

Measuring cell for UV assisted thermal curing at elevated temperatures

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In industry, thermal curing is used in a wide range of applications such as powder coating, adhesives, sealants, soldering materials, inks, etc. Recently, there has been an increased interest in replacing thermal curing with UV assisted thermal curing in an effort to improve product properties, increase productivity, and reduce production costs. For example, this method can reduce the amount of energy needed for initiating the curing reaction at the same time.

For the development of and measurements on such kinds of samples, a high temperature UV-curing measuring cell is available for the Thermo Scientific™ HAAKE™ MARS™ Rheometers (models: I/II/III; 40 and 60).

This cell is integrated into the existing controlled test chamber (CTC), which has a temperature range from -150 °C up to 600 °C. The lower part of the UV-curing tool is equipped with a light guide that can be attached to a commercially available light source. The light source can be triggered by the rheometer software. Using the software it, is possible to program an automatic measuring routine in which the sample is first pre-cured by the UV light and then thermally cured using the CTC. The combination of convection and radiation heating guarantees fast temperature changes and an even temperature distribution within the CTC oven.

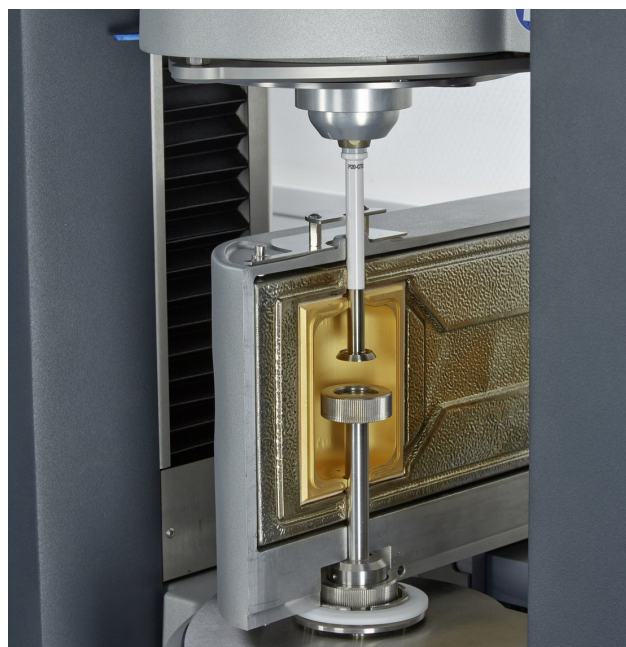


Figure 1: UV curing integrated into CTC for HAAKE MARS Rheometer.

Plate/plate measuring geometries with diameters up to 20 mm made from various materials (e.g., titanium, stainless steel, or aluminum as disposable version) are available.

Ordering information

Product	Order no.
UV-curing cell for CTC consisting of an adapter with lower shaft incl. a quartz glass plate	603-0315
Exchangeable quartz glass plates (10 pcs.) for UV-curing cell for CTC	603-0594
Exchangeable borosilicate glass plates (10 pcs.) for UV-curing cell for CTC	603-0950
Necessary accessories	
Controlled Test Chamber for HAAKE MARS Rheometer	222-1729
UV light source with trigger function: different models of LED and mercury vapor lamps available, e.g. model Omnicure S2000 incl. radiometer, trigger cable (222-2046), and safety glasses	222-2045
Glass fiber light guide 3 mm	222-2367
Measuring geometry, e.g.	
Rotor P8-CTC/Ti with "Connect Assist" and ceramic shaft	222-2224
Upper holder for exchangeable measuring geometries for rheometer models HAAKE MARS I, II, III	222-1747
Upper plate P8 St Ex (exchangeable geometry) for rheometer models HAAKE MARS I, II, III	222-1746


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