

APPLICATION SHEET

STA Accessories – Crucible Variety

Failure Analysis at High Temperatures

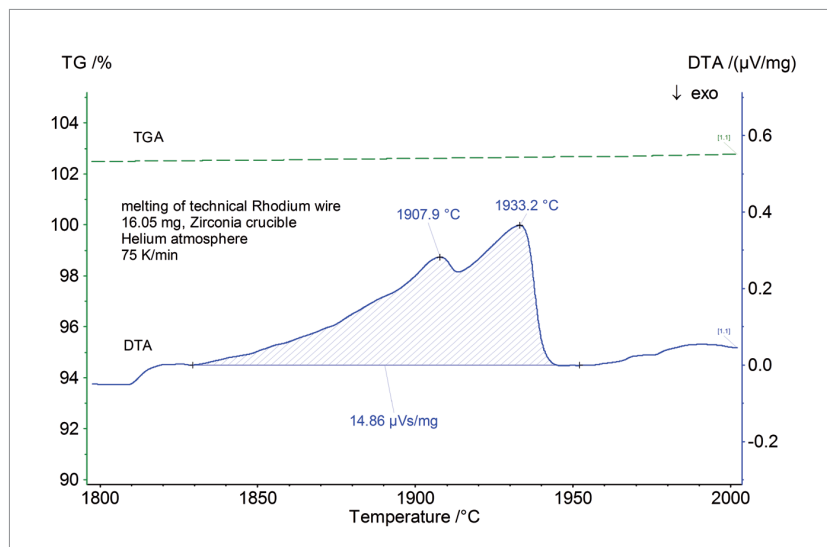
For DTA and TGA measurement in the very high temperature range, zirconia crucibles are available for tests up to 2000°C. These crucibles can be used for testing metals such as rhodium.

Rhodium is used in the automotive industry as a catalyst converter which changes harmful hydrocarbons, CO and NO emissions from the engine into less noxious gases. Furthermore, rhodium is used as an alloying agent for



DSC and TGA-DSC crucible variety, see also *Accessories for Differential Scanning Calorimeters and Thermobalances*

hardening and improving the corrosion resistance of Pt and Pd. These alloys are used in furnace windings, thermocouple elements, electrodes, etc.



Double melting peak of a technical rhodium wire, measured with the STA 449 **F1 Jupiter**[®]

Here, a failure analysis on a technical rhodium wire was carried out with the STA 449 **F1 Jupiter**[®]. The wire material was measured in ZrO₂ crucibles up to 2000°C in a helium

atmosphere. The broad double peak and temperatures (1908°C and 1933°C) confirm that the wire material is not made of pure rhodium.