

Inverzni plinski kromatograf



Lokacija: Katedra za farmacevtsko tehnologijo

Inverzna plinska kromatografija (IGC) je prirejena plinska kromatografija za analizo trdnih površin. Vzorec (prašek) se nahaja v kromatografski koloni (stacionarna faza), ki jo spiramo z inertnim plinom (mobilna faza) kot sta dušik ali helij. V tok inertnega plina injiciramo parno fazo organskih tekočin z znanimi lastnostmi, jo vodimo skozi kolono in detektiramo na izhodu iz nje. Na ta način ovrednotimo interakcije med parami organskih tekočin in trdnim vzorcem. Nepolarne, kisle in bazične lastnosti trdne vzorca izračunamo na osnovi izmerjenih retencijskih časov injiciranih par.

Področja aplikacije

1. Razlikovanje vzorcev različnih izvorov, ki bi se naj v tehnoloških procesih enako obnašale, vendar se ne (prav tako za zaznavanje variabilnosti lastnosti med serijami).
2. Kvantifikacija razlike med trdnimi površinami, ki so posledica uporabe različnih tehnoloških procesov.
3. Napovedovanje interekcij med sestavinami pri tehnoloških procesih in v končnem proizvodu (mešanje praškov, granuliranje, tabletiranje).

Inverse Gas Chromatograph



Location: Department of Pharmaceutical Technology

Inverse gas chromatography (IGC) is an adaptation of conventional gas chromatography that is used for characterization of solid surfaces. The sample (powder) to be investigated is immobilized within a chromatographic column (the stationary phase) which is flushed through with an inert gas (the mobile phase) such as nitrogen or helium. Organic probe molecules (vapor) of known properties are injected into the gas flow and pass through the column, being detected as they elute from the column. This allows determination of the interaction between the organic probe molecules and the sample's solid surface. Nonpolar, acid and base properties of solid surface are calculated from retention times of injected vapors.

Application areas

- Differentiation between samples from various suppliers that should behave the same, but do not (also batch to batch properties variability).
- Quantification of solid surface differences as a result of a technological processes.
- Prediction of interactions between ingredients during the technological processes and the final product (powder mixing, granulation, tableting).