

Question #72377, Chemistry / General Chemistry

What mass of Fe₂O₃ would you expect from a gravimetric analysis of a sample that contains 0.257 mol of iron?

Solution

$$n(\text{Fe}_2\text{O}_3) = 0,5 n(\text{Fe})$$

$$n(\text{Fe}_2\text{O}_3) = 0,5 * 0,257 = 0,1285 \text{ mol}$$

$$M_r(\text{Fe}_2\text{O}_3) = 159,7 \text{ g/mol}$$

$$m(\text{Fe}_2\text{O}_3) = n(\text{Fe}_2\text{O}_3) * M_r(\text{Fe}_2\text{O}_3)$$

$$m(\text{Fe}_2\text{O}_3) = 0,1285 * 159,7 = 20,52 \text{ g}$$

Answer

20,52 g

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