

Question #73065, Chemistry / General Chemistry / Completed

What is the molality of a solution made by dissolving 2.36 g of sodium chloride in 0.632 L of water?

Solution

Molality, also called molal concentration, is a measure of the concentration of a solute in a solution in terms of amount of substance in a specified amount of mass of the solvent.

A commonly used unit for molality in chemistry is mol/kg.*

So $n(\text{NaCl}) = 2.36 \text{ g} / 58.44 \text{ g/mol} = 0.04 \text{ mol}$

0.632 L of water equal to 0.632 kg

Molality $b = 0.04 \text{ mol} / 0.632 \text{ kg} = 0.064 \text{ mol/kg}$

Answer: 0.064 mol/kg.

* <https://en.wikipedia.org/wiki/Molality>

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