and HPLC quantitation. Kinetic solubility assays are performed in high throughput with shorter incubation times and high throughput analyses using plate readers. The most frequently used of these are the nephelometric assay and direct UV assay, which begin by adding a small volume of DMSO stock solution of each test compound to buffer. In nephelometry, this solution is serially diluted across a microtiter plate and undissolved particles are detected via light scattering. In direct UV, undissolved particles are separated by filtration, after which the dissolved material is quantitated using UV absorption. Equilibrium solubility is useful for preformulation. Kinetic solubility is useful for rapid compound assessment, guiding optimization via structure modification, and diagnosing bioassays. It is often useful to customize solubility experiments using conditions that answer specific research questions of drug discovery teams, such as compound selection and vehicle development for pharmacology and PK studies.

Knopp, M. M. et al. (2016). "Recent advances and potential applications of modulated differential scanning calorimetry (mDSC) in drug development." *Eur J Pharm Sci* 87:164–173.

Differential scanning calorimetry (DSC) is frequently the thermal analysis technique of choice within preformulation and formulation sciences because of its ability to provide detailed information about both the physical and energetic properties of a substance and/or formulation. However, conventional DSC has shortcomings with respect to weak transitions and overlapping events, which could be solved by the use of the more sophisticated modulated DSC (mDSC). mDSC has multiple potential applications within the pharmaceutical field and the present review provides an up-to-date overview of these applications. It is aimed to serve as a broad introduction to newcomers, and also as a valuable reference for those already practicing in the field. Complex mDSC was introduced more than two decades ago and has been an important tool for the quantification of amorphous materials and development of freeze-dried formulations. However, as discussed in the present review, a number of other potential applications could also be relevant for the pharmaceutical scientist.

Lagrange, F. (2010). "Current perspectives on the repackaging and stability of solid oral doses." *Ann Pharm Fr* 68(6):332–358.

Which are the guidelines and scientific aspects for repackaged oral solid medications in France in 2010 whereas it develops? The transient or definitive displacement of the solid oral form from the original atmosphere to enter a repackaging process, sometimes automated, is likely to play a primary role in the controversy. However, the solid oral dose is to be repackaged in materials with defined quality. Considering these data, a review of the literature for determination of conditions for repackaged drug stability according to different international guidelines is presented in this paper. Attention is also paid to the defined conditions ensuring the conservation and handling of these drugs throughout the repackaging process. However, there is lack of scientific published stability data. Nevertheless, recent alternatives may be proposed to overcome the complexity of studying stability in such conditions. Then, the comparison of the moisture barrier properties of the respective package, a galenic model of hygroscopic molecules, or light sensitive molecules or stability data obtained during the industrial preformulation phase could also secure the list of drugs to be reconditioned. Similarly, a wise precaution will be to get stability data for the industrial blisters and