

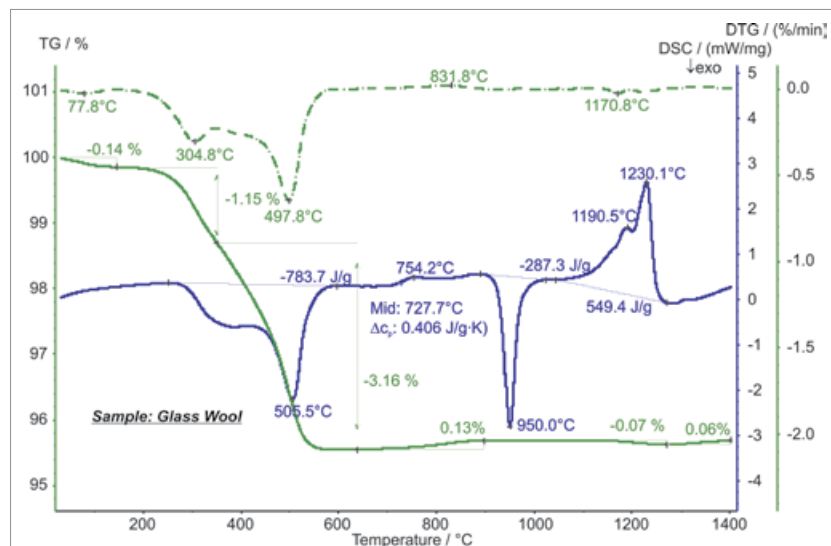
APPLICATION SHEET

GLASS/CERAMICS – BUILDING MATERIALS

MINERAL WOOL

Mineral wool consists of fibers made from minerals or metal oxides. This includes fiberglass, ceramic fibers and rock wool also known as stone wool. Mineral wool is mainly used for filtering and insulation since batts, sheets

and roll made of mineral wool are poor conductors of heat and also of sound. Mineral wool can generally contain a binder and oil to reduce dusting.



Instrument

STA 449 **F3** Jupiter®

Test Conditions

Temperature range	RT ... 1400°C
Heating/cooling rates	20 K/min
Atmosphere	synthetic air (70 ml/min)
Sample mass	49.71 mg
Crucible	Pt
Sensor	TG-DSC type S

Results

The STA measurement shows three mass-loss steps below approx. 600°C which are due to the evaporation of humidity and the burn-up of organic binder. The latter can be seen from the strongly exothermic DSC signal in this temperature range. The step in the DSC signal at 728°C due to an increase in the specific heat of 0.41 J/(g·K) is due to the glass transition. The exothermic DSC peak at 950°C with an enthalpy of -287 J/g is due to crystallization; the endothermic effects between approx. 1050°C and 1250°C with an entire enthalpy of 549 J/g are due to melting. The slight mass changes above 700°C are most probably due to oxidation and evaporation of impurities.