

Objectives

- To calculate the molar enthalpy change for 2 r^s and use Hess's law to determine the enthalpy change for the r^{2s} .

Determination Of The Enthalpy Change of a Reaction Using Hess's Law

Obj Students can calculate the measurement uncertainties involved with the measurement of mass, volume & temperature and temp in the experiment

Theory

- Enthalpy change for a decomposition of potassium hydrogen carbonate cannot be measured directly
- The r^s (with measurable enthalpy changes) can be combined to form desired r^n with unmeasurable enthalpy change (and $\therefore$ calculate its enthalpy change)

Hess's law: The enthalpy change for a reaction is independent of the path taken.

Equipment

- 2 test tubes
- 2 molar hydrochloric acid
- Solid $KHCO_3$
- Solid Potassium Hydrogen Carbonate
- Thermometer able to read up to 50°C or more
- Polystyrene cup
- 250 cm³ or 400 cm³ beaker
- burette, clamp and stand
- stirring rod
- mass balance (2 dp)
- Spatula