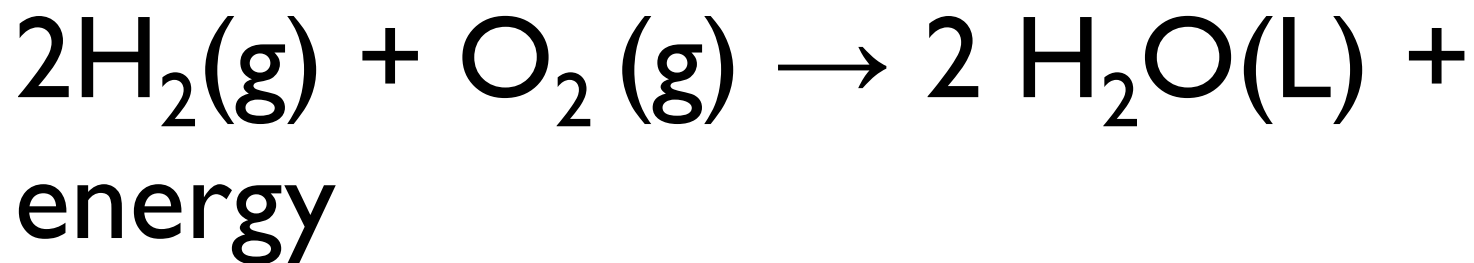




# Thermochemisrty

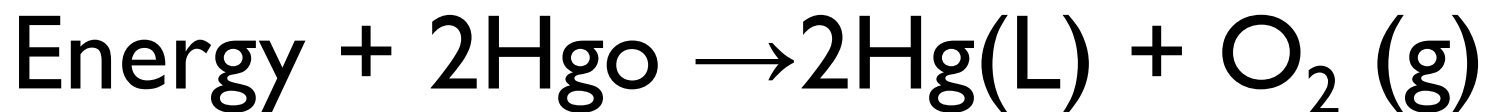
## Exothermic process:

any process that gives of heat transfer thermal energy from the system to the surroundings



## Endothermic process:

is any process in which heat has to be supplied to the system from the surrounding .



# Enthalpy (H) :

is used to quantity the heat flow in to or out of a system in a process that occurs at constant pressure .

$$\Delta H = H ( \text{ products } ) - H ( \text{ reactant } ) .$$

# Standard enthalpy of formation ( $\Delta H_f^\circ$ ) :

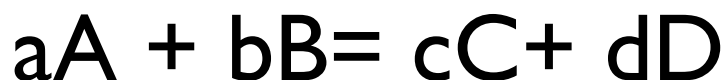
is the heat change that results when one mole of a compounds is formed from its elements at a pressure of 1 atm .

The standard enthalpy of formation of any elements in its most stable form is zero



# The standard enthalpy of reaction ( $\Delta H^\circ_{\text{re}}$ ) :

is the enthalpy of a reaction carried out at 1 atm .



$$\Delta H^\circ_{\text{re}} = \sum n \Delta H^\circ_f (\text{product}) - \sum m \Delta H^\circ_f (\text{reaction})$$

# Hess 's law

where reactants are converted to products , the change in enthalpy is the same whether the reaction takes place in one step or in a series of steps