

APPLICATION SHEET

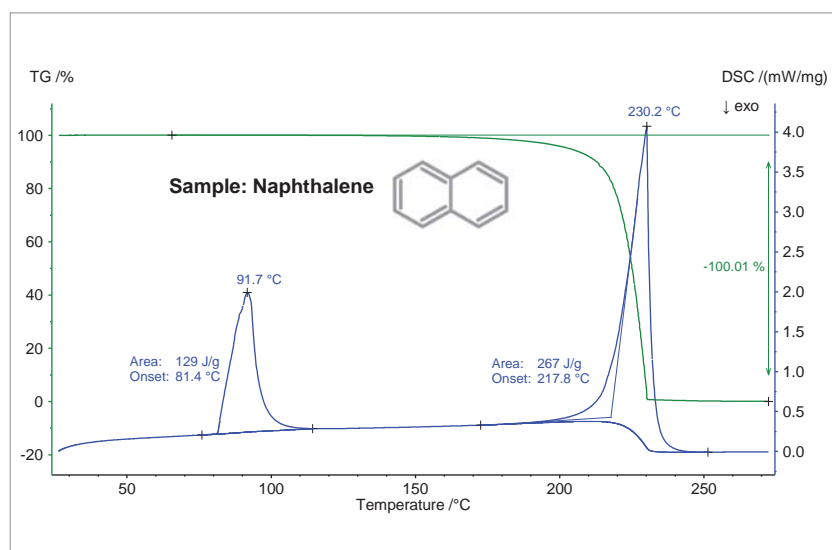
STA Accessories – Al Crucible with Laser-Cut Lid

Melting and Boiling Point Determination for a Polycyclic Aromatic Hydrocarbon

Polycyclic aromatic hydrocarbons (PAHs), such as naphthalene, are formed during natural and anthropogenic processes like volcanic eruptions, forest fires, etc. They are released into the atmosphere and, due to their hydrophobicity, accumulate in soil and may enter into the food chain.



Al crucible with laser-cut lid, see also *Accessories for Differential Scanning Calorimeters and Thermobalances*



STA 449 **F3 Jupiter**[®] measurement using the TGA-DSC sensor for determination of the melting and boiling points of naphthalene (sample mass 22.66 mg, heating rate 10 K/min, nitrogen atmosphere)

This measurement was designed to determine the melting and boiling point of naphthalene. A sealed Al crucible with a 50- μ m laser-cut hole was used.

At an extrapolated onset temperature of 81°C, melting occurred, with an enthalpy of 129 J/g. A mass-loss step of

100% took place between 150°C and 230°C; this reflects evaporation of the sample. This effect was accompanied by an endothermic DSC peak with an enthalpy of 267 J/g and an extrapolated onset of 218°C. The latter reflects the boiling point of naphthalene. These results correspond to the nominal values.