— University of Mosul —
College of Petroleum & Mining Engineering

Petroleum Chemistry

Lecture 3

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B- Non hydrocarbons components:

The non hydrocarbon components are caused:

Corrosion

Break clown in the refinery operation.

The non hydrocarbon components are divided to:

I- Sulphur components:

It is the most important one that increase as the density increased . The types of sulphur components in the petroleum are :-

i- Hydrogen Sulphide H- S- H (or H_2S).

ii- Mercaptance: H- S- R , where R is Alkyl (H- S- CH_3).

iii- Sulphides:

Aliphatic sulphide.

R- S- R Cyclo sulphide.

Disadvantages of Sulphur components:

l- Corrosion the metal parts of the engine .

2- Reduce O.N (octane number).

3- Reduce oxidation resistance.

4- Solids deposition.

II- Oxygen components:

These compounds increase (b.p. = boiling point) with increasing the of the fraction. The types of oxygen components in the petroleum are:

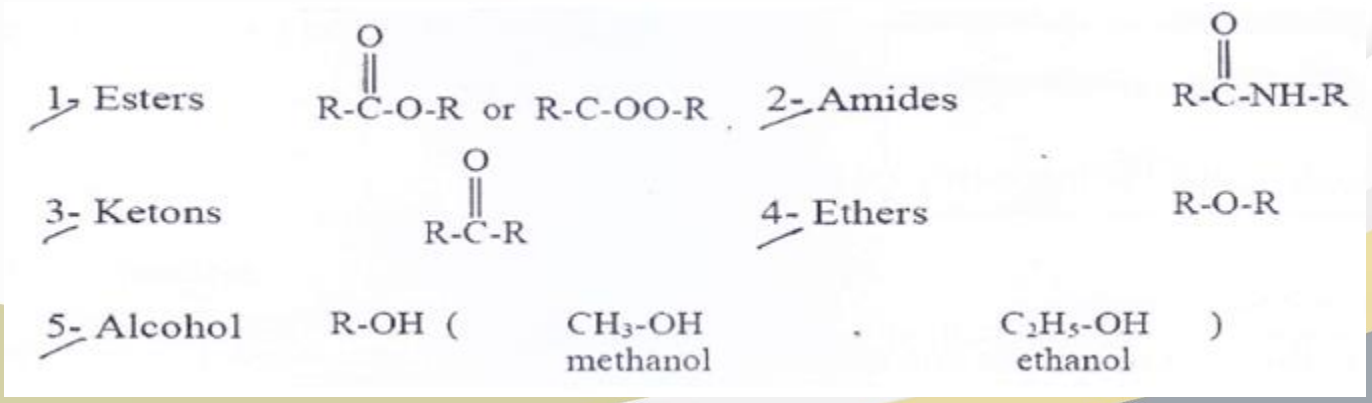
i- Acidic oxygen components:

1- Normal organic acid .

2- Branch organic acid .

3- Aromatic acid .

ii- Non acidic oxygen components.



III- Nitrogen components:

More asphaltic crudes will contain N_2 compounds. They usually tolerate up to 0.25 wt% .

Disadvantages:

1- Can poison catalysts.

2- Increased carbon residue .

3- Decreased API.

Types of nitrogen components in the petroleum: