Answer on Question #50319, Chemistry, Other

What would be the mass of 2.41 x 10^{24} formula units of barium hydroxide?

Solution:

Barium hydroxide is $Ba(OH)_2$

M_r = 171.34 g/mol

N_A = 6.02 x 10^{23} mol^{-1}

$$n = \frac{N}{N_A} = \frac{m}{M_r}$$

$$m = \frac{M_r \times N}{N_A}$$

$$m = \frac{171.34 \; g/mol \times 2.41 \; \times \; 10^{24}}{6.02 \; \times \; 10^{23} \; 1/mol} = 685.93 \; g$$

Answer:

685.93 g of barium hydroxide