

# APPLICATION SHEET

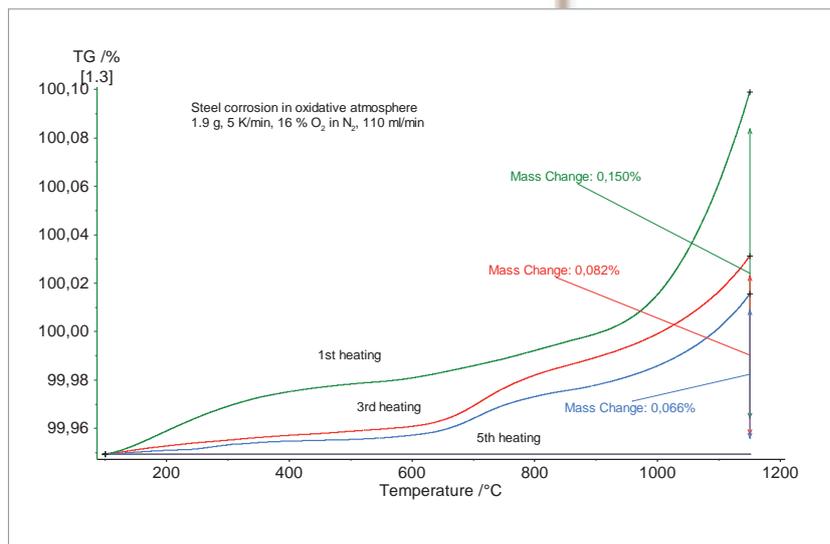
STA Accessories – Sample Holder for Hanging Samples

## Oxidation and Corrosion Studies on Large Metal Surfaces

For oxidation and corrosion studies, it is preferable to have a large sample surface in order to maximize the gas access. TGA and TGA-DTA sample holders are available which allow the sample to be attached in a hanging position. The samples can be a plate, mesh, or a compact body which can be encased in a platinum basket.



Sample holder for hanging samples, see also *Accessories for Differential Scanning Calorimeters and Thermobalances*



Increased sample surface for oxygen access improves the oxidation tests, STA 449 **F1** Jupiter®

For this TGA measurement, the TGA sample holder for hanging samples was used. This measurement shows several heating cycles on a hanging steel sample. The steel sheet was heated at a rate of 5 K/min in a nitrogen atmosphere with 16% oxygen. Oxidation (mass increase) decreases with each subsequent heating cycle. At the beginning of the test, oxidation of the sheet surface occurs. This can be observed in the early onset and rapid

mass increase for the first heating. After a couple of heating cycles, inner oxidation occurs, which is indicated by a slower, diffusion-dependent mass increase.

Hanging the sample in the special holder maximizes the accessible sample surface and therefore improves oxygen access to all sample sides. This is a prerequisite for certain analyses, such as kinetic studies of the oxidation behavior.