

Answer on Question #50317 - Chemistry – Other

Question

How many moles of CaCl_2 does 2.41×10^{24} formula units represent?

Answer:

The formula unit of CaCl_2 is molecule.

The formula for calculation of number of moles is:

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

N – Number of molecules, $N = 2.41 \times 10^{24}$ g;

N_A – Avogadro constant, $N_A = 6.022 \cdot 10^{23} \text{ mol}^{-1}$.

The number of moles of 2.41×10^{24} molecules of CaCl_2 is:

$$n = \frac{2.41 \cdot 10^{24}}{6.022 \cdot 10^{23}} = 4.0 \text{ mol}$$

Answer: 4.0 mol

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