Subilimation

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Experimental Theory:

sublimation: The process of a substance chaging from asolid state to gaseous state with out passing through the liquid state.

Sublimation is preferred for purifying solid organic compounds when:

1. The impurities are non-volatile.
2. The desired substance has a high vapor pressure close to its melting point.
3. The quantity is small,with minimal mechanical loss.

Note:

If the impurities have a vapor pressure close to that of the compound to be purified, then the separation will be very limited. In tgis case,it is preferable to use the recrystallization method to purify the compound.

The sublimation process in volves: evaporating the desired compound from the impure solid sample by heating it to a temperature below The melting point ,then condesing the escaping vapor on the surface to return of the.

Examples of compounds That Can sublimate:

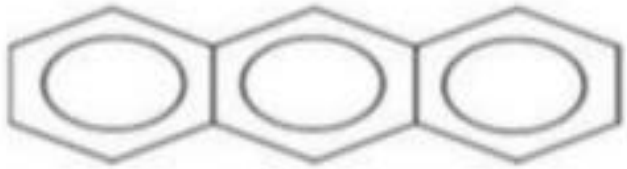
-Naphthalene

-Anthracene

-Benzoic acid(organic compounds)

-Iodine(inorganic compound)

Examples of compounds that can sublimate: naphthalene, anthracene, benzoic acid (organic compounds), and iodine (inorganic compound).



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Procedure:

1.Weigh 0.5 grams of the impure organic substance(benzoic acid) into abeaker.

2. Place the beaker on a wire gauze supported by a tripodstand Stand.

3.Put some cold water in a round-bottom flask and place it over the mouth of the beaker.

4.Begin heating very slowly, sublimation of the substance will be observed.

5. After the process is complete, remove the flame and collect the purified substance from the outer surface of the flask by scraping it onto a pre-weighed filter paper, than calculate the percentage yield

Alternative Method:

Another method of sublimation can be used by placing the substance in a watch glass and covering it with an inverted glass funnel resting on its edge. The watch glass is then heated, and after completion ,the flame is removed.The purified substance is collected from the inner surface of the funnel by scraping it onto paper



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