

APPLICATION SHEET

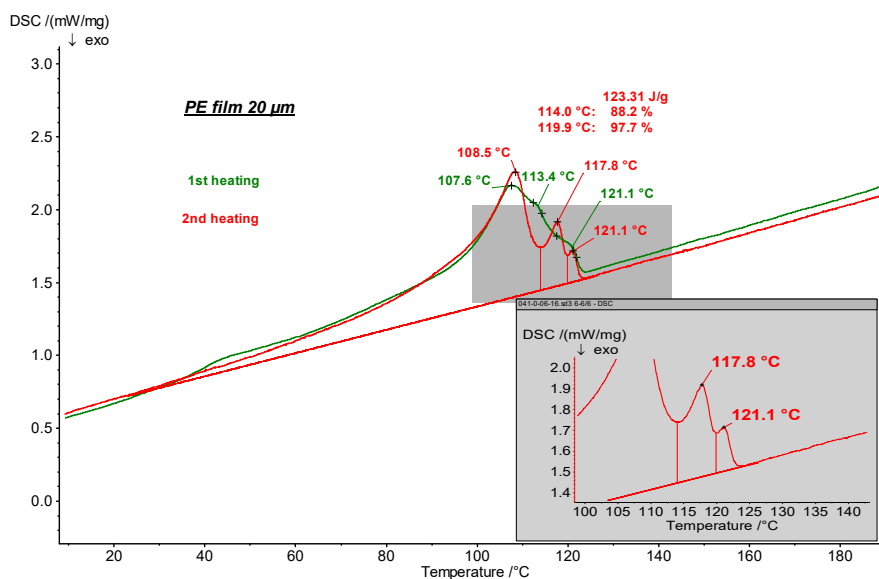
Polymers
DSC 3500 *Sirius*

Polyethylene Film (LD/LLD-PE)

Introduction

Polyethylene is a thermoplastic commodity heavily used in consumer products (over 60 M tons are produced worldwide every year). Polyethylene is created through polymerization of ethene. It can be produced through radical polymerization, anionic polymerization, ion coordination

polymerization or cationic polymerization. This is because ethene does not have any substituent groups which influence the stability of the propagation head of the polymer. Each of these methods results in a different type of polyethylene. It is often used for packaging of food and pharmaceuticals and others materials.



Test Conditions

Temperature range: 0 ... 200 ... 0 ... 200°C
Heating rate: 10 K/min
Atmosphere: Nitrogen (20 ml/min)
Sample mass: 1.00 mg
Crucible: Al, pierced lid

Test Results

In the 1st heating, the endothermic peak at 107.6°C (peak temperature) with two shoulders at 113.4°C and 121.1°C (onsets) already indicates the three-step melting of the sample. During the 2nd heating after a controlled cooling at 10 K/min (red curve), three clear peaks were detected at 108.5°C, 117.8°C and 121.1°C. The individual phases of the LD/LLD-PE film can be separated with the DSC 204 **F1 Phoenix**®.