

# APPLICATION SHEET

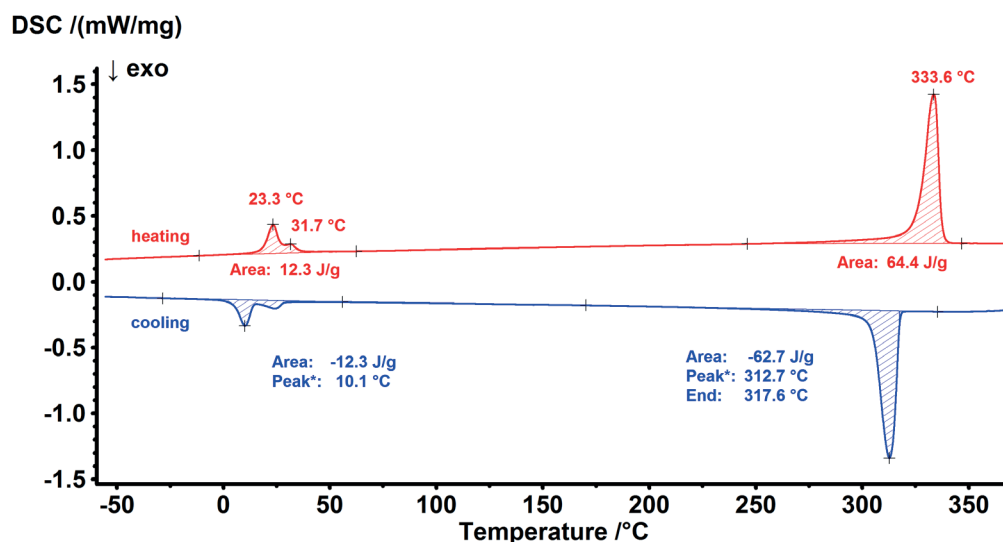
Polymers · Polymer Manufacturing  
DSC 204 *Polyma*

## Polytetrafluoroethylene (PTFE)

### Introduction

PTFE is well-known under the brand name Teflon which is used as non-stick coating for pans. Like other fluoropolymers, PTFE has exceptionally high thermal and

thermo-oxidative stability and is completely solvent-resistant, only certain fluorinated solvents dissolving it at temperatures near its melt temperature. It is also useful as a high-temperature and fire-resistant electrical insulation material.



### Test Conditions

Temperature range: -70°C ... 380°C ... -70°C  
Heating/cooling rates: 10 K/min  
Atmosphere: Nitrogen at 40 ml/min  
Sample mass: 11.88 mg  
Crucible: *Concavus*, Al, pierced lid

### Test Results

The figure compares the heating (red) and cooling (blue) results. The endothermic effect at 25°C is most probably due to the structural solid-solid transition triclinic/hexagonal of the sample, the shoulder at 33°C to the transition hexagonal/pseudo-hexagonal. The endothermic effect at 333.6°C (peak temperature) is related to the melting of PTFE. The results during cooling (blue) nicely confirm the reversibility of the structural transitions but also of melting and crystallization.