

Name:

Class:



Calculate the percentage by mass of carbon in a molecule of propane (C_3H_8). Give your answer to one decimal place. (Relative atomic masses: $\text{C} = 12$, $\text{H} = 1$)

$$\text{Mr of } \text{C}_3\text{H}_8 = (3 \times 12) + (8 \times 1) = 36 + 8 = 44$$

$$\text{Total mass of carbon} = 3 \times 12 = 36$$

$$\text{Percentage mass} = (36 \div 44) \times 100 = \mathbf{81.8\%}$$

$$\text{Percentage mass} = \mathbf{81.8\%}$$

Give the general formula for an alkane.

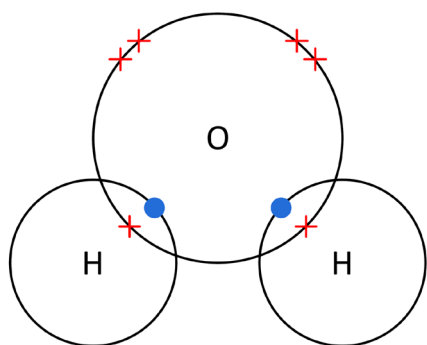


Give the formula for nitric acid.



Complete the figure below to show the arrangement of the outer shell electrons of the hydrogen and oxygen atoms in a molecule of water.

Use dots (•) or crosses (x) to represent the electrons.



i. Name the type of bonding in a molecule of water.

Covalent (bonding)

ii. Why does pure water not conduct electricity?

There are **no ions/delocalised electrons/charged particles** which can move and carry charge.

Describe a test to show that a gas is ammonia.

Test: moist/damp red litmus.

Positive result: if the gas is ammonia the damp red litmus paper will turn blue.

Describe a test to show if a sample contains bromide ions.

Test: add nitric acid and silver nitrate solution.

Positive result: if bromide ions are present a cream precipitate will be seen.

Calculate the Mr of K_2SO_4 .

$$2(39) + 32 + 4(16) = 174$$

Give the electronic configuration of a Ca^{2+} ion.

2, 8, 8

Complete and balance the equations for the reactions that occur by writing the appropriate state symbol after each formula.

