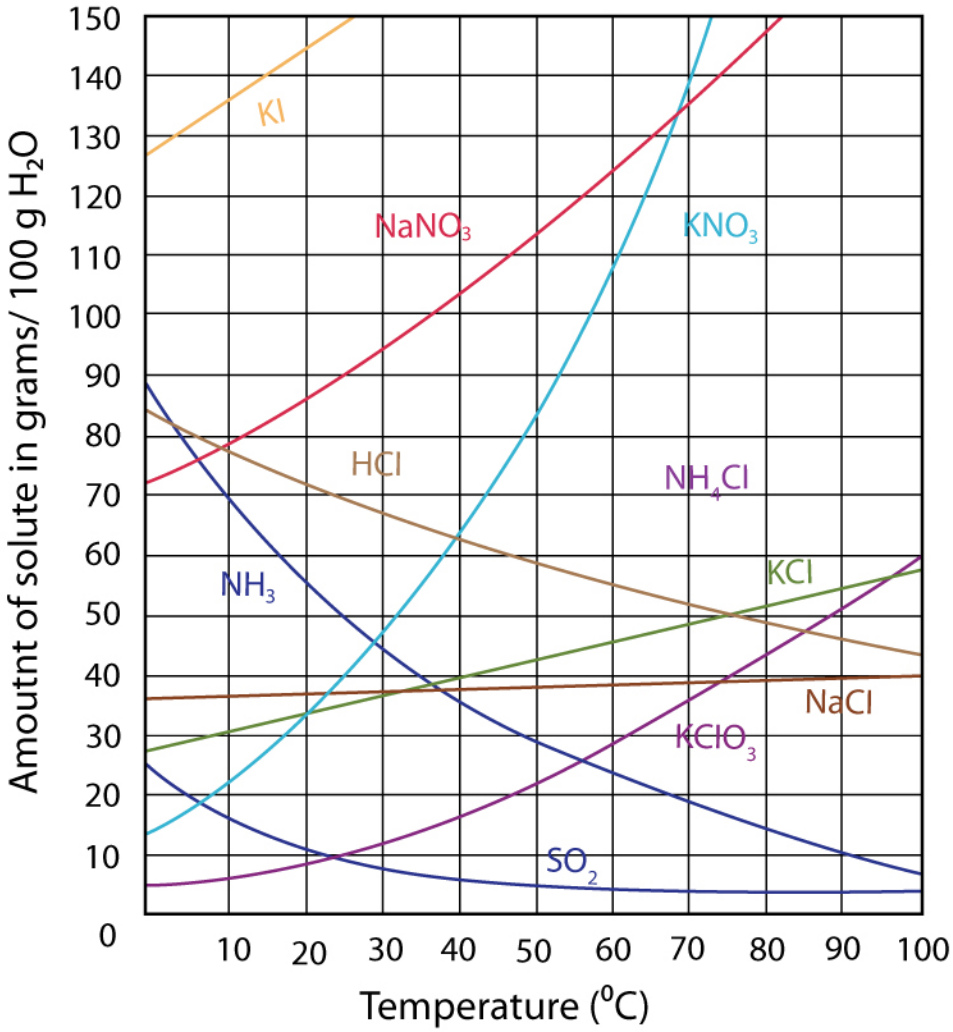
Interpreting Solubility Curve

1. Define solubility. _____

2. Using the solubility curve below, answer the given questions.



I. What is the solvent in this solubility curve? _____

II. Saturation points are given per how much of the solvent? _____

III. What is the saturation point of $NaNO_3$ at 10°C, 40°C, & 80°C?

10°C = _____ 40°C = _____ 80°C = _____

IV. How much NH_3 can you dissolve in water at 10°C, 30°C, & 90°C?

10°C = _____ 30°C = _____ 90°C = _____

V. Which salt is the least soluble in water? _____

VI. How many grams of potassium chloride can be dissolved in 200 g of water at 80 ^{0}C? _____

VII. At 40 ^{0}C, how much potassium nitrate will be dissolved in 300 g of water?_____

VIII. Which salt shows the least change in solubility from 0^0 to 100^0 C? _____

IX. Which substance shows a decrease in solubility from 0^0 to 100^0 C? _____

X. At 30 ^{0}C, 90 g of sodium nitrate is dissolved in 100 g water. Is this solution saturated, unsaturated, or supersaturated? _____

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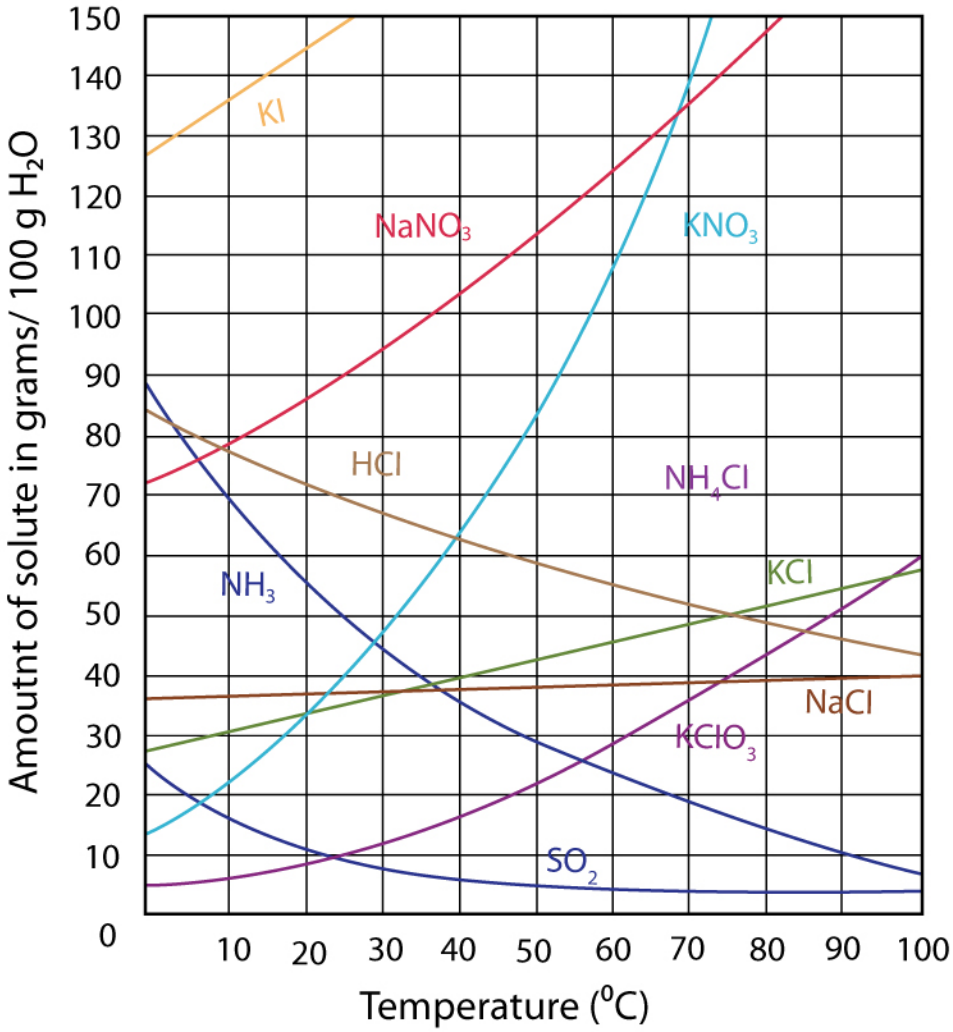
Answers

1. Define solubility. The maximum amount of a substance that can dissolve in a solvent.

2. Using the solubility curve below, answer the given questions.



I. What is the solvent in this solubility curve? water

II. Saturation points are given per how much of the solvent? 100 ml or 100 g

III. What is the saturation point of $NaNO_3$ at 10°C, 40°C, & 80°C?

10°C = 79 g 40°C = 105 g 80°C = 146 g

IV. How much NH_3 can you dissolve in water at 10°C, 30°C, & 90°C?

10°C = 70 g 30°C = 45 g 90°C = 10 g

V. Which salt is the least soluble in water? $KClO_3$

VI. How many grams of potassium chloride can be dissolved in 200 g of water at 80 ^{0}C? 102 g

VII. At 40 ^{0}C, how much potassium nitrate will be dissolved in 300 g of water? 186 g

VIII. Which salt shows the least change in solubility from 0^0 to 100^0 C? NaCl

IX. Which substance shows a decrease in solubility from 0^0 to 100^0 C? NH_3

X. At 30 ^{0}C, 90 g of sodium nitrate is dissolved in 100 g water. Is this solution saturated, unsaturated, or supersaturated? unsaturated