

APPLICATION SHEET

TGA Accessories – c-DTA® Determination

Determination of Melting and Decomposition of HDPE by TGA

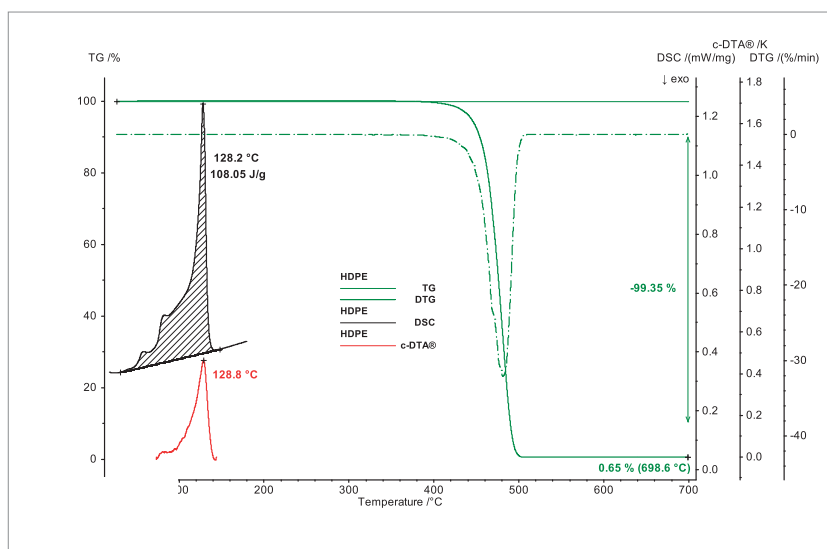
The calculated DTA/DSC-signal, c-DTA®, is ideal for easy temperature calibration without the need for magnetic Curie point standards, which would often necessitate partial disassembling of the thermobalance. In addition, signals of mass change together with endo- and exothermal behaviors (e.g., vaporization with mass loss or melting without mass change) can be obtained without any hardware add-ons. Thus, correlation of such results is not influenced by the hardware.

All TGA sample carriers (TG 209 **F1 Iris®/Libra®**, TG 209 **F3 Tarsus®**, STA 449 **F1/F3 Jupiter®**) allow for c-DTA® determination. Ceramic and metallic crucibles are available



See also *Accessories for Differential Scanning Calorimeters and Thermobalances*

to achieve optimum peak temperature results together with the caloric information on the tested sample.



Very good correlation between calculated (c-DTA®) and measured (DSC) melting peak temperature

High density polyethylene (HDPE) was here measured with the TG 209 **F1 Libra®** at a heating rate of 10 K/min in an N₂ atmosphere. The sample mass amounted to 10.31 mg. Before decomposition started at approx. 420°C (green), the c-DTA® curve (red) detected the melting peak at 128.8°C.

Under the same conditions, the melting peak temperature of HDPE was determined with the DSC 200 **F3 Maia®** (black curve). As can be observed, the two sets of results are in perfect agreement.