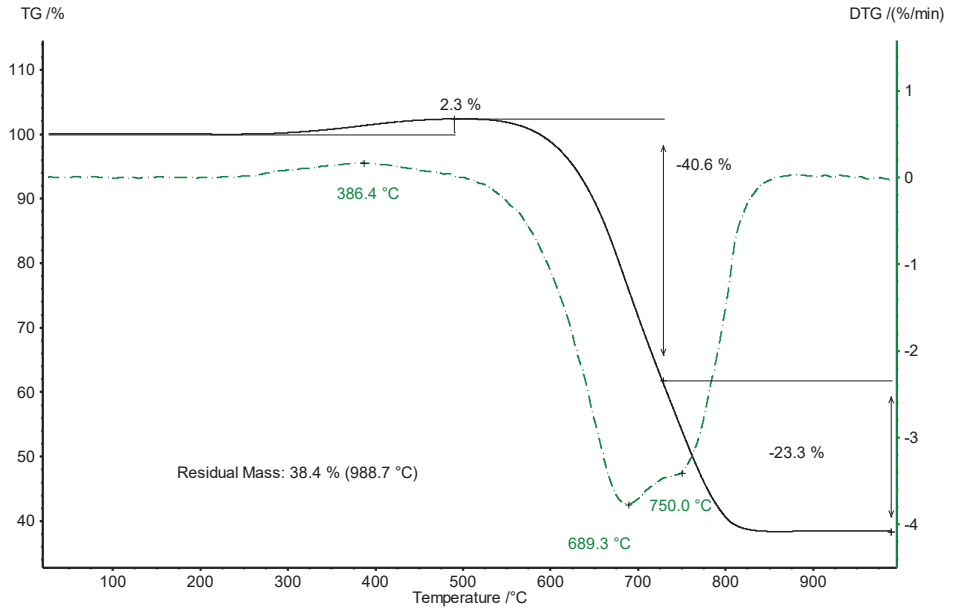
APPLICATION**SHEET**

Inorganics · Electronics
TG 209 ***F1*** *Iris*®

Carbon Brush

Introduction

Carbon brushes are widely used in rotating equipment (motors, generators) to conduct current from one part to another. It can either be a moving or stationary part. The current range may vary from a small signal current to power rating current. It is a common part of slip ring used in electrical motors where it transfers the current between the commutator and the field windings. Generally, carbon, bronze and graphite are used to produce these brushes, but nowadays, many alloys of graphite called graph alloys are also used. The brush makes contact with the current carrying element and acts as a conducting path, allowing the current to flow through it into some other circuit. It may also transfer current from an electrical source to a moving conductor.



Test Conditions

Temperature range:	RT ... 1000°C
Heating rate:	10 K/min
Atmosphere:	Air at 40 ml/min
Sample mass:	14 mg
Crucible:	Pt/Rh/Al_2O_3
Sensor:	Platinel

Test Results

Carbon brushes can be either from pure carbon (graphite) or, depending on the applications, contain additives or metals to increase the electrical conductivity or mechanical stability. The measured material shows a mass increase of 2.3% between 300 and 500°C indicating oxidation of metallic constituents. At about 550°C, the carbon combustion starts and is finished at approx. 800°C. A residual mass of 38.4% was detected due to inorganic fillers and metals (metal oxides).

NGB · Application Sheet 056 · E · 0621 · Technical specifications are subject to change.

NETZSCH-Gerätebau GmbH
Wittelsbacherstraße 42 · 95100 Selb · Germany
Phone: +49 9287/881-0 · Fax: +49 9287/881505
at@netzsch.com · www.netzsch.com