

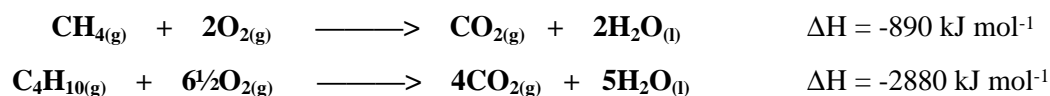
COMBUSTION OF HYDROCARBONS

Introduction Hydrocarbons burn in air or oxygen in highly exothermic reactions

Combustion can be **COMPLETE** or **INCOMPLETE**

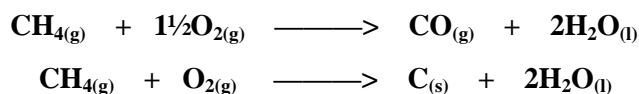
Complete

- when there is plenty of oxygen
- water and carbon dioxide are formed
- greater number of carbon atoms = more oxygen required
- greater number of carbon atoms = more energy released



Incomplete

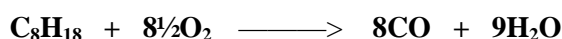
- when there is insufficient oxygen
- water and carbon monoxide or carbon are formed
- occurs when gas fires have inadequate ventilation
- carbon monoxide is poisonous
- soot can clog up pipes and lead to explosions



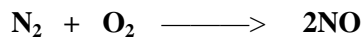
Catalytic converters

Reasons Pollution from internal combustion engines arises from...

- incomplete combustion of hydrocarbons in petrol



- high temperature reaction between nitrogen and oxygen



Pollutants

• carbon monoxide	CO	<i>poisonous</i>
• oxides of nitrogen	NOx	<i>irritating photochemical smog</i>
• unburnt hydrocarbons		<i>greenhouse gases - global warming</i>

Conditions Finely divided catalyst of rhodium, platinum and palladium

