Answer on the question #42968, Chemistry, Other

Question:

5 Gram Alloy Of Cu And Ag Dissolved In Dilute Nitric Acid And Solution Was Heated With Nacl To Get 2.87 Gram Agcl % Pf Silver In The Alloy Is?

Solution:

The chemical conversions occurred with Silver in the alloy are:

$$Ag \rightarrow Ag^{+} \rightarrow AgCl\downarrow$$

Thus, the amount of Silver chloride is equal to the amount of Silver in the alloy.

The mass fraction of Silver in the alloy is:

$$\omega = \frac{\mathrm{m(Ag)}}{\mathrm{m(alloy)}} * 100\%$$

Silver mass is:

$$\mathrm{m(Ag)} = \mathrm{n(Ag)} * \mathrm{M(Ag)} = \frac{\mathrm{m(AgCl)}}{\mathrm{M(AgCl)}} * 107.8682 = \frac{2.87}{143.3212} * 107.8682 = 2.16\ \mathrm{g}$$

Then,

$$\omega = \frac{2.16}{5} * 100\% = 43.2\ \%$$

Answer: 43.2 %