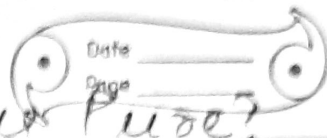


Hru

30/7/2021

Odm Connect

Is Matter Around us Pure?



1. Distinguish between concentration & solubility.

i) Concentration is the amount of solute dissolved in a unit quantity of a solution. While solubility is the max. amount of the solute that can be dissolved in a given amount of the solvent.

ii) Concentration is expressed as percent by weight or volume, mole fraction, molarity etc. Solubility is the ability of a solute to dissolve in a solvent at given temperature & pressure. It is expressed as grams / litre or moles / litre.

2. How much amount of water should be added with 24 ml of alcohol to make a solution of concentration of 12.5%?

Assuming that the percentage alcohol in the original solution is % by volume, 12 ml of 12% ~~alcohol~~ alcohol solution contains ~~12~~

$$12 \times \frac{12}{100} = 1.44 \text{ ml of pure}$$

alcohol.

If we let, x = the final volume of the 6% v/v alcohol solution we wish to make we can write the following equation

$$6 = \frac{1.44}{x} \times 100$$

Multiplying both sides of the equation by x we get :-

$$6x = 100 \times 1.44$$

$$x = \frac{144}{6}$$

$$x = 24$$

Therefore if the final volume of the 6% solution is 24 ml, we need