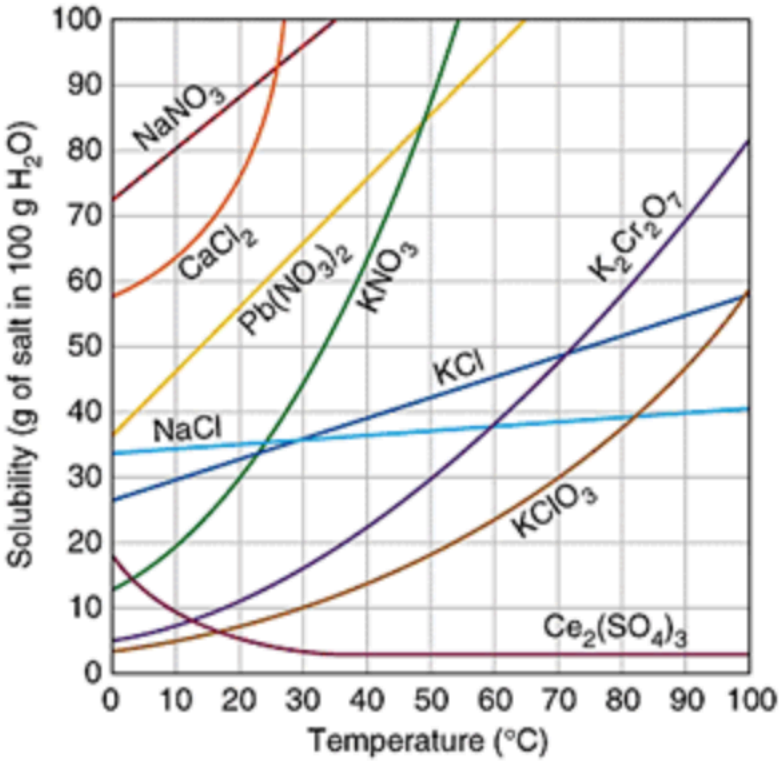
Temperature & Solubility & Solubility Curve:

- Solubility changes with temperature
- Solubility of ionic compound and polar molecular compounds generally increases with temperature because – increase temperature can dramatically increase the frequency of collision and collision become more energetic to make ions or dipole-dipole molecules more shaky and quickly dissolved.



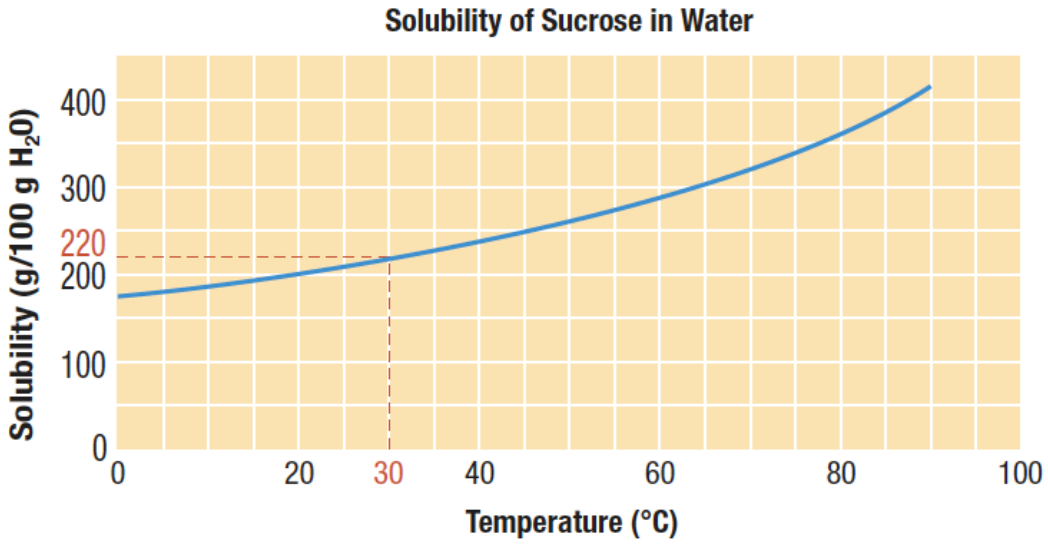
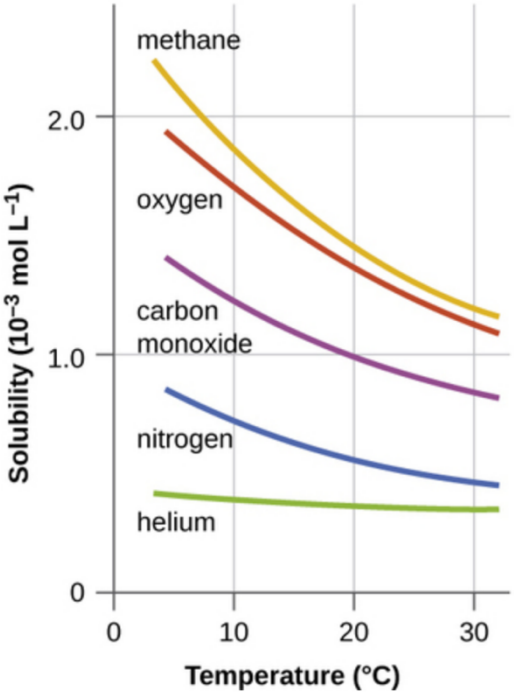


Figure 2 How does the solubility of sucrose (table sugar) change as the temperature increases?

Temperature & Solubility of gas in liquid:

- Liquid in a liquid and gas in a gas solubility are generally has little effect by temperature
- Solubility of gas in a liquid generally decreases as temperature increases. Why?



Environmental effects of increased temperature:

- Commonly, heated water is returned to lakes from industrial processes (heat pollution), this will decrease the solubility of oxygen in water to threaten marine life

Pressure & Solubility:

- Little effect on the solubility of a liquid or solid
- Solubility of a gas in a liquid is directly proportional to the pressure of that same particular gas above the liquid

Pressure, Solubility & Scuba Diving

- Scuba divers breathe Compressed air
- Water pressure increases as a diver go deeper causing more of the gases, especially nitrogen to dissolve in the diver's blood
- A diver must surface slowly to allow the dissolved nitrogen to come out of the blood gradually
- if not the painful (potentially fatal) "bends" can occur as nitrogen forms bubbles in the blood

Factors that affect the rate of dissolving:

- Rate of dissolving = how quickly a solute dissolve in a solvent (solubility = amount)
- 3 main factors to increases the rate of dissolving:
    1) Agitation or mixing/stirring: increases collisions rate between solute and solvent particles
    2) Temperature increase: particles are moving more frequently
    3) increased surface area of the solute – more solutes can be in contact with the solvent