

CHEMICAL

Kinetics viscosity / Temperature on resins



USE

Measuring the changes in resins' dynamic viscosity over a range of temperatures from 70 to 105°C and comparing them.



METHOD

Set the sample contained in cup C at a temperature of 70°C for 10 minutes in the RT-1 oven; The measurement consists of increasing the temperature of the RT-1 oven from 70°C to 105°C, and measuring viscosity based on times of 10 minutes, using the software which leads the RM 100 PLUS viscometer at a shear rate of 50 s⁻¹. The resulting curve shows changes in kinetics viscosity based on temperature. Comparing several products by superimposing the curves will show the ability of the products to withstand significant changes in temperature in terms of their viscosity.



EQUIPMENT



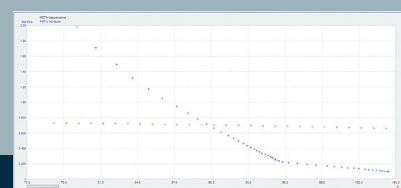
RM 100 PLUS +
Oven RT-1 PLUS



MS-C
with disposable
aluminium cups



Software



RESULTS

Resin A is sensitive to changes in temperature: it is very fluid at high temperatures >95°C, but becomes very viscous when it cools down, passing from 200 mPa.s at 95°C to 2000 mPa.s at 78°C. Resin B however, responds completely differently, with a relatively stable viscosity, in this temperature range, of around 700 mPa.s.

Depending on the usage temperature of these resins, their viscosity could be completely inverted:

A is much more viscous than B up to 85°C, and B become more viscous than A upwards of 95°C.

For both resins to be used in a risk-free way, they must be worked with at 90°C.