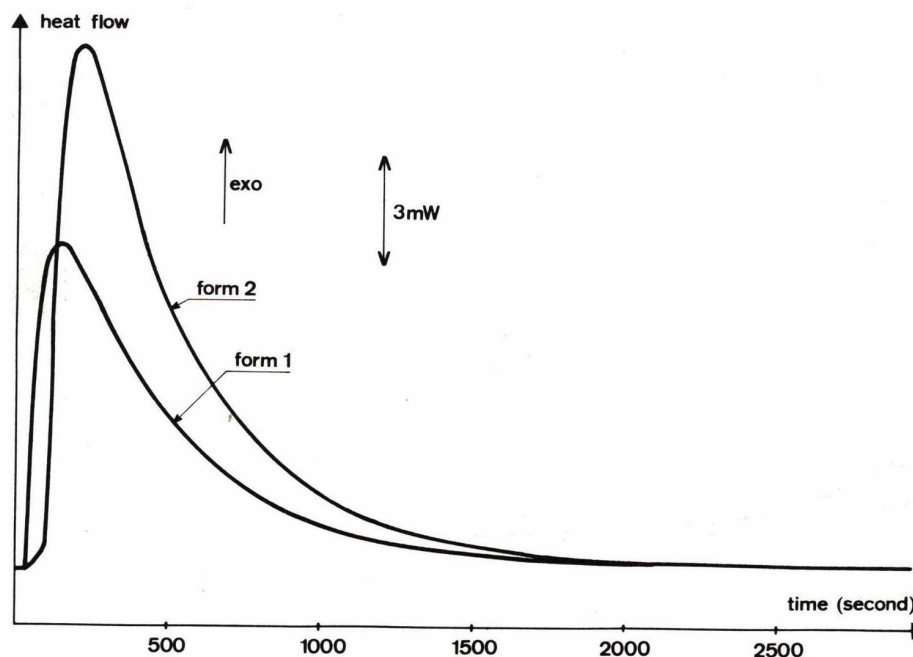


Polymorphism detection : Active drugs (forms 1 and 2) in soda

Introduction

The determination of drug polymorphism is an important problem for the pharmaceutical research. Depending on the polymorphic form present in a drug, its characteristics can be very different. The detection of the polymorphic forms is not easy. DSC has been used with some success, but cannot be used for all products (thermal stability limitation). As the polymorphic forms have different behaviors especially dissolution properties, the calorimetric test of dissolution is used to investigate their differentiation.



Experimental

Samples :

-active drugs (two polymorphic forms)
100 mg

- NaOH N : 3 ml

Vessel : reversal mixing vessel

Heating mode : isothermal 30°C

Instrument

C80

Ambient to 300°C



Results

The dissolution of two polymorphic forms of an active drug gives an exothermic effect. However, a large difference is observed in the heats of dissolution between the two forms :

	1st test	2nd test
Form 1	11.81 cal.g ⁻¹	11.88 cal.g ⁻¹
Form 2	17.55 cal.g ⁻¹	17.59 cal.g ⁻¹

The results are significantly different with an excellent reproducibility of the measurements. It illustrates how the calorimetric test of dissolution can be used to differentiate the polymorphic forms of drugs.