

ABOUT THE NORCROSS SHELL CUP VISCOMETER

The Shell Cup is a simple, reliable device for measuring the viscosity of a wide range of fluids. Originally developed for use with printing inks, it has found widespread applications as diverse as fuel oil and industrial finishes — for calibrating other viscosity sensors as well as for primary measurements.



Viscosity Measurement with The Shell Cup
The conversion table indicates the useful range for each size. The measurement is accomplished as follows:

- 1. Submerge the cup in the fluid for approximately 30 seconds to allow the cup to come to sample temperature. The sample must be representative — thoroughly stirred for example, and at a known, preferably standard temperature.
- 2. Lift the cup vertically out of the fluid, starting the stop-watch as the cup breaks the surface.
- 3. Record the time required for the cup to empty, stopping the watch when the stream breaks.
- 4. Read the viscosity from the appropriate conversion charts or calibration drawings. Email us for more information.

The cup was developed by Shell Development Company and is marketed by Norcross Corporation.

ABOUT PROCESS VISCOSITY MEASUREMENT AND CONTROL

NORCROSS has been measuring the viscosity of numerous different processes for over 60 years.

As shown on the front of this conversion table, we have sensors for measuring viscosity in open tanks, closed tanks, pressurized tanks and inside pipe lines.

We can measure viscosity at different pressures, flows, temperatures and viscosity ranges.

The VISC6000 is a multiple station control system. The MP2000 is a single station controller/transmitter and the MP2500 a single station controller.

ABOUT NORCROSS SENSITIVITY AND ACCURACY

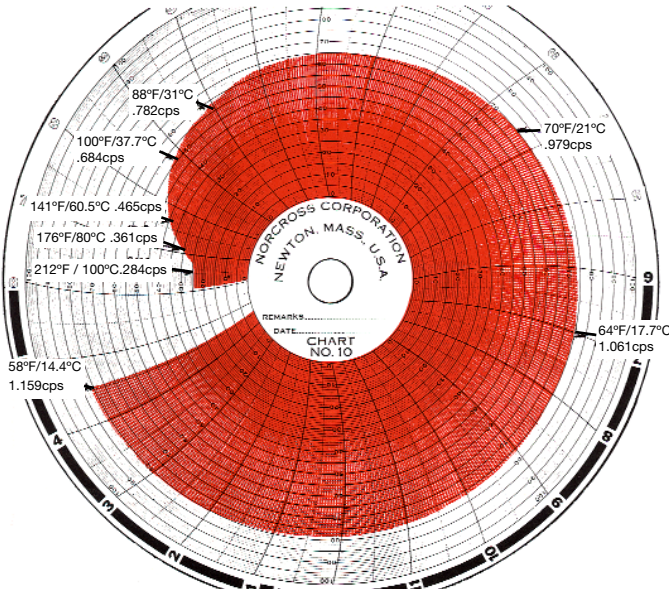
The 24hr circular chart, shown here, is an actual recording obtained with NORCROSS Viscometer.

This recording starts with boiling water 212°F/ 100C, which is then allowed to cool.

The viscosity was recorded every three minutes during the cooling period. A few measured temperatures, together with corresponding centipoise viscosities, obtained from tables published by the Bureau of Standards, are shown.

This chart illustrates the outstanding sensitivity of the NORCROSS Falling Piston Viscometer. This sensitivity, which only the NORCROSS Process Viscometer can produce, combined with the simplicity and ruggedness of all NORCROSS units, create a versatile and long lasting viscosity sensor/system.

NORCROSS Viscosity Sensors and/or Viscosity Control Systems are designed to provide years of reliable operation.



NORCROSS® FIRST IN VISCOSITY CONTROL

Product Overview & Viscosity Conversion Tables

Viscosity Sensors



In-Tank Sensors:
Model M8BO and M8B
(0.1-100,000 cps)



In-Tank Sensor:
Model MXBO
(0.1-100,000 cps)



True In-Line Sensor:
Model M50
(0.1-2,000 cps)



In-Line Sensor:
Model M24
(0.1-7,000 cps)



Reactor/ In-Line Sensor:
Model M20
(1,000 - 1M cps)



Reactor Sensor:
Model M10
(1-1M cps)

Viscosity Controllers



VISC6000
Touch Screen PLC



MP2000
Digital Controller



MP2500
Digital Controller

Efflux Cup

Shell Cup Viscometer -
For hand testing viscosity in open tanks/containers. (1-1200 cps)

Other cups available within range 0.3 cps-7,000 cps



visit us at: www.viscosity.com

CENTIPOISE 1.00 2.00 3.00 5.00 7.50 10.0 15.0 20.0 25.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100 125 150 175 200 225 250 275 300 325 350 375 400 500 600 700 800 900 1000 1250 1500 1750 2000 2500 3000 3500 4000 4500 5000 6000 7000 8000 9000 10K [References](#)

Notes: Note 1: This data is based upon a table from Worthington Pump, 1956 which was based upon original test data no longer available. Not all 'Zahn' Cups match this data.	Note 2: This data is based upon original mechanical design of Shell Chemical. Equations in ASTM 4212 do not match actual values, as they were based upon prior data plots that are no longer available and do not match the actual cups.	Note 3: The 2 1/2 and 3 1/2 Shell Cup were introduced by Norcross in the 1970's to provide additional viscosity range coverage. Note 4: Typical piston size recommended for use in the Model M8BO process viscometer (with a length code C - other lengths may require	different pistons) - Contact Norcross for information. Note 5: Data based on S.G. =1.0 Centipoise = Centistokes X S.G.
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