000 [m ²]	Surface rectangle = L x ℓ Surface cercle = π x R ² Surface cercle = (π x d ²)/4
VOLUME	V	[m ³]	1 [m ³] = 1000 litres 1 [dm ³] = 1 litre 1 Gallon US = 3,78 litres	
FORCE / POIDS	\vec{F}	[N]	g = 9,81 [N]	Force = Pression x Surface Force = M x g [N] = [kg] x 9,81 [N/kg]
MASSE	M	[kg]	1000 [kg] = 1 Tonne [T]	
PRESSION	P	[Pa] [bar]	1 mmCE = 10 [Pa] 1 mCE = 10 ⁴ [Pa] 1 mCE = 0,1 [bar] 1 [bar] = 10 ⁵ [Pa] 1 [bar] = 10 mCE 1 [kg/cm ²] = 1 [bar] 1 [PSI] = 6895 [Pa]	Pression = Force / Surface <u>Pour un fluide</u> P = masse volumique . g . hauteur P = [kg/m ³] . 9,81 . [m]
MASSE VOLUMIQUE	ρ (Rbô)	[kg/m ³]		Eau = 1 kg par litre à 4°C Fioul = 0,84 kg par litre
VOLUME MASSIQUE	V _m	[m ³ /kg]		air = 1,2 [m ³ /kg]
VITESSE	V	[m/s] [km/h]	1 [m/s] = 3,6 [km/h]	V = Distance / temps
TEMPS	T	[s]	1 [h] = 3600 [s] 1 [min] = 60 [s]	
DEBIT VOLUMIQUE	Q _v	[m ³ /s]	1 [l/s] = 3600 [l/h] = 3,6 [m ³ /h]	Q _v = S x V [m ³ /s] = [m ²] x [m/s]
DEBIT MASSIQUE	Q _m	[kg/s]	1 [kg/s] = 3600 [kg/h]	Q _m = Q _v x P [kg/s] = [m ³ /s] x [kg/m ³]
TEMPERATURE	T θ (Thêta)	[K] [°C]	[°C] + 273 = [K]	
CHALEUR TRAVAIL	Q W	Joule [J]	1 [cal] = 4,18 [J] 1 [kcal] = 4,18 [kJ] 1 [Wh] = 3600 [J]	
CHALEUR MASSIQUE	C _m	[kJ/kg.K]		C _m de l'eau = 4,18 [kJ/kg.K] C _m de l'eau = 1,16 [Wh/kg.°C] C _m Air = 1 [kJ/kg.K] C _m Air = 2,7 . 10 ⁻⁴ [Wh/kg.°C]

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PUISSANCE	P	[W] [J/s]	1,16 [W] = 1 [kcal/h] 1000 W = 1 kW 1 MW = 1 000 kW	$P = Q_m \times C_m \times \Delta\theta$ $P = \text{Energie} / \text{Temps}$ 1 [W] = 1 [V.A] 1Ch = 736W
ENERGIE	E W	[J] [Wh]	1 [Wh] = 3600 [J]	E = volume x Cm x Δθ E = Puissance x Temps
POUVOIR CALORIFIQUE	PCI	[kJ/kg]		Gaz naturel = 10,2 [kWh/m ³] Fioul = 11,9 [kWh/kg]
ECART DE TEMPERATURE	Δθ ΔT	[K] [°C]		On peut très bien mesurer un écart de température
INTENSITE	I	[A]		
TENSION	U	[V]		
RESISTANCE	R	[Ω]		