Determination of Drug-Excipient and Drug-Solvent Interaction by Inverse Gas Chromatography

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Drug-excipient interactions are highly relevant for dry inhalation systems since they allow for a prediction of drug-carrier mixture stability as well as release properties. In a similar manner drug-solvent interactions are important for an understanding of dissolution processes, wet-granulation or suspension stability.

These interactions are related to the adhesion between drug and excipients or solvents respectively. Adhesion parameters are directly available using Inverse Gas Chromatography if the surface energies and acid-base numbers for the individual compounds are measured.

Examples will be presented where the adhesion properties were correlated with the stability of dry powder mixtures or with drug-binder interactions in wet-granulation.