

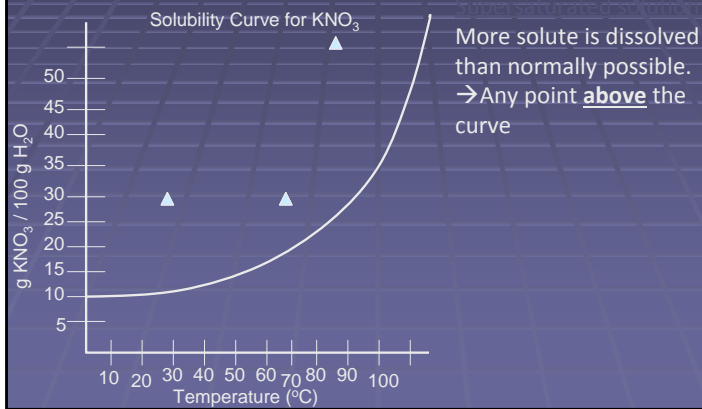
# Solutions and Kinetics

## Solubility

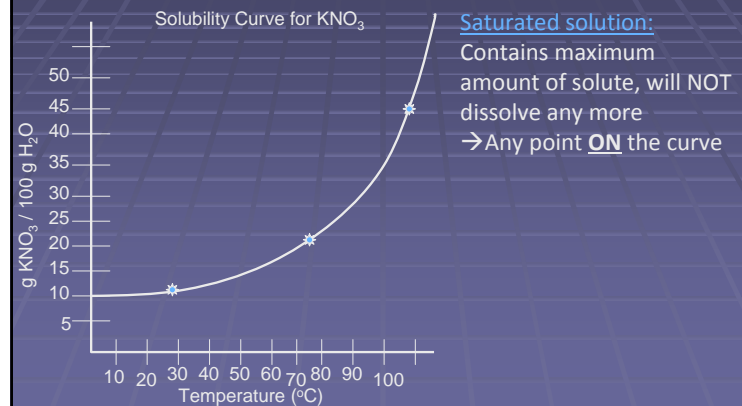
## Solubility

- **Solubility:** the amount of a substance that dissolves in a given quantity of solvent at a given temp to form a **saturated solution**
- **Units:** grams/100 grams water

## Supersaturated Solution

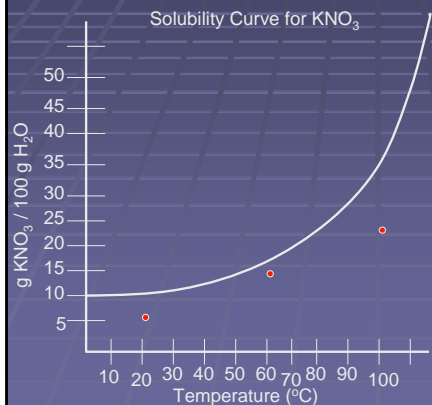


## Saturated Solution

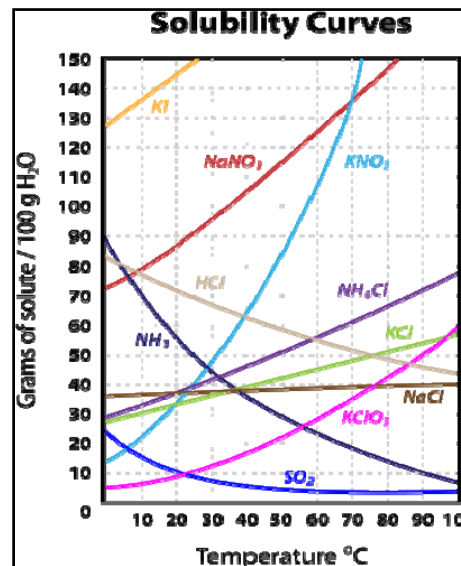




## Unsaturated Solution

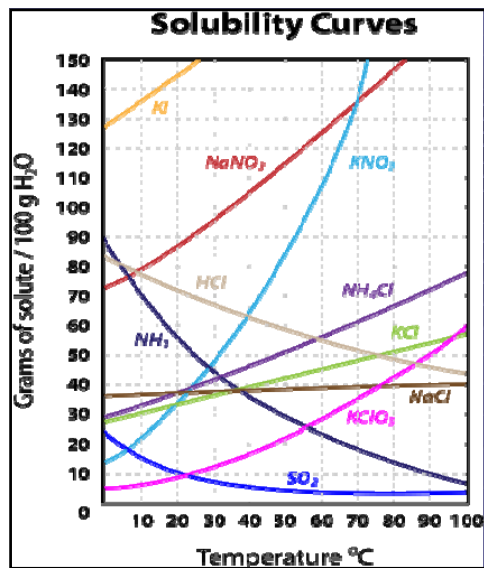


Unsaturated solution:  
will dissolve more solute if added  
→ Any point below the curve



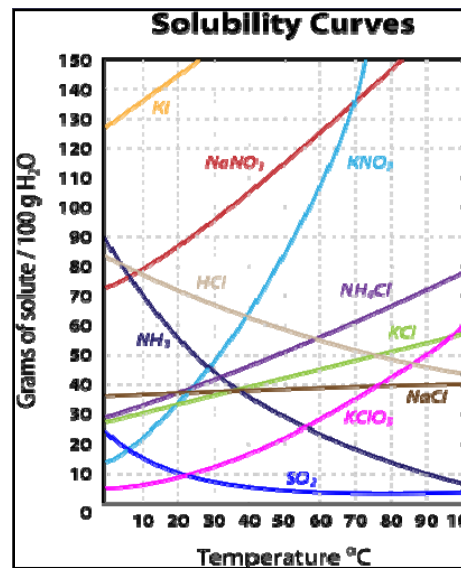
### Example #1

What is the solubility of potassium nitrate at  $40^\circ\text{C}$ ?



### Example #2

What is the temperature at which sodium nitrate's solubility is 120 g/100 mL?



### Example #3

If you add 100 g of sodium chloride to 100 mL of water at  $20^\circ\text{C}$ , what mass of solid will have settled on the bottom of the dish?