Answer on Question #77707, Chemistry / General Chemistry

Number of moles of 10.0g of CuSO4.5H2O

Solution

To answer this question we should use the formula:

n=m/M;

where n- number of moles of a substance

m- mass of a substance

M – molar mass of a substance

Find molar mass of $CuSO_4 \cdot 5H_2O$

$Mr(CuSO_4 \cdot 5H_2O) = Ar(Cu)+Ar(S) +4 \cdot Ar(O)+ 5 \cdot (2 \cdot Ar(H)+ Ar(O))= 64+32+4 \cdot 16+5 \cdot (2 \cdot 1+16)= 250$

Mr=M

$M(CuSO_4 \cdot 5H_2O) = 250$ g/mol

Find number of moles of $CuSO_4 \cdot 5H_2O$:

$n(CuSO_4 \cdot 5H_2O) = 10.0 /250 = 0.04$ (mol)

Answer: 0.04 mol