

Formula

molecular

identificar los procedimientos para obtener la fórmula molecular.

1. obtenga la fórmula empírica y molecular si tiene 48% carbono, hidrogeno 4%, Nitrogeno 22,4, Azufre 12,8%, oxigeno 12,8% y masa de 1.000 g.

Carbono 48% $\frac{48g}{12g/mol} = 2$

Hidrogeno 4% $\frac{4g}{1g/mol} = 4$

Nitrogeno 22.4% $\frac{22.4}{14g/mol} = 1.6$

Azufre 12.8% $\frac{12.8}{32g/mol} = 0.4$

Oxigeno 12.8% $\frac{12.8}{16g/mol} = 0.8$

$$C = 2 / 0.9 = 5 \times 12 = 60$$

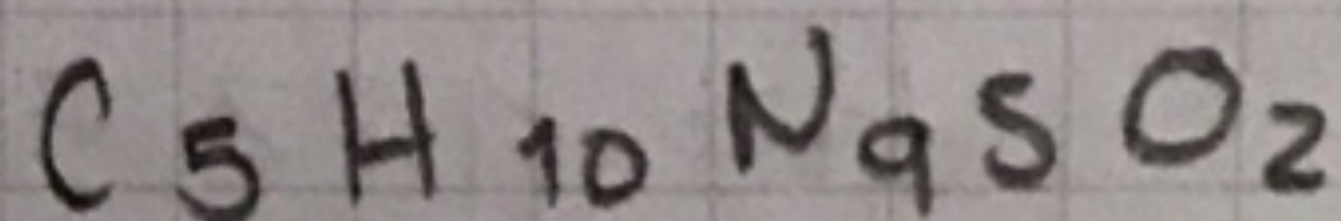
$$H = 4 / 0.9 = 10 \times 1 = 10$$

$$N = 1.6 / 0.9 = 4 \times 14 = 56$$

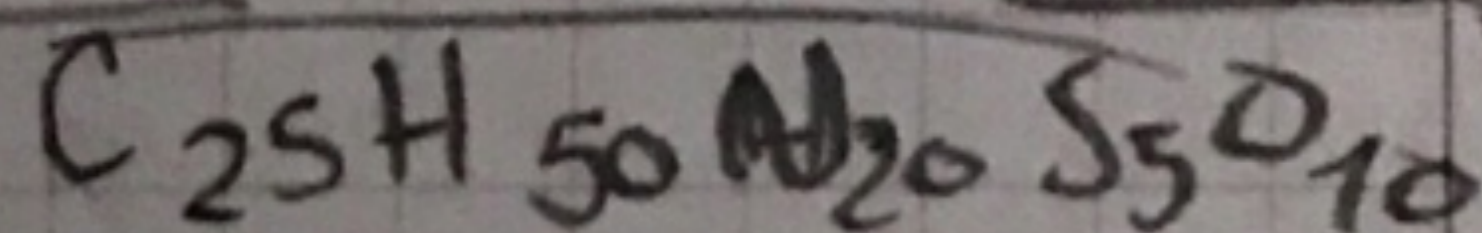
$$S = 0.4 / 0.9 = 1 \times 32 = 32$$

$$O = 0.8 / 0.9 = 2 \times 16 = 32$$

$$\underline{\underline{190}}$$



$$n = \frac{1.000}{190} = 5$$



2. Obtenga la fórmula empírica y molecular si hay Carbono 40%, hidrogeno 6.7% y oxígeno 53.3%. Con una masa de 90 gramos.

Carbono $\frac{40g}{12g/mol} = 3.3$

$$3.3 / 3.3 = 1$$

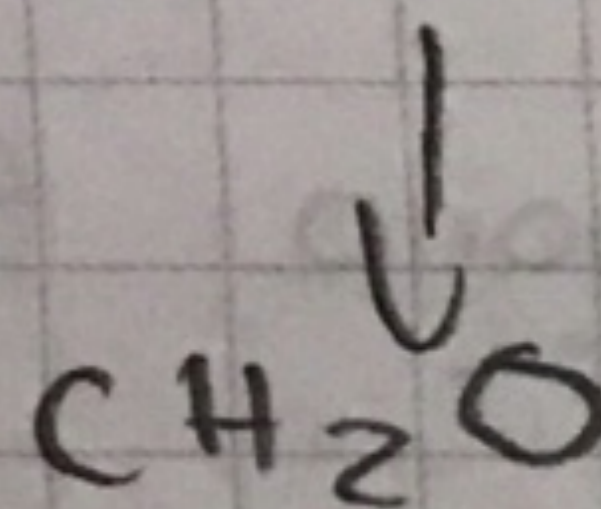
Hidrogeno $\frac{6.7g}{1g/mol} = 6.7$

$$6.7 / 3.3 = 2$$

Oxígeno $\frac{53.3g}{16g/mol} = 3.331$

$$3.331 / 3.3 = 1$$

masa = 90g



$$C = 12 \times 1 = 12$$

$$H = 1 \times 2 = 2$$

$$O = 1 \times 16 = 16$$

30

$$n = \frac{90}{30} = 3$$

