Molality and Mole Fraction

Name: _____

1) What is the molality of a solution made by dissolving 0.735 moles of sodium chloride in 1125 g of water?

2) Determine the molality of 19.7 g of potassium chlorate dissolved in 250 g of water.

3) How many moles of sulfur hexafluoride is needed to make a 0.23 m solution when the sulfur hexafluoride will be dissolved in 450 g of mineral oil?

4) What is the mole fraction of water in a solution where 300 g of sucrose ($C_{12}H_{22}O_{11}$) are dissolved in 150 grams of water?

5) How many kg of water is needed to make a 0.45 m solution with 19.2 grams of strontium chloride?

6) What is the mole fraction of copper in a brass solution that is 78% Fe and 22% Cu, by mass?

7) What is the mole fraction of oxygen gas in a 1500 g mixture which contains 21% O_2, 78% N_2, and 1% H_2O?

Answers: 2) 0.643 m   4) 0.904   5) 0.268 kg   7) 0.188   Adv Chem

Molality and Mole Fraction

Name: _____

1) What is the molality of a solution made by dissolving 73.5 grams of sodium chloride in 1125 g of water?

2) How many grams of water would be needed to dissolve 42.6 g of barium chloride in order to produce a 0.475 m solution?

3) How many grams of sulfur hexafluoride is needed to make a 0.323 m solution when the sulfur hexafluoride will be dissolved in 1450 g of mineral oil?

4) What is the mole fraction of water in a solution where 80 g of glucose ($C_6H_{12}O_6$) are dissolved in 50 grams of water?

5) The mole fraction of sodium chloride in an ocean water solution is 0.0567. If the mass of water in a gallon of ocean water is 3.65 kg, how many grams of salt are present?

6) A serving of Gatorade ® is a solution of 240.0 grams of water which has 0.270 g of NaCl, 0.105 g of KH_2PO_4 and 14.0 g of sucrose ($C_{12}H_{22}O_{11}$). What is the molality of each solute, and what is the mole fraction of each compound?

Answers: 2) 431 g   4) 0.862   5) 713 g   Adv Chem