

Q. An alloy of tin and lead contains 73% of tin. Find the mass of eutectic in 1 kg of solid alloy if the eutectic contains 64% tin.

alloy  $\rightarrow$  Sn (Tin)  $\rightarrow$  73%  
 $\searrow$  Pb (lead)  $\rightarrow$   $(100 - 73) = 27\%$

1 kg of alloy is given

i.e. amount of Tin = 730 g of Sn

amount of lead = 270 g of Pb

Now, In eutectic composition tin is 64%,  
 so Pb = 36%

64% of Sn } eutectic mixture  
 36% of Pb }

Then,  $x = 64\%$  Sn  
 $270 \text{ g} = 36\%$  Pb

$$\cancel{x \neq} \quad x \times 36 = 270 \times 64$$

$$\left( \text{The mass of Sn } (x) \right) \quad x = \frac{270 \times 64}{36} = \underline{480 \text{ g}}$$

The mass of Sn = 480 g  
 will go in eutectic mixture

Out of 730 g of Sn, 480 g will go in eutectic composition.

So,

Total wt. of eutectic is due to Sn + due to Pb.  
 or  
 mass



classmate

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Total mass of eutectic  $\Rightarrow$  due to Sn + due to Pb

$$= 480 + 270$$

$$= 750g$$

Ans

Ans