

Question # 75421, answer

Dear expert, please provide an answer to the question below within 12 hours.

For the reaction  $3\text{NaSO}_4 (\text{aq}) + 2\text{Al}(\text{NO}_3)_3 (\text{aq}) \rightarrow \text{Al}_2(\text{SO}_4)_3 (\text{s}) + 6 \text{NaNO}_3 (\text{aq})$ , adding 960.0 ml of 5.20 M Aluminum Nitrate to excess Sodium Sulfate will produce how many grams of Aluminum Sulfate?

- A. 4.99 mol  $\text{Al}(\text{NO}_3)_3$
- B. 856 mol  $\text{Al}_2(\text{SO}_4)_3$
- C. 296.4 g  $\text{Al}_2(\text{SO}_4)_3$
- D. 499 g  $\text{Al}(\text{NO}_3)_3$
- E. None of the Above

Answer:

Calculate moles of Aluminum Nitrate  $\text{Al}(\text{NO}_3)_3 = 5.20 \text{ moles/L} \times 0.96 \text{ L} = 4.992 \text{ moles}$

Therefore, moles of Aluminum Sulfate  $\text{Al}_2(\text{SO}_4)_3 = 4.992 / 2 = 2.496 \text{ moles}$

Grams of Aluminum Sulfate  $\text{Al}_2(\text{SO}_4)_3 = 342.15 \text{ g/mol} \times 2.496 \text{ moles} = 854 \text{ g } \text{Al}_2(\text{SO}_4)_3$

Therefore, correct choice is E. None of the Above