

Note on High Performance Thin Layer Chromatography

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DESCRIPTION

Chromatography is a scientific method used to separate various components in a mixture to identify the major compounds in the mixture. High Performance Thin Layer Chromatography (HPTLC) provides higher resolution and component separation than regular TLC. It uses a chromatographic stationary phase with excellent separation performance and uses state-of-the-art equipment at every step of the process. This includes accurate sample applications, standardized and reproducible chromatogram development, and software control evaluation. HPTLC shows at a glance the similarities and differences between the sample and the reference record of proceedings.

METHODOLOGY

Procedure

Apply a very small sample of the mixture to a solid porous layer (stationary phase) and passing a liquid solvent (mobile phase) through this stationary phase. The components of the sample pass through the stationary phase at different speeds, depending on how strongly they adhere to the moving liquid phase or if they want to move. Thin Layer Chromatography (TLC) uses a layer of silica cast on a glass plate as the stationary phase. The mobile phase is placed on the bottom of the glass container, in which the glass plate on which the test object is placed is placed.

When the mobile phase penetrates the glass plate upwards, the compound attaches to the stationary phase at various rates, leading to component separation. Equivalent samples of more advanced chromatography techniques (LCMS, HPLC, GCMS, etc.) than cause column clogging. Compared to other chromatographic techniques, the mobile phase of HPTLC uses significantly less solvent, which makes it environmentally friendly and inexpensive. Due to the non-destructive nature of the HPTLC, the analyte elutes after separation and can be used in existing laboratory equipment. B. Mass spectrometry, identified.

Equipment components

- Sample Applicator Apply the sample to the stationary phase. D.NS. TLC / HP TLC plate

- The components of the developing chamber are separated
- Derivatization Kit and Plate Heater Derivatization: Chemically spray the plate to detect invisible compounds under white / UV light
- Documentation system and TLC scanner Visualization / evaluation of TLC / HPTLC plate
- Tape cutting device that can be connected to an existing mass spectrometer MS analysis (optional): The band can be cut from the TLC / HPTLC plate and distinguished from the existing one. Can a mass spectrometer.
- Qualitative and quantitative analysis of software results for device operation and analysis.

USES

High Performance Thin Layer Chromatography (HPTLC) provides higher resolution and component separation than regular TLC. Chromatographic stationary phase with excellent separation performance keeps the equipment up to date at every step of the process. This includes accurate sample applications, standardized and reproducible chromatogram development, and software-controlled evaluation. HPTLC shows at a glance the similarities and differences between the sample and the reference.

CONCLUSION

HPTLC can be used for analysis of raw materials and finished products, determination of purity (mixture), and investigation of stability (shelf life). It can also be used for process development. Samples can be analysed at various stages of the process. Compounds can be accurately quantified using reference standards. HPTLC is a faster and more economical method than other isolation methods and typically takes less than an hour to analyse many samples in parallel. HPTLC plate is degradable, allowing analysis of samples containing biologically complex compounds (high matrix content).