

Stoichiometry and Solutions: I

Mole Method Review

Step 1: Balanced Chemical Equation

Step 1: grams / C,v → moles

Step 2: moles given to moles required ratio

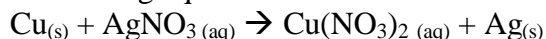
Step 3: moles to grams / or C / or V

Concentration Review

C = moles / volume (L)

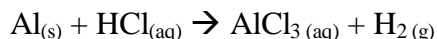
Therefore: Moles = concentration x volume

1. Calculate the volume of 2.00 M AgNO₃ solution that is needed for 12.0 g of Cu to react according to the following equation.

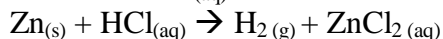


2. How much AgCl_(s) will be formed when 25.0 mL of 0.1 M AgNO₃ is added to an excess of BaCl_{2(aq)}? (Write a balanced equation first!)

3. Calculate the volume of 1.50 M HCl that is required for 5.40 g of Al to react completely.

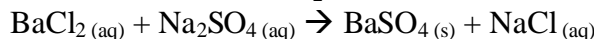


4. Zinc metal reacts with HCl_(aq)...

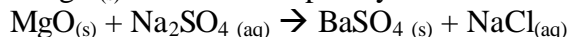


Determine the mass of zinc that is required to completely react with 75.0 mL of 3.0 M HCL.

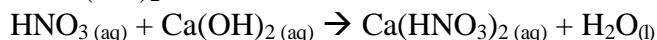
5. Calculate the volume of 0.110 M Na₂SO₄ required to precipitate the maximum mass of BaSO₄ from 60.0 mL of 0.145 M BaCl₂ solution.



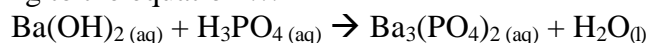
6. What mass of MgO_(s) can react completely with 125 mL of 2 M solution of HCl?



7. How many grams of Ca(NO₃)₂ can be prepared by reacting 125 mL of 5.00 M HNO₃ with an excess of Ca(OH)₂?



8. If 5.25 g of barium hydroxide is to be neutralized with phosphoric acid, 0.200 mol L⁻¹ according to the equation ...



What volume of acid would be required for complete reaction?

[Q: What did the titration say to the other? A: Let's meet at the end-point!!

Q: What do you call a convict who dresses up as a clown? A: Sili-con!!]