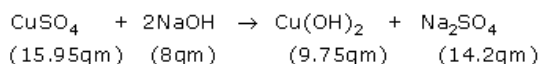




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Solution 75

According to question-



Clearly, in this case

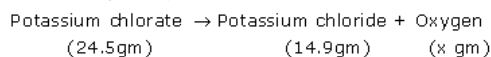
total mass of reactants = (15.95 gm + 8 gm) = 23.95 gm

total mass of products = (9.75 gm + 14.2 gm) = 23.95 gm

Hence, Law of conservation of mass is valid here.

Solution 76

According to question-



Let, x gm of oxygen is formed

Then, according to law of conservation of mass-

24.5 gm = 14.9 gm + x gm

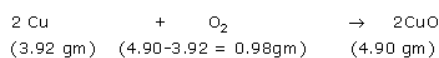
So, x = (24.5 - 14.9) gm = 9.6 gm.

Thus, 9.6 gm of oxygen is formed in the reaction

Solution 77

According to question-

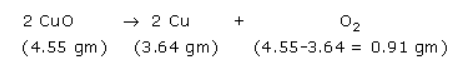
Reaction 1-



$$\frac{3.92}{3.92} = 1, \frac{0.98}{3.92} = 0.25, \frac{4.90}{3.92} = 1.25$$

So, 1 equivalent of Cu reacts with 0.25 equivalent of O₂ to form 1.25 equivalent of copper oxide.

Reaction 2-



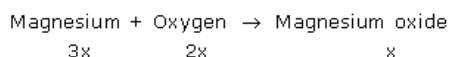
$$\frac{4.55}{3.64} = 1.25, \frac{3.64}{3.64} = 1, \frac{0.91}{3.64} = 0.25$$

Here again, one can see that 1.25 equivalent of CuO decomposed to form 1 equivalent of Cu and 0.25 equivalent of oxygen.

Hence, law of constant proportion is verified.

Solution 78

According to question-



i.e. three equivalents of Mg reacts with 2 equivalents of O₂ to form 1 equivalent of MgO.

When mass of Mg = 3x = 24 gm

So, x = 8 gm

Then, mass of oxygen required = 2x = 16 gm

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Solution 79

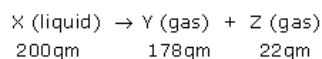
When 5 gm of calcium is burnt in 2 gm of oxygen, then 7 gm of calcium oxide is formed. So, calcium and oxygen combine in the fixed proportion of 5:2 by mass.

Now, when 5 gm of calcium is burnt in 20 gm of oxygen, then also 7gm of calcium oxide will be formed because chemical reactions follows law of constant proportion.

As a result, 18 gm of oxygen will be left unreacted.

Solution 80

According to question-



(a) Liquid X - Water

Gas Y - Oxygen

Gas Z - Hydrogen

(b) mass of Z / mass of Y = $22\text{ gm} / 178\text{ gm} = 1:8$

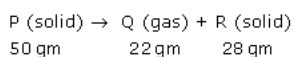
(c) Law of constant proportion is illustrated by this example.

(d) Two sources of liquid X - Sea, Well

(e) Gas Y (oxygen) is necessary for breathing.

Solution 81

According to question-



(a) Solid P - Calcium Carbonate (CaCO_3)

Gas Q - Carbon dioxide (CO_2)

Solid R - Calcium oxide (CaO)

(b) Total mass of Q and R = $22\text{ gm} + 28\text{ gm} = 50\text{ gm}$

(c) Total mass of Q and R (50gm) is equal to mass of reactant (50gm).

(d) The law of conservation of mass is followed, i.e. total mass of product is equal to mass of reactant.

(e) Law of conservation of mass is illustrated by the example.

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Solution 01

Ions

Solution 02

(a) Anions ; (b) Cations

Solution 03

The formula mass of an ionic compound is the relative mass of its 'formula unit' as compared with the mass of a Carbon-12 atom taken as 12 units.

***** END *****