

12.7 grams of magnesium chloride is dissolved into water in a flask and set aside for an experiment. The scientist forgets about the solution and the sunlight evaporates it. She needs at least 11 grams of magnesium chloride to continue the experiment. Will she be able to recover enough magnesium chloride from the original flask to continue the experiment?

Solution:

As a rule, all the components of the solution are contained in the vapor above the liquid solution. And the saturated vapor's pressure is equal to the sum of the partial pressures of the components. In some cases, the individual components may be non-volatile at a given temperature and absent in the vapor. It means that all the added salt will remain on the flask's walls (usually above the water level due to capillary forces).

So, scientist will be able to recover enough magnesium chloride from the original flask to continue the experiment.

Answer: Yes.