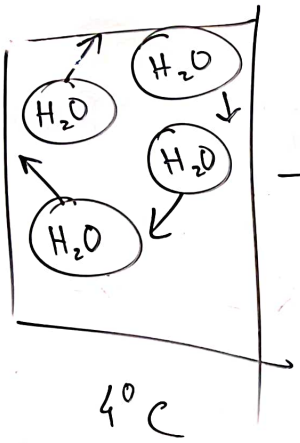
0°C to 4°C

0°C - 4°C



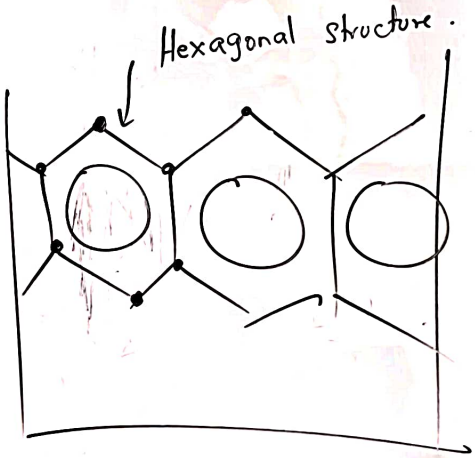
4°C

(Liquid state)

(Water)

Cool down.
(Expands)

Heat up
(Contraction)

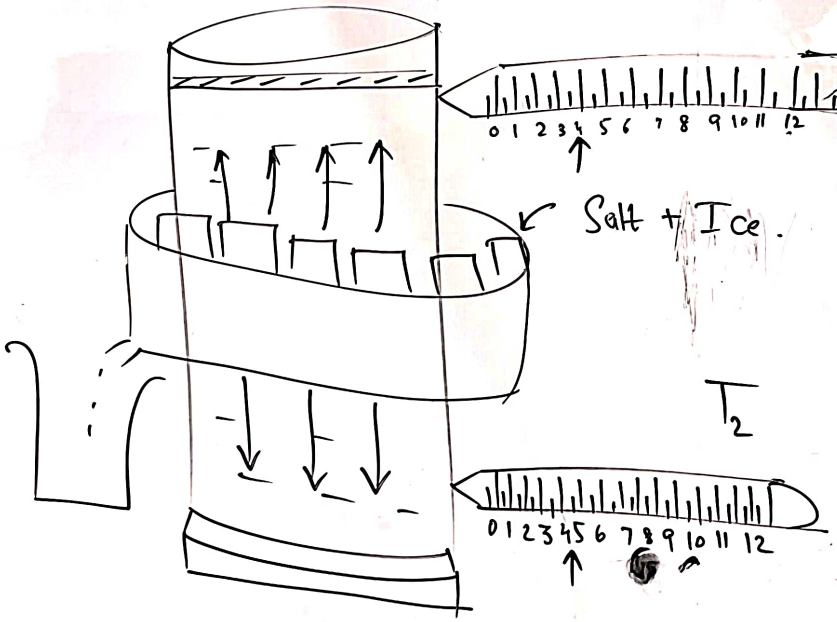


0°C

(Solid state)

(Ice)

Hope's Apparatus.



Density.

$\uparrow \rho = \frac{M}{V}$

$\rho \propto \frac{1}{V}$

① $V\uparrow \; \rho\downarrow$

$V\downarrow \; \rho\uparrow$

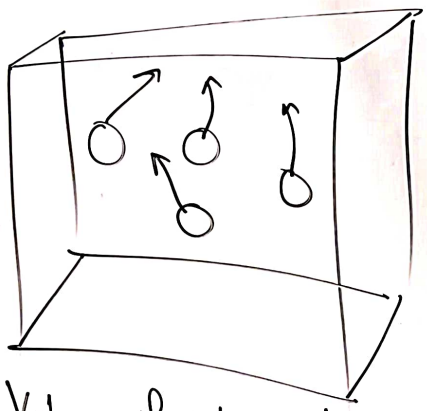
② $\rho \propto M$

$M\uparrow \; \rho\uparrow$

$M\downarrow \; \rho\downarrow$

Humidity.

Absolute Humidity



Volume of cube = 1 cu. m.

Mass of vapour = ?

SI Unit of absolute humidity = $1 kg / m^3$

Relative Humidity.

Mass of vapour = 80 g

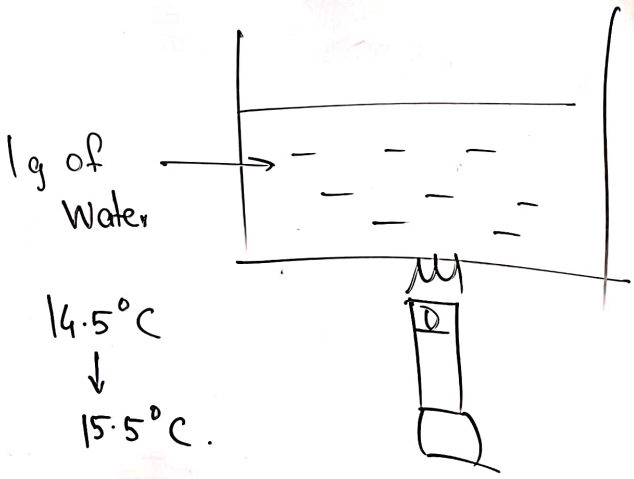
Mass of vapour needed to saturate the air = 100 g

$$= \frac{80\,g}{100\,g} \times 100$$

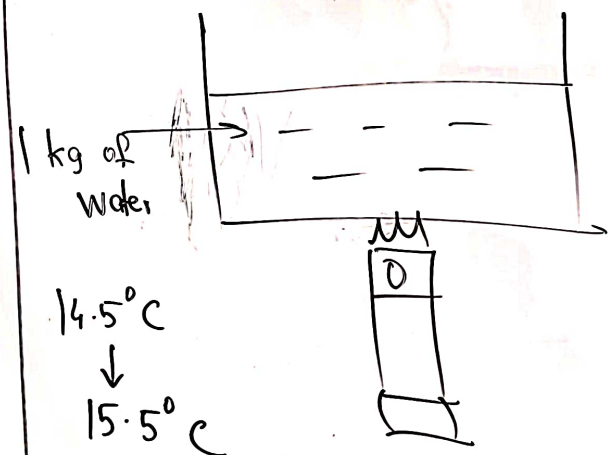
Relative humidity = 80 %.

Unit of Heat.

One calorie of heat

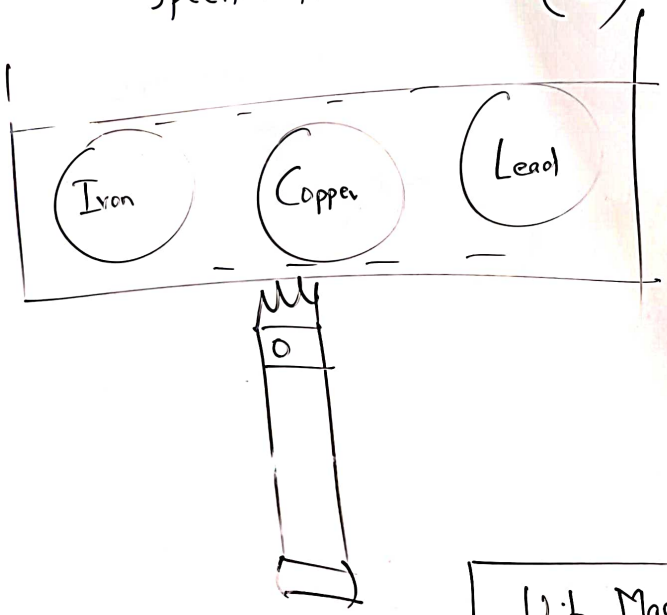


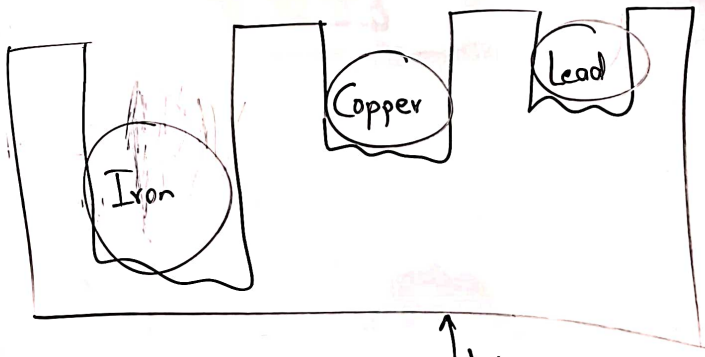
One kcal of heat.



$1\ cal = 4.18\ J$

Specific Heat Capacity (c)



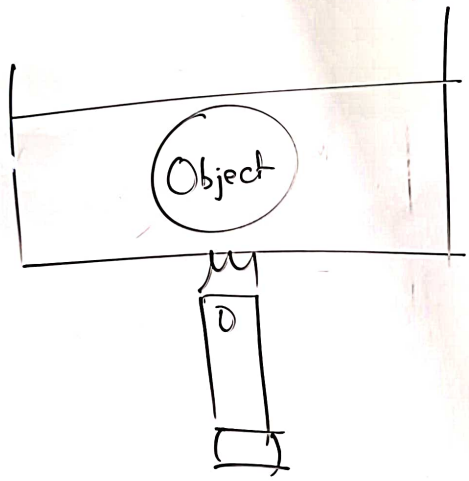


↑ Wax slab.

Unit Mass of Solid.
↳ 1 g or 1 kg.
Raise the temperature by 1°C.

SI unit: J/kg K.

Specific Heat Capacity (c)



m = Mass of object

c = Specific heat capacity of object.

ΔT = Change in Temperature.

↑ delta

Heat absorbed $(Q) = m \times c \times \Delta T$.