

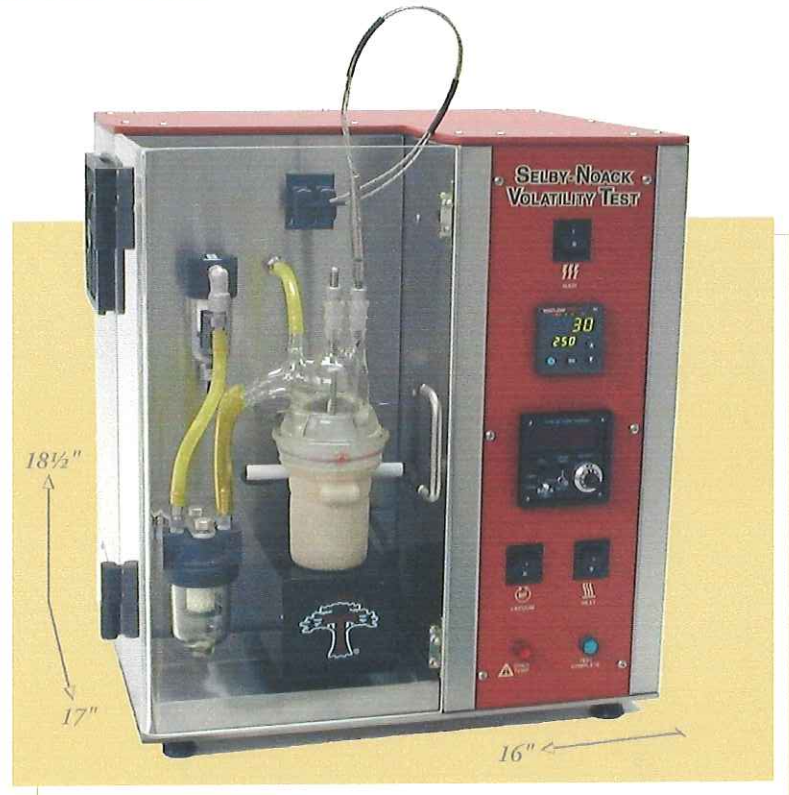


"Tomorrow's Instruments... Today"™

# SELBY-NOACK VOLATILITY TEST

## EVAPORATION LOSS / VOLATILITY COLLECTION OF LUBRICATING OILS

- ASTM D 5800 – required for ILSAC GF-3, GF-4, GF-5; API 'SL', 'SM', 'SN' specifications for modern engine oils
- First commercial non-Wood's Metal heating system
- Does not require placement in hood – eliminates hood effects on vacuum control
- Self-contained unit with very small-footprint
- Simple to use and easy to clean
- Only Noack system to collect volatile products for further analysis of phosphorus, sulfur, etc.
- Used for *Sulfur Emission Index* and *Phosphorus Emission Index* believed related to sulfur and phosphorus emissions from combustion chamber
- Digital RS232 output for recording of vacuum and temperature



The original Noack evaporation loss test has been known and used in the industry since the 1930's. It uses a toxic mixture of compounds known as Wood's Metal for sample heating. In the mid-1990's, Mr. Selby and his co-workers at Savant, Inc. eliminated the need for Wood's Metal by devising a noble-metal heater approach. When thorough developmental work on the Selby-Noack was completed in 1997, Tannas began marketing the first non-Wood's Metal Noack tester.

In addition to its D 5800 precision and dramatically smaller footprint, the Selby-Noack has a major advantage in being able to collect all the volatiles emitted by the test. Analysis of the physical and chemical properties of these volatiles is important, for example, in determining the transport of phosphorus and sulfur compounds which prematurely degrade the exhaust system catalyst control of emissions.

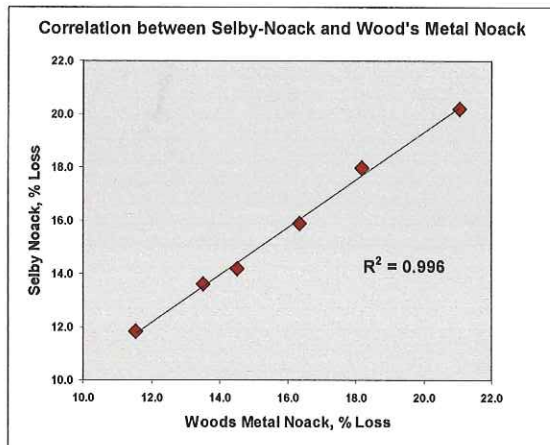
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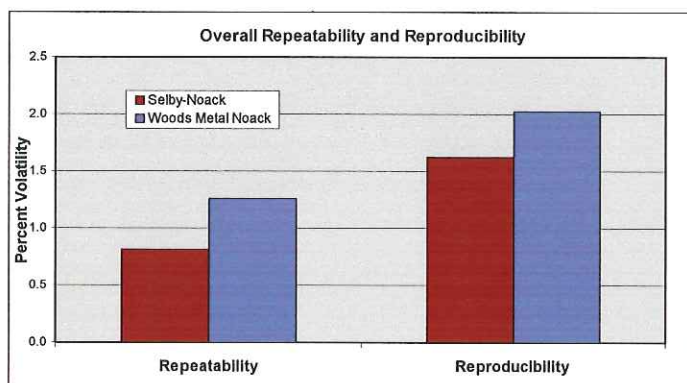
# Selby-Noack Volatility Test

<b>Dimensions</b>	Bench-top 16"(w) x 17"(d) x 18.5" (41 x 43 x 47 cm)
<b>Weight</b>	~50 lbs. (23 kg)
<b>Voltage</b>	120 VAC, Single Phase, 12 Amp. 60 Hz <i>(Also available in 220VAC and 50 Hz)</i>
<b>Heating Medium</b>	Noble-Metal Electric Heater <i>(non-Wood's metal)</i>
<b>Vacuum Control</b>	Automated Vacuum Control ( $\pm 0.1$ cm of H <sub>2</sub> O) Built-in Vacuum Pump
<b>Operating Parameters</b>	250°C ( $\pm 0.1^\circ\text{C}$ ) 65 gram sample volume 20 mm Water Vacuum 1 hour test duration <i>(automatic shut-off)</i>
<b>Output</b>	Digital RS232 to printer <i>(Analog available upon request)</i>
<b>Safety</b>	Over-temperature Cut-off Fuse & Indicator Protective Heat Shield CE Marked



Data taken from the ASTM Test Monitoring Center (TMC) Round Robin study are shown in the adjacent graphs. The Selby-Noack has very good correlation to the Wood's Metal Noack with better overall precision.

The  $R^2$  correlation value on six known oils covering a broad range of volatility is reported at 0.996. Precision data shows the Selby-Noack is 55% more precise in repeatability and 25% more precise in reproducibility than the Wood's Metal Noack.



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