

Molar Enthalpy Worksheet

A change in enthalpy (ΔH) is a measurement of energy transfer in the form of heat. **Molar enthalpy** is the enthalpy change per mole of a substance involved in a transformation. Examples of transformations are phase changes, dissolving and chemical reactions.

The units are generally expressed as kJ/mole. Thus, the molar enthalpy of **fusion** for water is the energy in kilojoules required to **melt** one mole of ice at its melting point. Positive molar enthalpies ($+\Delta H$) indicate that energy is being gained by the substance, whereas negative molar enthalpies ($-\Delta H$) indicate that energy is lost.

Complete the problems below on a separate piece of paper. Show all work, and express answers with significant figures and proper labels (units and substance).

- 1) Calculate the molar enthalpy of solidification ($\Delta H_{\text{solidification}}$) when 10.00kJ of energy are lost as 30.00g of water are frozen at 0°C . Remember that this value will be negative, because energy is lost when water