

Answer on Question #43172 - Chemistry - Physical Chemistry

Question:

What is the mass percent of hydrogen in water? Atomic weights: H= 1, O= 16

- a) 33.3%
- b) 5.5%
- c) 11.1%
- d) 20.0%

Answer:

The molecular mass of water (H₂O) is:

$$M(\text{H}_2\text{O}) = M(\text{H}) + M(\text{H}) + M(\text{O}) = 1 + 1 + 16 = 18;$$

where M(H) is the atomic weight of hydrogen and M(O) is the atomic weight of oxygen.

Then mass percent of hydrogen in water is:

$$\frac{1 + 1}{18} \times 100\% = 0.111 \times 100\% = 11.1\%$$

Answer: c) 11.1%