

## **THE STUDY OF IBUPROFEN BY DSC AND TGA**

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One of the major concerns in designing new formulation is the question whether the active ingredient will be compatible with any excipient or packaging component. Incompatibilities will effect the efficiency of the drug or might even become dangerous for the patient. The incompatibilities can result in eutectic formations, acid/base interactions, complex formations or potency losses. These processes can be very fast or slow (such as the effect on the shell lifetime in tropic climates). Thermo analytical techniques such as differential scanning calorimetry (DSC) or thermogravimetry (TGA) can accelerate the evaluation process of the active ingredient with any excipient so that incompatibilities can be identified much faster and more accurate.

Ibuprofen (á-methyl-4-(2-methylpropyl)benzene-acetic acid) is widely used as analgetica. It is a colorless crystalline solid. This application refers to the study of the purity and thermal stability of this active ingredient. Furthermore several excipients such as avicel, talcum, stearic acid, kollidon, pharmacoat and primojel were run for the compatibility study between the active and the inactive materials.

This study shows that the stearic acid shows a strong interaction with the ibuprofen. Kollidon and primojel effect the stability only on a long-term base. The other analysed excipients did not show any effect on the drug.