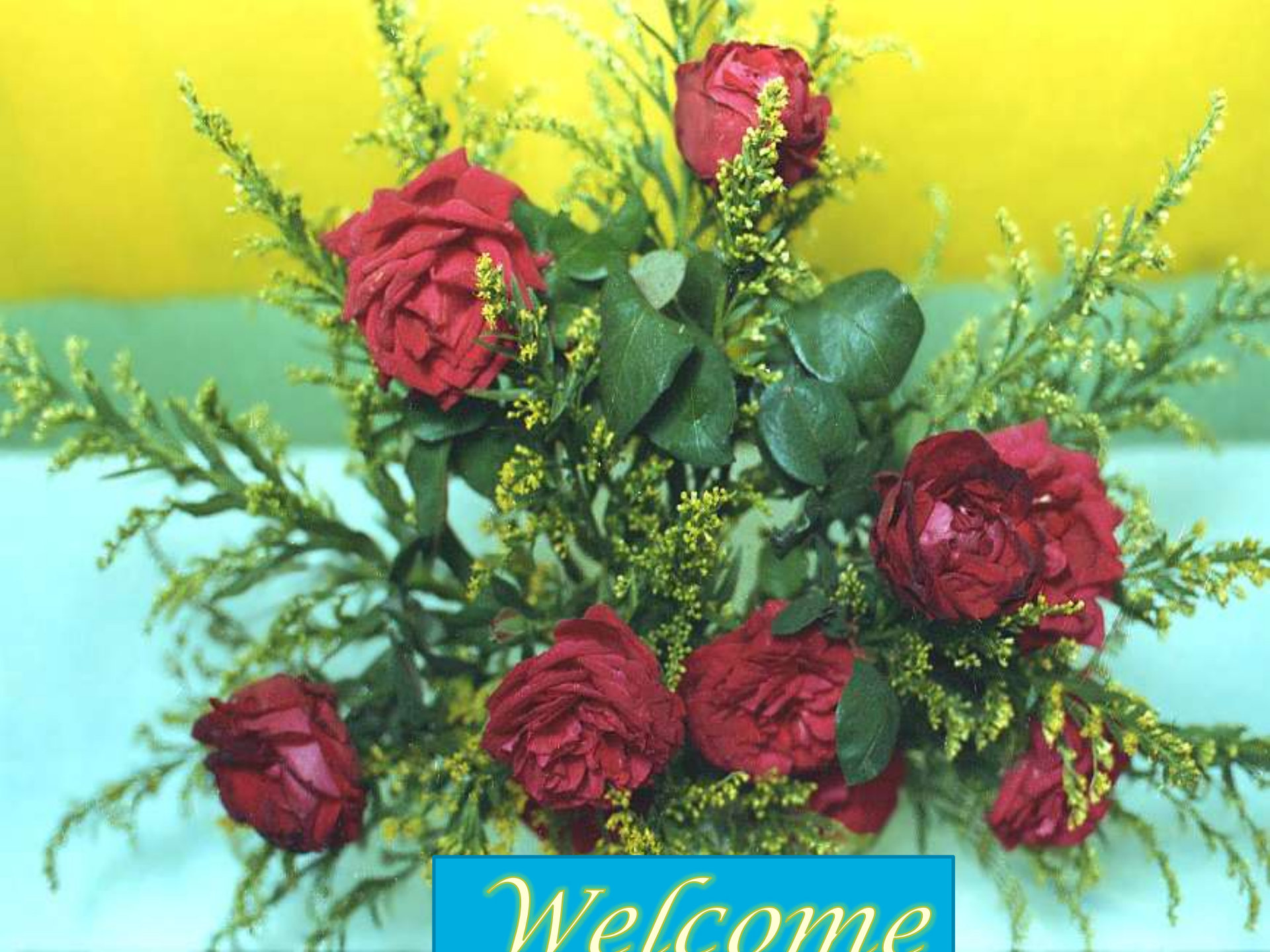

Welcome

Reagents

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Contents of Unit

- **Reagents:**
- Classification of reagents according to their action as, Acids, Bases, Salts, oxidizing, reducing, complexing, chelating and precipitating reagents with suitable examples.

Reagents

- Reagent is a substance or compound that is added to a system in order to bring about a chemical reaction or is added to check whether a reaction occurs or not.

- In Organic Chemistry, compounds such as Collins reagent, Fentons reagent, Grignards reagent are frequently used. There are also Analytical reagents which are used ot cnfirm the presence of another substances such as Fehlings reagent, Millons reagent, Tollens reagent.

Classification of Reagents

Reagents are of following types:

1) Acidic reagents
2) Basic reagents
3) Precipitation reagents
4) Oxidizing reagents
5) Reducaing reagents
6) Complexometric reagents

1. Acidic reagents

Reagents such as HCl, H_2SO_4, are examples of acidic reagents. These are used in different qualitative and quantitative analysis.

2. Basic reagents

Reagents such as NaOH, KOH, $Ba(OH)_2$, $Ca(OH)_2$, NH_3OH are basic reagents. These are used in various estimations, to adjust p*H* of solutioms. Also in volumetric and gravimetric analysis.

3.Precipitation reagents

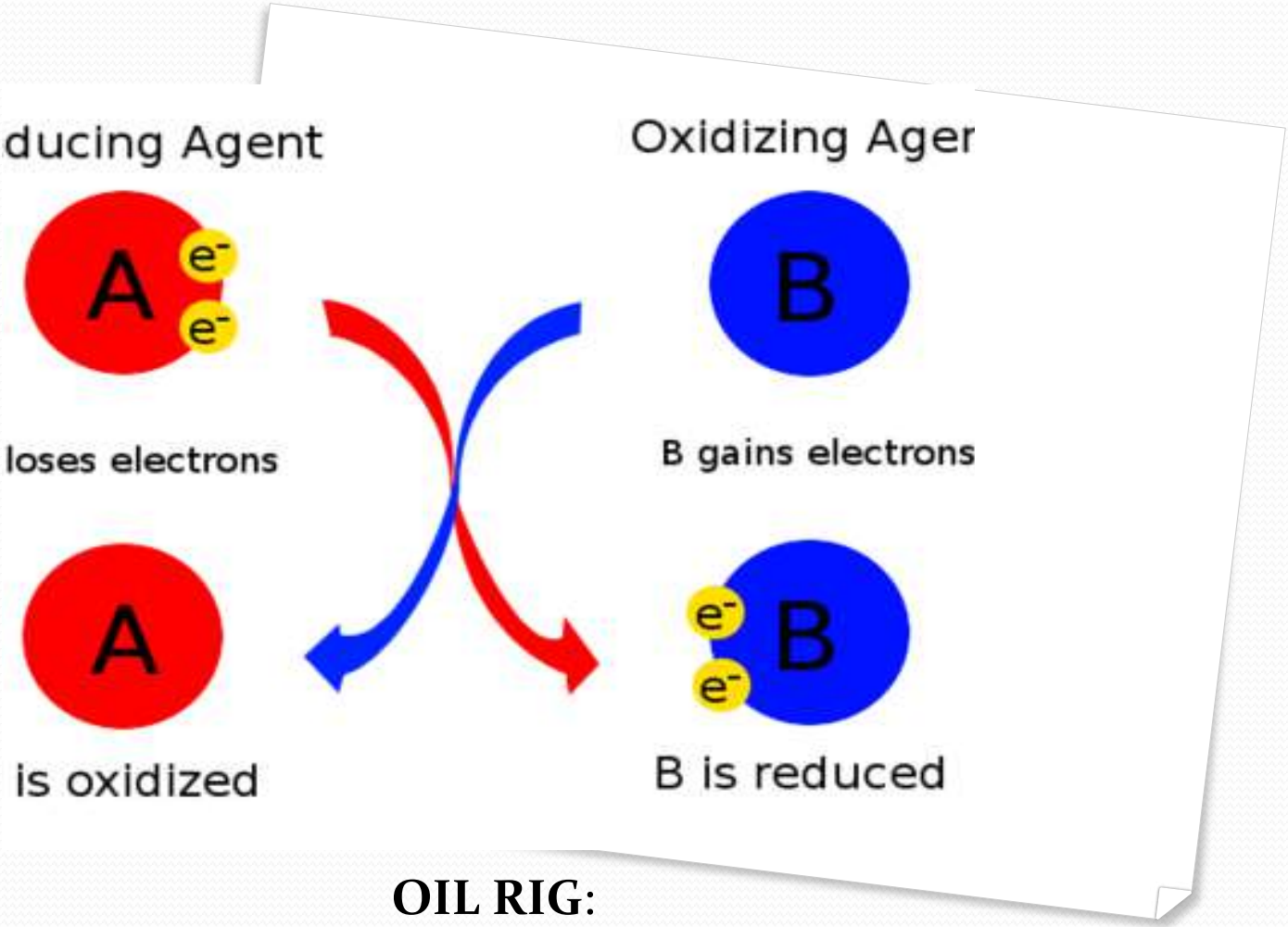
Precipitation is the chemical reaction which depends upon ionic product and soluility product. To get precipitation, ionic product should be greater than solubility product. Precipitating reagents my be organic/inorganic reagents. E.g. DMG, H_2SO_4, 1.10 phenantholien, etc.

4.Oxidizing reagents & 5.Reducaing reagents

Oxidizing and reducing agents are key terms used in describing the reactants in *redox reactions* that transfer electrons between reactants to form products.

Oxidizing agents or oxidant gains electrons and is reduced in a chemical reaction. Those are also known as electron acceptor. e.g. halogens, KNO_3, HNO_3, $KMnO_4$, etc.

While Reducing agents or reductant losses electrons and is oxidized in a chemical reaction. Those are also known as electron donor. e.g. formic acid, sulfite compounds. e.g. alkali earth metals, Fe, Zn, H_2 etc.



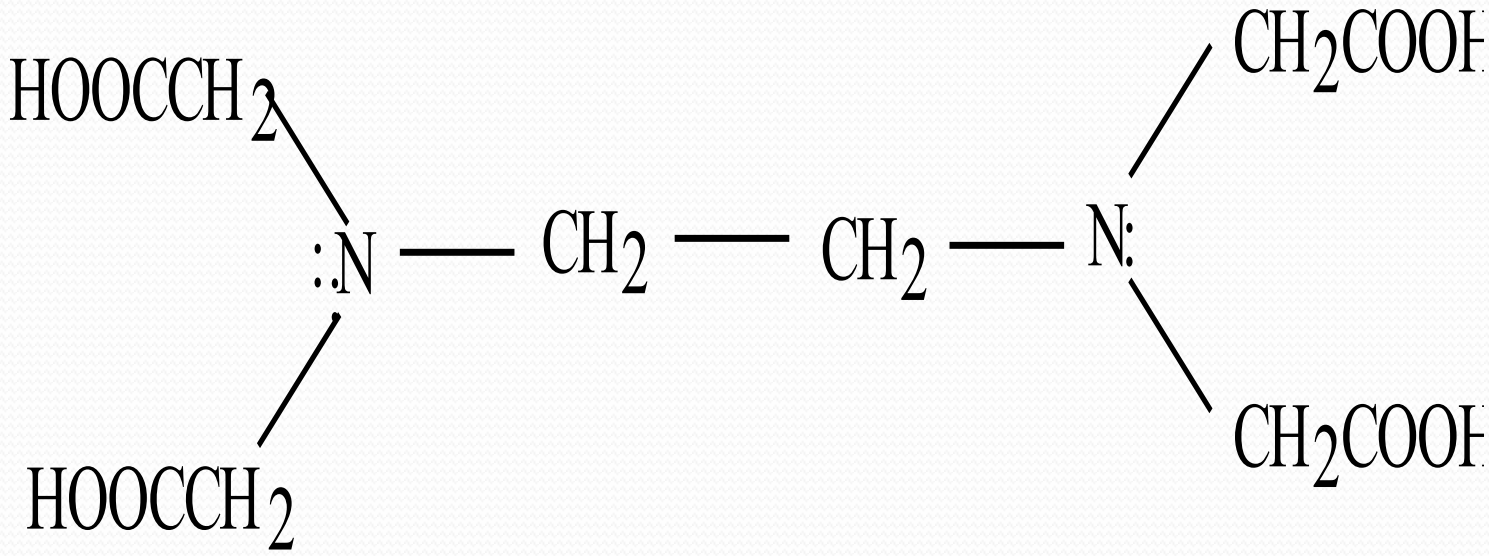
OIL RIG:
Oxidation **I**s **L**oss and **R**eduction **I**s **G**ain of electrons

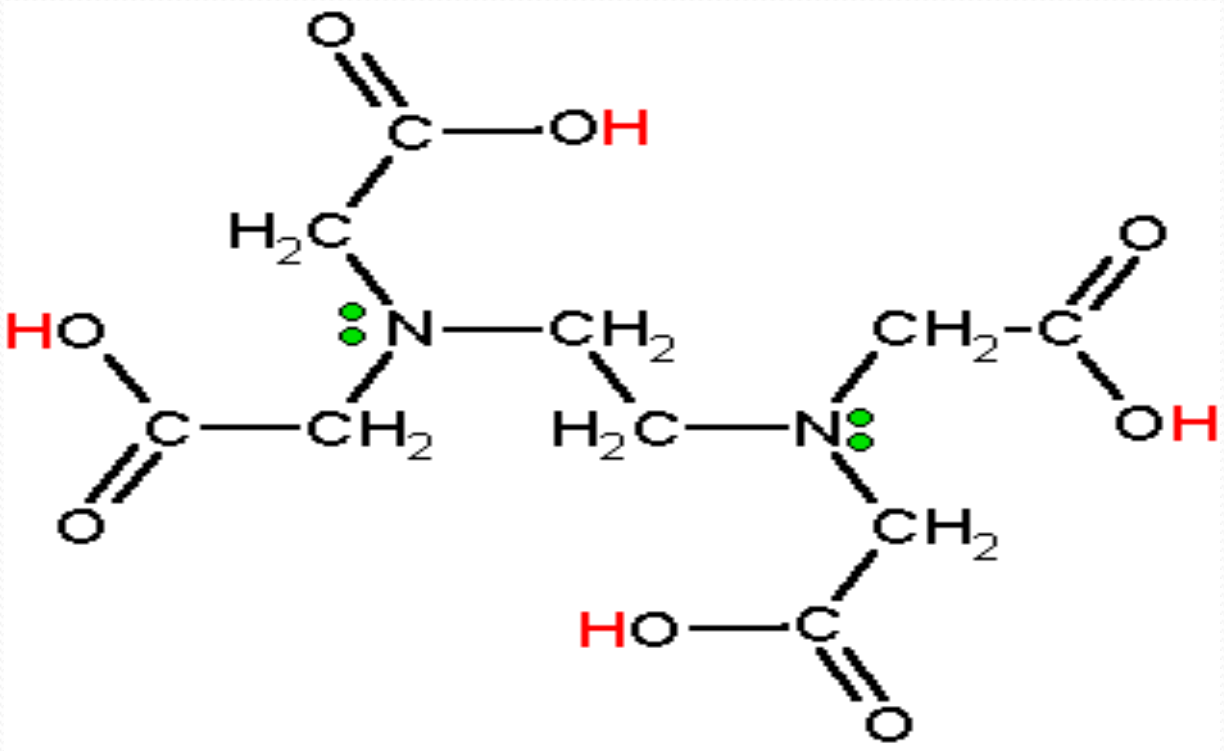
6. Complexometric reagents

- These reagents are used for the detection and estimation of metal ions present in solution.

- These are of two types: Unidentate and polydentate . The ligand which has only one group capable of forming a bond with the central atom is known as unidentate ligands. e.g. X^- halogens (Cl^-, Br^- , I^-), CN^-

- A ligand which has two or more groups capable of forming bonds with the central atom are known as polydentate ligands.
- EDTA Ethylene diamine tetra acetic acid (polydentate ligand)




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Session is open for discussion


Thank You