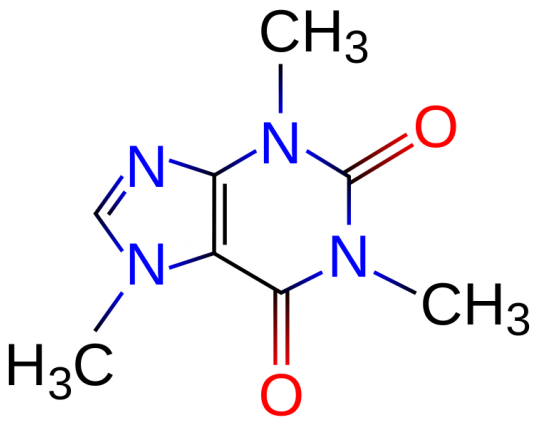
Question #47359, Chemistry, Physical Chemistry

Calculate the mass of nitrogen contained in 0.512 g of caffeine

Answer:



M(caffeine) = 194.19 g/mol

As we can see in caffeine 4 molecules of nitrogen. M(N) = 14 g/mol.

Calculate the percentage of nitrogen in the molecule caffeine:

$$14*4/194.19= 0.2883=28.83\ (\%)$$

Than we can calculate mass of nitrogen in 0.512 g caffeine

$$m(N)=0.512*0.2883=\mathbf{0.148\ g}$$