Characterization of a polymorphous powder by DSC

INTRODUCTION

The characterization of polymorphism in drugs is an important point for the pharmaceutical industry. This importance is justified by the fact that the properties of a drug depends a lot on its polymorphic forms. One of the important benefit of DSC is its ability to qualify polymorphs and to determine their stabilities.

EXPERIMENT

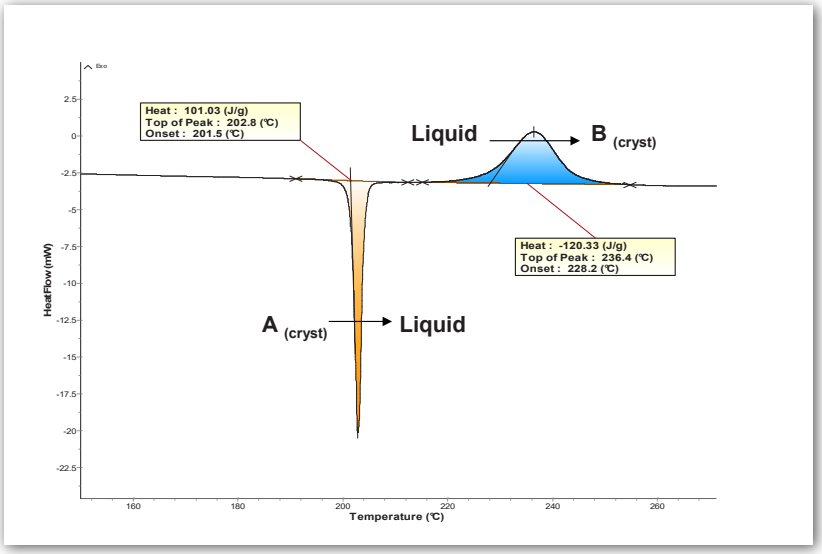
Samples:
pharmaceutical powder sample made of by a mixture of polymorphs A and B.

Experimental conditions:

- Sample mass: about 7 mg of powder
- Type of crucible: 100µl aluminum crucible closed with a perforated lid.

Experimental procedure:

- Heating from room temperature to 250°C at 3°C/min.



RESULTS AND CONCLUSION

- A sharp endothermic peak can be observed above 200°C. It corresponds to the melting of polymorph A.
- Then the crystallization of the liquid phase into form B produces an exothermic effect at higher temperature.
- The melting peak of polymorph B is not detected in the studied range of temperature.
- Polymorph B is more stable than the form A.

INSTRUMENT

SETLINE DSC / DSC+

-170 to 700°C

- EASY TO USE WITH ROBUST SENSOR TECHNOLOGY
  ensuring quality, consistent and reliable data
- AVAILABLE WITH HIGH PRESSURE CRUCIBLES
  up to 500 bar at 600°C
- REASONABLY PRICED INSTRUMENT & SENSOR
  for easy, cost effective replacement
- LOWER COST OF OWNERSHIP
  through simplified maintenance and a Replacement Parts Guarantee
- TECHNICAL & APPLICATION SUPPORT
  for fast expert help with any questions
- CALISTO 2.0 EXCLUSIVE SOFTWARE
  for intuitive and easy data handling