

Introduction

Thermal analysis may be defined as the measurement of the physical and chemical properties of materials as a function of temperature or time. The different thermal properties obtained from DSC analysis include the glass transition temperature and solid-state reactions including nucleation temperatures, crystallisation temperatures and endothermic or melting reactions.



Technical Specification

Perkin Elmer Pyris 1 DSC

- An Intracooler allowing temperature range of -60°C to $+600^{\circ}\text{C}$
- An air shield to prevent moist air from settling into and maintaining the sample holder region dry and frost-free
- Samples as small as 1 mg can be analysed at rates of up to 300°C per minute.
- Specific heat capacity measurement
- Power compensating calorimetry



TECHNICAL SPECIFICATIONS

Setaram Labsys

- Temperature scanning rate 0.01 to 50°C/min
- Ambient to 1400°C
- Heat flux calorimetry
- Combined TGA/DSC

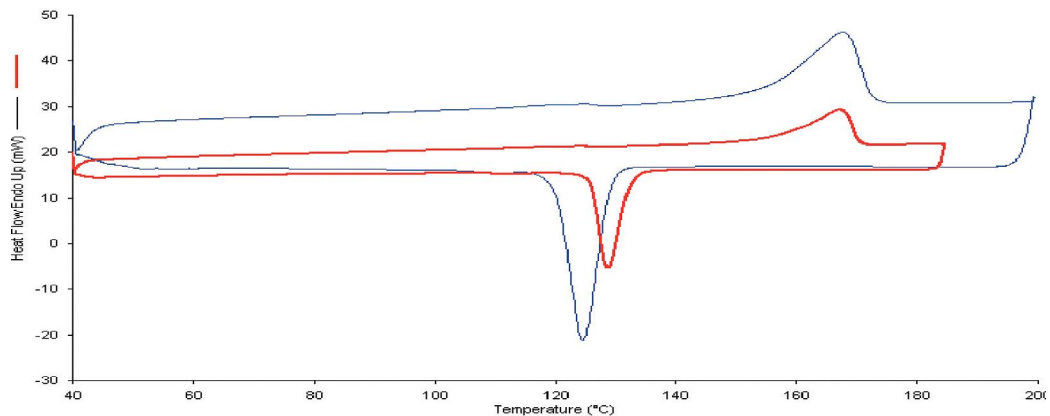
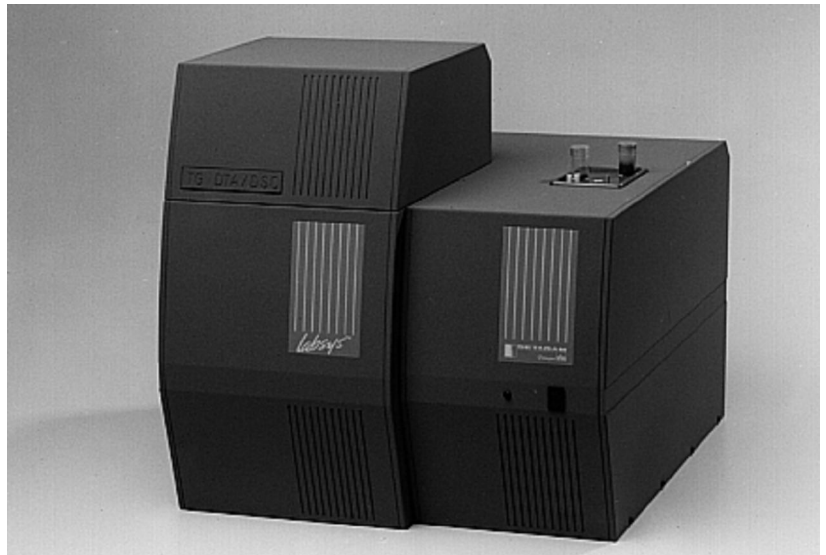


Figure 1. A Pyris 1 DSC study of polyethylene (left). The blue curve illustrates the thermal characteristics of the parent polymer prior to processing.

The red curve illustrates the different thermal properties of the reground polymer. This could affect the processing regime required to manufacture products with stable mechanical properties.

