Answer on Question #68945-Physics-Other

The molecular formula of a certain compound is X4O6. If 5.72gram X in 10 gram of X4O6 then what is atomic weight of X?

Solution

We can make an equation basing on given chemical formula that connects atomic weights of elements:

$$\frac{4M(X)}{4M(X) + 6M(O)} = 5.72/10$$

$$\frac{4M(X)}{6M(O)} = \frac{5.72}{10 - 5.72} = \frac{5.72}{4.28}$$

M(O) = 16.

$$2M(X) = 3 \cdot 16 \cdot 1.336 = 64.15$$

$$M(X) = 32.07 \frac{g}{mol}.$$

Answer: $32.07 \frac{g}{mol}$.