

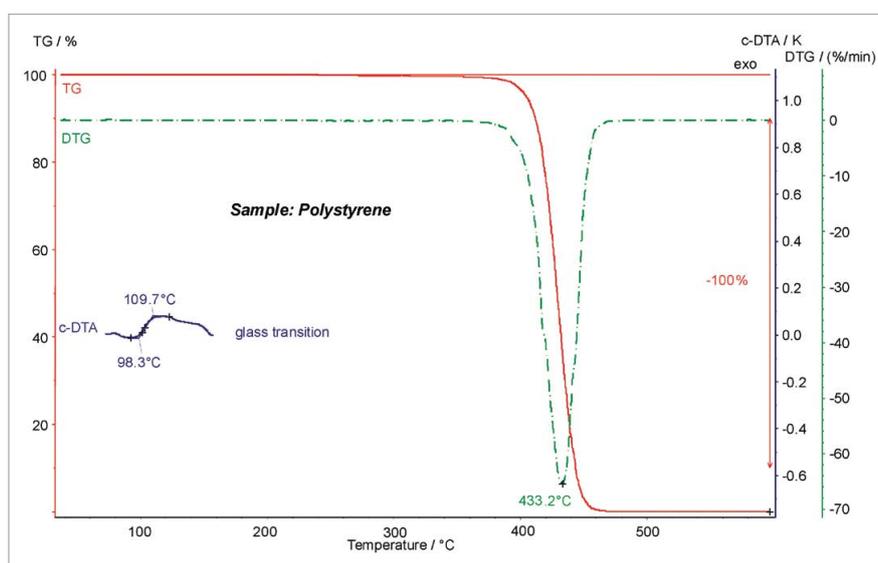
# APPLICATION SHEET

## POLYMERS – POLYMER MANUFACTURING

### POLYSTYRENE

Polystyrene is a polymer made from the monomer styrene, a liquid hydrocarbon that is commercially manufactured from petroleum. Pure solid polystyrene is a colorless, hard plastic with limited flexibility. It can be

expanded and then is the lightweight material of which coffee cups and takeaway food containers are made. EPS is also used in the packaging and insulation industries.



#### Instrument

TG 209 **F3** Tarsus®

#### Test Conditions

Temperature range	35°C ... 600°C
Heating rate	20 K/min
Atmosphere	Nitrogen at 20 ml/min
Sample mass	10.02 mg
Crucible	Al <sub>2</sub> O <sub>3</sub>

#### Results

Before the degradation of polystyrene, an endothermic step was detected in the c-DTA signal (calculated DTA) between 98.3°C and 109.7°C (onset and endset temperatures). It is due to the glass transition of the sample. A mass loss of 100% was detected at 433.2°C (peak temperature of the DTG curve) and is related to the complete degradation of polystyrene. No carbon black was released during the pyrolytic decomposition.