Question #60480, Chemistry / General chemistry

Find the mass in grams of 3.5 x 10^23 molecules of $KMnO_4$

Solution

$$\begin{aligned} &n \text{ (KMnO}_4) = \text{N/N}_a = 3.5*10^{23} \text{ / } 6.02*10^{23} = \text{ 0.58 (mol)} \\ &\text{M (KMnO}_4) = 39 + 55 + 4*16 = 158 \text{ (g/mol)} \\ &\text{m(KMnO}_4) = 0.58*158 = 91.64 \text{ (g)} \end{aligned}$$

Answer

$$m(KMnO_4) = 91.64 g$$

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