

Enthalpy of perfectly ordered crystalline solid is zero at absolute zero temperature.

Kirchhoffs Equation- Effect of temperature on heat of reaction

1) At constant pressure

$$\Delta H_2 = \Delta H_1 + \Delta C_p \Delta T$$

2) At constant volume

$$\Delta U_2 = \Delta U_1 + \Delta C_v \Delta T$$

**FORMULAE FOR ADIABATIC PROCESS-**

$$P.V^\gamma = \text{constant}$$

$$\left(\frac{T_1}{T_2}\right)^\gamma = \left(\frac{P_1}{P_2}\right)^{\gamma-1}$$

$$W = nC_v(T_2 - T_1)$$

$$T.V^{\gamma-1} = \text{constant}$$

**NOTE:**

If in a numerical it is given that a process is isothermal then  $\Delta U=0$ .

Natural form of sulphur is Sulphur( $\alpha$ =rhombic)

Allotropic form of sulphur is Sulphur( $\beta$ =monoclinic)

Enthalpy of fusion of ice per mole is 6 kJ

Hydrogen has highest calorific value.

The temperature at which a real gas shows neither cooling nor heating effect in an adiabatic expansion is called inversion temperature.

Heat of vapourisation of water per mole is 10.5 kCal.

Heat of neutralisation is 68 kJ which is more than 57.23 kJ. This is due to very high hydration energy of fluoride ions.

Any enthalpy of reaction is always for 1 mole.

Enthalpy of neutralisation= exothermic

Enthalpy of ionisation= endothermic

$\Delta$  for 1 mole of gas is always  $\frac{3RT}{2}$

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