

## Investigation of surface porosity measurements and compaction pressure as means to ensure consistent contact angle determinations - DTU Orbit (08/11/2017)

### Investigation of surface porosity measurements and compaction pressure as means to ensure consistent contact angle determinations

Compounds wettability is critical for a number of central processes including disintegration, dispersion, solubilisation and dissolution. It is therefore an important optimisation parameter both in drug discovery but also as guidance for formulation selection and optimisation. Wettability for a compound is determined by its contact angle to a liquid, which in the present study was measured using the sessile drop method applied to a disc compact of the compound. Precise determination of the contact angle is important should it be used to either rank compounds or selected excipients to e.g. increase the wetting from a solid dosage form. Since surface roughness of the compact has been suggested to influence the measurement this study investigated if the surface quality, in terms of surface porosity, had an influence on the measured contact angle. A correlation to surface porosity was observed, however for six out of seven compounds similar results were obtained by applying a standard pressure (866MPa) to the discs in their preparation. The data presented in the present work therefore suggest that a constant high pressure should be sufficient for most compounds when determining the contact angle. Only for special cases where compounds have poor compressibility would there be a need for a surface-quality-control step before the contact angle determination.

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