POLYOXYMETHYLENE

Polyoxymethylene, also known as polyacetal or polyformaldehyde, is a thermoplastic with good physical and processing properties. It has good mechanical properties with respect to stiffness, fatigue endurance and creep resistance and a reasonably high impact strength. It is therefore widely used as an engineering plastic to produce gears, bushings and other mechanical parts.

Results

Degradation of the polyoxymethylene occurred in two steps, starting slightly above 300°C. The first one at 367.4°C (peak of the DTG curve) is related to a mass loss of 39.5%. The second mass loss between 380°C and 450°C amounts 60.2%. Both mass-loss steps can be referred to the cracking of the polyester backbone. Nearly no carbon black is formed during the pyrolytic decomposition of the material.

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: 9.48 mg
- Crucible: Al₂O₃