Answer on the question #48503, Chemistry, Physical Chemistry

Question:

A compound of phosphorus and chlorine is composed of 10.33gm of phosphorus for every 35.5 gm of chlorine.the simplest formula of the compound is
A) PCl. B) PCl3. C) PC. D) PCl4+

Solution:

The simplest formula of the compound can be calculated as the ration of moles of atoms.

For PxCly molecule: x/y = n(P)/n(Cl)

n(P) = 10.33/30.973762 = 0.33 mol

n(Cl) = 35.5/35.453 = 1.0 mol

x/y = 1/3, hence the simplest formula is PCl3

Answer:B) PCl3