

Answer on Question #48491 – Chemistry – Organic Chemistry

Fungal laccase, a blue protein found in wood-rotting fungi, is 0.390% Cu by mass. If a fungal laccase molecule contains 4 copper atoms, what is the molar mass of fungal laccase? Please provide the correct number of significant figures!

Solution:

$$W(\text{Cu}) = \frac{m(\text{Cu})}{m(\text{molecule})} = \frac{nM(\text{Cu})}{M(\text{molecule})};$$

n – the number of atoms Cu in 1 molecule;

M – the molar mass (g/mol);

M(Cu) = 63.546 g/mol;

n = 4;

$$M(\text{molecule}) = \frac{nM(\text{Cu})}{W(\text{Cu})};$$

M(molecule) = 65175.4 g/mol = 65.2*10³ g/mol;

Answer: 65.2*10³ g/mol.