2 DEFINITION AND CLASSIFICATION OF FUELS

A fuel can be defined as any combustible substance which during combustion gives large amount of industrially and/or domestically useful heat.

Heat evolved by burning of fuels is used mainly for heating purposes, it can also perform other very important functions like coal, in locomotive engines ; and petrol, in internal combustion engines, are used for doing mechanical work. Coal is also used as a reducing agent in blast furnace.

Classification. Fuels can be classified :

(A) *On the basis of their occurrence* :

(1) *Natural or primary fuels.* Fuels which are found in nature as such are called natural fuels e.g., wood, coal, peat, petroleum and natural gas.

(2) *Artificial or secondary fuels.* Fuels which are prepared artificially generally from primary fuels are called artificial fuels. Examples of artificial fuels are coke, kerosene oil, petrol, coal gas etc.

(B) *On the Basis of physical state of aggregation* :

On this basis, there are three types of fuels *viz.* solid, liquid and gaseous. The important examples of above categories (A) and (B) of fuels are tabulated below :

Table 1. *Classifications of Chemical Fuels*

Type of Fuel	Natural or Primary	Artificial or Secondary
Solid	Wood, peat, lignite, Dung, bituminous coal and anthracite coal	Charcoal, coke etc.
Liquid	Crude oil	Petrol, diesel and various other fractions of petroleum
Gaseous	Natural gas	Coal gas, oil gas, Bio gas, water gas etc.