Question # 83731, answer

For the reaction $3Na_2SO_4$ (aq) + $2Al(NO_3)_3$ (aq) → $Al_2(SO_4)_3$ (s) + $6NaNO_3$ (aq), adding 960.0 ml of 5.20 M Aluminum Nitrate to excess Sodium Sulfate will produce how many grams of Aluminum Sulfate?

Answer:

1) Calculate number of moles of Aluminum Nitrate $Al(NO_3)_3$ = V x C =0.960 L x 5.20 moles/L =4.992 moles
2) According to reaction stoichiometry number of moles of Aluminum Sulfate $Al_2(SO_4)_3$ = moles of Aluminum Nitrate $Al(NO_3)_3$ / 2 = 4.992 moles/ 2 = 2.496 moles
3) Mass of Aluminum Sulfate $Al_2(SO_4)_3$=number of moles x MW = 2.496 x 342.15 g/mole = 854.01 g