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Solution 42

Physical change - Sublimation of solid, Formation of clouds, making of fruit salad from raw fruits, dissolving CO_2 in water

Chemical change - Decomposition of water into H_2 and O_2 by passing electric current

Solution 43

Physical change - Melting of candle wax, mixing of iron filings and sand, breaking a piece of chalk, cutting a piece of paper

Chemical change - Burning of candle wax, burning of wood, burning of piece of paper

Solution 44

When sea water is a mixture of dissolved salts and water only, it is homogeneous solution.

And if sea water contains suspended impurities like decayed plants or animal material, etc. then it is called heterogeneous solution.

Solution 45

Sugar solution, Salt solution, copper sulphate solution and ammonium chloride solution do not show Tyndall effect.

Solution 46

(a) The change in which no new substance is formed is called a physical change.

Example- Melting of candle wax, mixing of iron filings and sand

(b) The change in which new substance is formed is called a chemical change.

Example- Burning of candle wax, burning of wood

Solution 47

(a).

PHYSICAL CHANGE	CHEMICAL CHANGE
1. No new substance is formed in a physical change. 2. It is a temporary change. 3. It is easily reversible. 4. Very little heat or light energy is usually absorbed or given out in this process. 5. Mass of substance does not alter.	1. New substance is formed in a chemical change. 2. A chemical change is a permanent change. 3. This process is usually irreversible. 4. A lot of heat or light energy is absorbed or given out in this process. 5. Mass of substance does alter in this process.

(b) Chemical change - Coal burning in air, making of cake

Physical change- A glass bottle breaking, wool being knitted into a sweater.

Solution 48

(a) The maximum amount of a solute which can be dissolved in 100 g of a solvent at a specified temperature is known as the solubility of that solute in that solvent .

The solubility of solids in liquids is directly proportional to temperature whereas the solubility of gases in liquids is inversly proportional to temperature.

(b) This statement means that 100 g of water can dissolve a maximum of 20.7 g of copper sulphate at 20°C.

(c) The solubility of solids in liquids increases on increasing the temperature and decreases on decreasing the temperature.

Solution 49

(a) A solution is a homogeneous mixture of two or more substances.

Example- Salt solution, metal alloys.

(b) A suspension is a heterogeneous mixture in which the small particles of a solid are spread throughout a liquid without dissolving

in it.
Example- Muddy-water, Milk of magnesia.
(c) A colloid is a kind of solution in which the size of solute particles is intermediate between those in true solutions and those in suspensions.
Example- Soap solution, milk.
Solution 50
(a) A solution in which no more solute can be dissolved at that temperature is called a saturated solution while a solution in which more quantity of solute can be dissolved without raising its temperature is called an unsaturated solution.
To test the saturation or unsaturation of a solution, more solute may be added to the solution. If that solute gets dissolved in the solution then the solution will be unsaturated.
To test whether a given solution is saturated or not, add some more solute to the solution and try to dissolve it by stirring. If solute does not dissolve in the given solution, then it will be a saturated solution.
(b) Take some water in a beaker and heat it slowly with the help of burner. Now, start adding sodium chloride salt to the hot water with a spoon and stir it with a glass rod continuously so that sodium chloride goes on dissolving in water. Take the temperature of water up to 25°C and then keeping this temperature constant, go on adding sodium chloride till no more sodium chloride dissolves in it and some undissolved crystals will be left at the bottom. The contents of the beaker are now filtered and the clear solution obtained is the saturated solution of sodium chloride at 25°C.
If the temperature is lowered from 25°C to 10°C, then some of the crystals of sodium chloride will separate out from the solution in the form of solute crystals.

********** END **********