

Application Note

/// Viscosity measurement of mineral oil

PRODUCT

ROTAVISC lo-vi Complete (0025000310),
labworldsoft® 6 Visc (0020101872),
HRC 2 control (0025004524),
ELVAS-1 adapter spindle set (0025000390)

INDUSTRY

Petrochemical

TASK / OVERVIEW

The requirement was to measure the viscosity trend of a mineral oil sample at a speed range of 15 to 30 rpm. Using a syringe, 16 ml of mineral oil were injected into the measuring chamber of the adapter spindle set ELVAS-1 and tempered to 40 °C for approx. 30 min with the IKA HRC 2 control through the double jacket of the sample vessel. ELVAS-1 is particularly suitable for measuring low viscosities. The measuring chamber has a double jacket for fast heating or cooling of the sample. The viscosity of the sample was measured and the measurement results were recorded.

EXPERIMENTAL SETUP

Viscometer	ROTAVISC lo-vi
Spindle and sample vessel	Adapter spindle set ELVAS-1
Sample quantity	16 ml
Speed	15 – 30 rpm
Sample temperature	40 °C

SAMPLE MATERIAL

Mineral oil



RESULT

Speed	Viscosity	Accuracy	Density
15 rpm	14.6 mPas	± 0.79 mPas	0.870 g/cm ³
20 rpm	14.4 mPas	± 0.59 mPas	0.870 g/cm ³
25 rpm	14.4 mPas	± 0.47 mPas	0.870 g/cm ³
30 rpm	14.3 mPas	± 0.39 mPas	0.870 g/cm ³

The results are given in mPas (dynamic). In order to receive the values in mm²/s, the dynamic value must be divided by the density. As the density of the sample at 40 °C is not known, a density of 0.870 g/cm³ was assumed. If the density is known, the viscometer is able to measure the kinematic viscosity in mm²/s directly with an automatic calculation process.

