

# 6. STOICHIOMETRY OF SOLUTIONS

CH30S

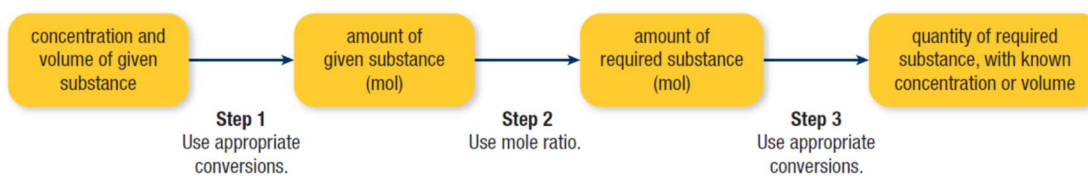
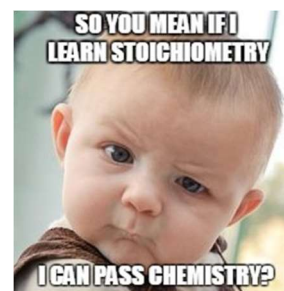
UNIT 2 - SOLUTIONS

WIEBE

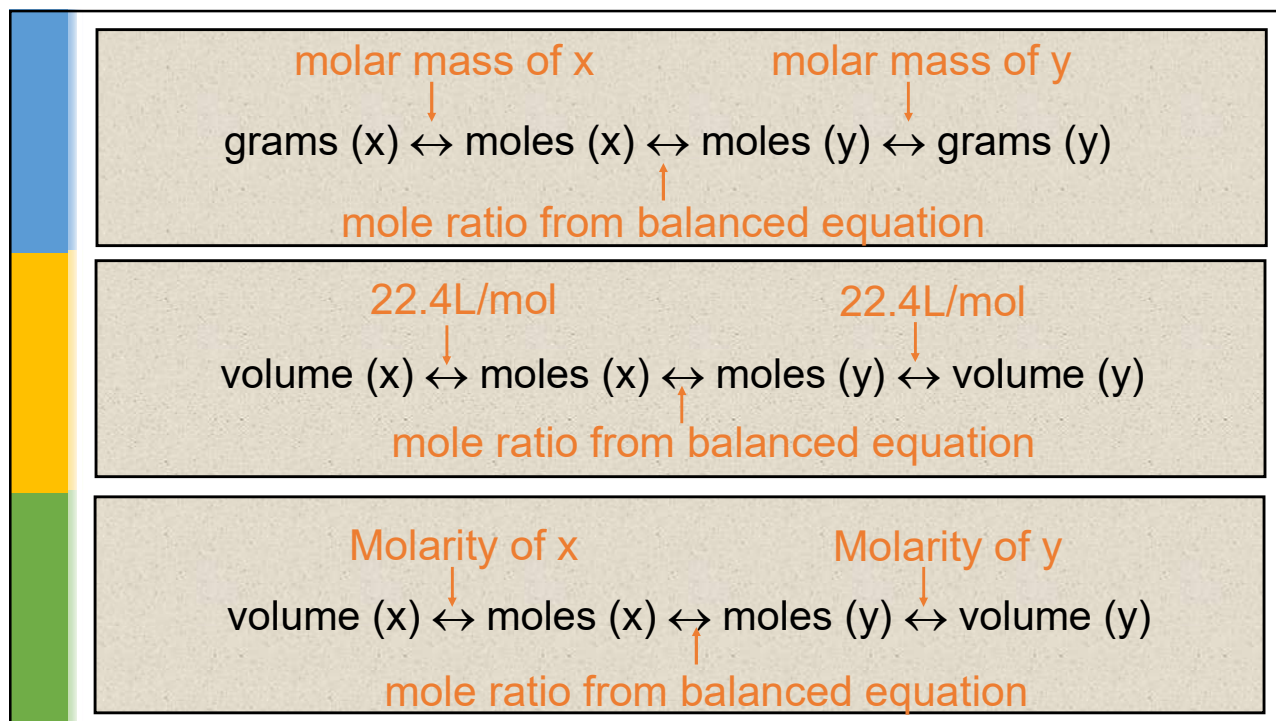
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## GENERAL STOICH PRINCIPLES

Solving stoichiometry problems involves the same general strategy, regardless of the substances involved.



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## EXAMPLE #1

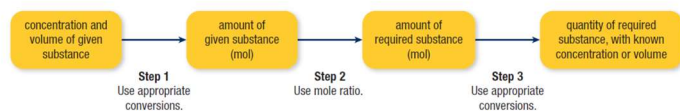
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graph LR
    A[concentration and volume of given substance] -- "Step 1  
Use appropriate conversions." --> B[amount of given substance (mol)]
    B -- "Step 2  
Use mole ratio." --> C[amount of required substance (mol)]
    C -- "Step 3  
Use appropriate conversions." --> D[quantity of required substance, with known concentration or volume]
  
```

Determine the minimum volume of 0.42 mol/L sodium sulfate,  $\text{Na}_2\text{SO}_4(\text{aq})$ , that is required to react completely with all the barium ions in 500.0 mL of a 0.100 mol/L barium chloride,  $\text{BaCl}_2$ , solution.

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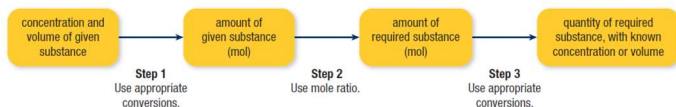
## EXAMPLE #2



Determine the mass of silver that could be produced when 50.0 mL of 0.200 M silver nitrate reacts fully with an excess amount of copper.

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## EXAMPLE #3



Predict the mass of precipitate expected when 1.50 L of 0.800 mol/L sodium carbonate,  $\text{Na}_2\text{CO}_3$ , is mixed with 850 mL of a 1.00 mol/L aluminum nitrate,  $\text{Al}(\text{NO}_3)_3$ , solution.

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