

You have a compound with only Potassium, Oxygen and Nitrogen (the very astute among you may already have an idea what it is likely to be). The percentages are: O, 47.47%; N, 13.85%; and K, 38.67%. What is the formula?

oxygen: $47.47_{\text{g}} \times \frac{\text{mol}}{16.00\text{g}} = 2.97_{\text{mol}}$

Nitrogen: $13.85_{\text{g}} \times \frac{1 \text{ mol}}{14.01\text{g}} = 0.989_{\text{mol}}$

Potassium $38.67_{\text{g}} \times \frac{1 \text{ mol}}{39.1\text{g}} = 0.989_{\text{mol}}$

Looks pretty clearly like it is KNO_3