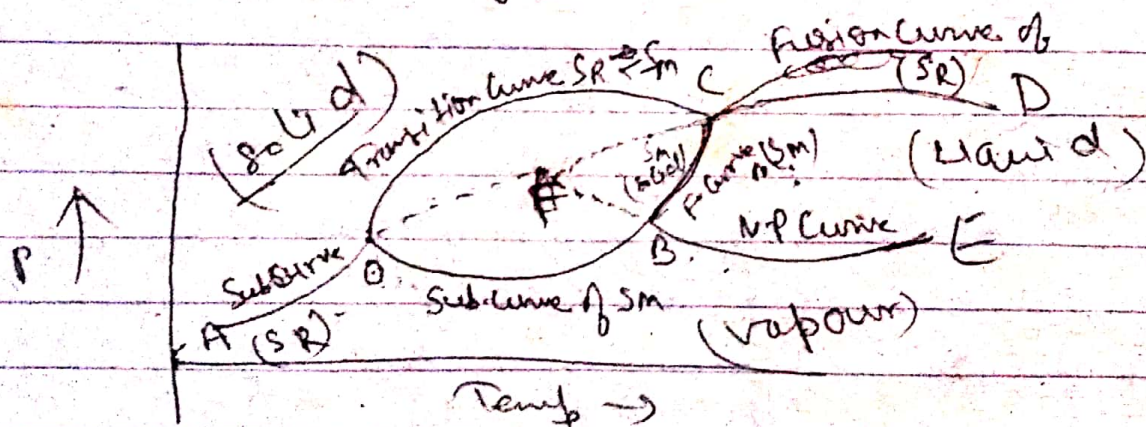


Sulphur system →

It is one-component four-phase system
Four phases are

- (i) Rhombic Sulphur (SR) } solid
- (ii) Monoclinic Sulphur (SM) }
- (iii) Sulphur liquid (SL)
- (iv) Sulphur vapour (SV)

The two crystalline forms of sulphur SR & SM exhibit enantiotropy with a transition point at 35.6°C. Below this temp. SR is stable while above it SM is the stable variety.



(1) The phase diagram of sulphur has five curves

AO →	Sub. Curve for SR	$SR \rightleftharpoons SV$
OC →	Transition Curve	$SR \rightleftharpoons SM$
OB →	Sub. Curve of SM	$SM \rightleftharpoons SV$
BC →	Fusion Curve of SM	$SM \rightleftharpoons SL$
CD →	Fusion Curve of SR	$SR \rightleftharpoons SL$
BE →	N.P. Curve	$SL \rightleftharpoons SV$

The curve AO is Sub. Curve of SR the equilibrium involved is $SR \rightleftharpoons SV$ & is univariant.

Therefore the system along all these curves is monovariant.

(ii) Triple points \rightarrow There are three triple points. viz., O, B & C.

Triple point O \rightarrow This is the meeting point of these curves AO, OB & OC.

Three phases S_R , solid S_m & S_V are in equilibrium at the point O.

here from phase rule

$$F = C - P + 2 = 1 - 3 + 2 = 0.$$

Therefore the system ~~along~~ at triple point O is non variant.

Triple point B \rightarrow The curves OB, BE & BC meet at this point. The three phases ~~are~~ in equilibrium are S_m , S_L & S_V .

Triple point C \rightarrow The curves OC, CB & CD meet at this point. The phases in equilibrium are S_R , S_m & S_L .

The triple points B & C are also nonvariant.

(iii) Areas \rightarrow The phase diagram of Sulphur has four areas,

AOC \rightarrow solid rhombic

OBC \rightarrow solid monoclinic

OCBE \rightarrow liquid Sulphur

AOBE \rightarrow vapour Sulphur

The system along these areas is bivariant.