

Answer on Question#47643 Chemistry – Physical Chemistry

How many formula units make up 30.6g of magnesium chloride (MgCl₂)? Express the number of molecules numerically.

Solution

$$n(\text{MgCl}_2) = \frac{m(\text{MgCl}_2)}{M(\text{MgCl}_2)} = \frac{30,6 \text{ g}}{95,3 \text{ g/mole}} = 0,321 \text{ mole}$$

$N(\text{MgCl}_2) = n(\text{MgCl}_2) \cdot N_A = 0,321 \text{ mole} \cdot 6,02 \cdot 10^{23} \text{ mole}^{-1} = 1,93 \cdot 10^{23}$ - the number of molecules/
formula units.

Answer: $1,93 \cdot 10^{23}$.