

DILUTION EXERCISES

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78. If 20.0 mL of 0.75 M HBr is diluted to a total volume of 90.0 mL, what is the molar concentration of the HBr in the resulting solution?
79. What is the molar concentration of the KOH solution resulting from mixing 55 mL of 0.15 M KOH and 75 mL of 0.25 M KOH?
80. If 1 drop (0.050 mL) of 0.20 M NaBr is added to 100.00 mL of water, what is the molarity of the NaBr in the resulting solution?
81. What is the molar concentration of the HNO₃ solution resulting from mixing 5.0 mL of 3.5 M HNO₃ and 95 mL of 0.20 M HNO₃?
82. Concentrated HNO₃ is 15.4 M. How would you prepare 2.50 L of 0.375 M HNO₃?
83. Concentrated H₃PO₄ is 14.6 M. How would you prepare 45.0 L of 0.0600 M H₃PO₄?
84. If 300.0 mL of solution A contains 25.0 g of KCl and 250.0 mL of solution B contains 60.0 g of KCl, what is the molarity of the KCl in the solution resulting from mixing solutions A and B?
85. If 500.0 mL of 0.750 M NaCl is boiled down until the final volume is reduced to 300.0 mL, what is the final molarity of the NaCl? (Assume no salt is lost during the boiling process.)
86. How would you prepare 250.0 mL of 0.350 M HCl, starting with 6.00 M HCl?
87. What mass of NaCl is needed to prepare 500.0 mL of 0.400 M NaCl?
88. What is the concentration of the NaOH solution produced by mixing 125.0 mL of 0.250 M NaOH with 200.0 mL of 0.175 M NaOH?
89. What volume of 12.0 M NaOH is required in order to prepare 3.00 L of 0.750 M NaOH?
90. What is the concentration of CaCl₂ produced when 55.0 mL of 0.300 M HCl is mixed with 80.0 mL of 0.550 M CaCl₂?
91. When 350.0 mL of 0.250 M MgCl₂ is boiled down to a final volume of 275.0 mL, what is the molarity of the MgCl₂ in the resulting solution?
92. If 20.0 mL of 0.350 M NaCl and 75.0 mL of 0.875 M NaCl are mixed and the resulting solution is boiled down to a volume of 60.0 mL, what is the molarity of the NaCl in the final solution?
93. A solution is made by mixing 100.0 mL of 0.200 M BaCl₂ and 150.0 mL of 0.400 M NaCl. What is the concentration of sodium chloride in the final solution?
94. If 75.0 mL of 0.200 M Na₃PO₄ is added to 25.0 mL of 0.800 M K₃PO₄, what is the concentration of Na₃PO₄ in the mixture?