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1.0 g of coal

what % S in coal?

0.0130 g H_2S

$$0.0130 \text{ g } H_2S \times \frac{\cancel{\text{mol } H_2S}}{34.09 \text{ g } H_2S} \times \frac{1 \text{ mol } S}{\cancel{1 \text{ mol } H_2S}} = 3.8 \times 10^{-4} \text{ mol } S$$

$$3.8 \times 10^{-4} \text{ mol } S \times \frac{32.07 \text{ g } S}{1 \text{ mol } S} = 0.0122 \text{ g } S$$

$$\% S = \frac{0.0122 \text{ g } S}{1.0 \text{ g coal}} \times 100\% = 1.22\% S \text{ in coal sample}$$