14.1 The Thermodynamics of Phase Changes (Video)

This project was preformed to supply **Libretext Authors** with videos on General Chemistry topics which can be used to enhance their projects. Also, these videos are meant to act as a learning resource for **all General Chemistry students**.

Video Topics

The amount to heat required to cause a substance to change temperature follows the equation: q = mCdT. Where q is the heat change in J. m is the mass of the substance in grams. dT is the change in temperature (TF - TI) in oC. C is the specific heat of the substance in J/goC/. Some heat changes do not involve a temperature change (isothermal). These changes involve a change of state in a substance. Heat of reaction (qrxn): The quantity of heat exchanged between a system and its surroundings when a chemical reaction occurs. Enthalpy of reaction (dH) in J/mol. The amount of heat absorbed or given off per mole of reactant Exothermic: dH is negative, qrxn is negative, and the reaction gives off heat to the surroundings. Endothermic: dH is positive, qrxn is positive, and the reaction absorbs heat from the surrounding. Melting point: Conversion of solids into liquids: Endothermic = dHofusion Freezing point : Conversion of liquids into solids: Exothermic = -dHofusion Sublimation: Conversion of solids into gases: Endothermic = dHosub Deposition: Conversion of gases into solids: Exothermic = -dHosub Boiling point : Conversion of liquids into gases: Endothermic = dHovap Condensation: Conversion of gases into liquids: Exothermic = -dHovap

Link to Video

The Thermodynamics of Phase Changes: https://youtu.be/Uf2mAuP1BZY

Attribution

- Prof. Steven Farmer (Sonoma State University)