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Qualitative Analysis of Organic Compounds

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Qualitative Analysis of organic compounds helps identify and characterize unknown organic compounds.

Many organic cpd.s are usually a component of a mixture of several cpd.s that might be considered as impurities.

These impurities may be :

1- Side products resulted during the preparation of the organic compound, or ,

2- May be decomposition products of the original pure organic cpd. & this occurs during storage under unsuitable conditions .

Some cpd.s may be obtained & stored pure because of their high degree of stability.

In most cases a good separation & purification should precede qualitative analysis of organic cpd.s so that identification will be successful.

The Qualitative Analysis of any organic cpd. should follow these steps:

1. Physical properties studying.

- State of the organic cpd. (*solid, liquid, gas*)
- Determination of the m.p. or B.p..
- Color & odor of the compound.
- Determination of the solubility group (solubility classification according to the general families).

2. Chemical properties studying:

- Effect of the cpd. or its solution on litmus paper.
- Determination of elements in the organic compound (**nitrogen, sulfur or halogens**).
- Detection of the organic groups, i.e., group classification to get more specific families.
- Specific classification tests.
- Preparation of derivatives.

Many compounds have similar physical properties and give similar results in qualitative tests.

However, an unknown can undergo reaction to form another cpd. called a derivative . The melting point of the purified derivative allows identification of the unknown.