

MOLARITY PROBLEMS

- Calculate the molarity of the following solutions.
 - 1.5g of NaCl is dissolved in water to make 250mL of solution
 - 0.4g of NaOH is dissolved in water to make 150mL of solution
- How many moles of AlCl_3 are in 100mL of a 0.50M solution?
- How many moles of $\text{Ca}(\text{OH})_2$ are in 25mL of a 1.5M solution?
- A reaction calls for the use of 5.00mol of NH_4OH . You have a bottle of 1.5M NH_4OH . How many milliliters of the solution should you add?
- A reaction calls for the use of 0.33mol of H_2SO_4 . You have a bottle of 0.1M H_2SO_4 . How many milliliters should you add?
- How many moles of KClO_3 are in 30mL of a 0.100M solution? How many grams?
- A lab procedure calls for the use of 100mL 0.5M KOH. How many grams of KOH should you add to water to make this solution?
- A lab procedure calls for 40mL of 0.1M NaHCO_3 . You have a stock bottle of 2.0M NaHCO_3 . How many milliliters of the stock solution should you use to make the required solution? How many milliliters of water?

9. A lab procedure calls for 50mL of 0.02M Li_2SO_4 . You have a stock bottle of 1.0M Li_2SO_4 . How many milliliters of the stock solution should you use to make the required solution? How many milliliters of water?
10. A lab procedure calls for 50mL of 0.25M NaOH. You place 100g of NaOH in enough water to make 1.00L of solution. How many milliliters of this solution should you use to make the solution called for in the lab procedure?
11. What information is conveyed by the following label: 0.5 M NaOH ?
12. If you evaporate 32 ml of a 0.50 M CuSO_4 to dryness, how grams of solid copper sulfate would be left on the bottom of the beaker? (ans. 2.55 g)
13. What is the molarity of a solution made by dissolving 11.7g of NaCl in 250 ml of water? (ans. 0.8 M NaCl)
14. How many milliliters of a 0.5 M $\text{K}_2\text{Cr}_2\text{O}_7$ must be evaporated to dryness in order to end up with 2.948 g of solid $\text{K}_2\text{Cr}_2\text{O}_7$? (ans. 20 ml)
15. Starting with solid copper (II) sulfate, how would you prepare 100 ml of a 0.25 M CuSO_4 solution ? Give details....
(ans. 3.99 g of solid is required)
16. An ace chemistry student mixes 60 ml of a 0.5 M NaOH solution with 140 ml of a 0.3M NaOH solution. What is the molarity of the resulting sodium hydroxide solution? (ans. 0.36 M NaOH)