

Tannas Noack S2[®]

Volatility Test

ASTM D5800, CEC L-40-93



**ASTM D5800D
CEC L-40-93**

Required for :

- ILSAC GF-3 to GF-6 & dexos™ Engine Oil Specifications.
- API 'SM', 'SN', 'SP' categories for modern engine oils.

Special Features

- Sized Orifice Tubes easily calibrate and "tune" instrument to lab environment.
- True operation at 250°C Temperature Setting.
- Redesigned for improved precision and rapid turn-around between tests.
- Collection of volatile products during Noack test for further analysis.

Principle

Evaporation Loss / Volatility: The evaporation loss/volatility of engine oils is of particular importance to the automotive industry as it closely relates to oil consumption in an engine and can lead to a change in the properties of the engine lubricant.

A measured quantity of sample is placed in an evaporation crucible and heated to 250°C for 1-hour while a constant flow of air, controlled at 20 mm H₂O vacuum, is drawn over its surface to remove the resultant vapors. The loss in mass of the oil is determined by weighing before and after the test and calculating the percent loss.

History

The original Noack volatility test was introduced to the industry in the 1930's for determining the evaporation loss of lubricating oils. Now known as Procedure A, it operates with a toxic mixture of compounds known as Wood's Metal for sample heating.

Innovation

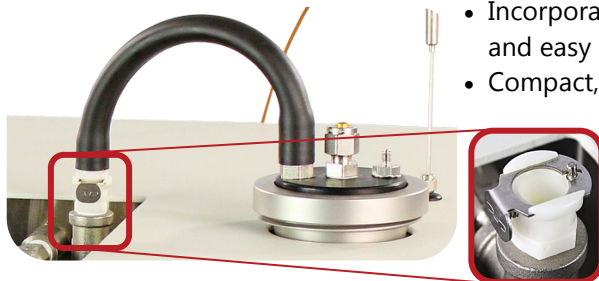
In the mid-1990's, Mr. Selby, and his colleagues at the *Savant Group*, eliminated the need for Wood's Metal by devising a noble-metal heater approach. This innovative development was completed in 1997 and Tannas began marketing the first non-Wood's Metal Noack tester. Novel advancements and updates to the original Selby-Noack[®] led to the new Tannas Noack S2[®] Volatility Test.

Features

- Advanced Automated Software Option.
- Compatible with MS Windows[®] 11
- Used for *Phosphorus Emission Index (PEI)* and *Sulfur Emission Index (SEI)* related to phosphorus and sulfur emissions from the combustion chamber.
- Calibration to lab environment using interchangeable Orifice Caps – 'tunable' to the atmospheric conditions of each lab.
- Only Noack System to collect volatile products for further analysis of phosphorus, sulfur, and other elemental oil vapors.

New Design

- Design enhancements for improved test precision, ease-of-use for high sample workloads and robust day-to-day operation.
- Incorporates metal Reaction Vessel and Quick Connect Fittings for test efficiency and easy cleaning.
- Compact, all-in-one design with small footprint.
- New touchscreen controller with a user-friendly interface.



Quick Connect Fitting: Connections snap together easily for rapid and stable test setup.

Instrument & Parts

Noack S2® Volatility Test:

480000: 110 VAC, 50/60 Hz Power
 480500: 220 VAC, 50/60 Hz Power

ASTM D5800, Procedure D:

480145: SN2 Threaded Cup/Lid Assembly
 480114: Flex Outlet Tube Assembly
 480155: Digital Manometer Assembly
 480133: Coalescing Filter Housing Assembly
 480135: Quick Connect O-ring
 480150: Leak Check Tube Assembly - RV
 450145: System Leak Check Tube Assembly
 500612: Thermocouple Assembly (Type J)
 450110: Coalescing Filter Element
 450135: O-ring - Coalescing Filter
 460029: Vacuum Tubing - Tygon 1/4" ID
 450138: Pump Filter Element
 450136: O-Ring - Pump Filter
 480026: Stir Bar - Cross Shaped
 500019: Pipe Cleaners
 550031: Gripper Gloves
 950014: Exhaust Tubing
 950539: Heat Resistant Stopper (High Temp Red)
 950536: Cork Stopper
 040045: VarClean Cleaner (1.89 L/ Half Gallon)
 040035: SNL-75 Reference Oil (1.89 L/ Half Gallon)
 040039: NCO-12 / SNA-130 Reference Oil (1.89 L/ Half Gallon)

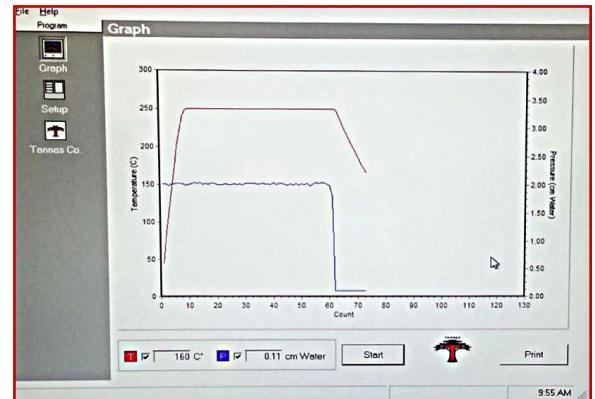
Instrument Specifications

| | |
|---|--|
| Dimensions | Bench-top: 55(w) x 40(d) x 33(h) cm (22 x 16 x 13 inches) |
| Weight | ~33.5 kg (74 lbs.) |
| Voltage | 120 VAC, 15 amp. max 220-240 VAC, 8 amp. max. |
| Frequency | 50/60 Hz |
| Heating Medium | Resistive Solid Metal Heating (<i>non-Wood's metal</i>) |
| Vacuum Control | Automated Vacuum Control (± 0.1 cm of H ₂ O) Built-in Vacuum Pump |
| Operating Parameters | Temperature: 250° (± 0.1 °C) 65 gram sample volume 20 mm Water Vacuum 1 hour test duration (<i>automatic shut-off w/audible alarm</i>) |
| Output | Digital RS232 to printer (<i>Analog available upon request</i>) |
| Safety | Over-temperature cutoff Fuse & Indicator Protective Heat Shield CE Marked |
| Shipping Weight & Dimensions | ~60 kg (132 lbs.) Approximately ~86 x 60 x 83 cm (34 x 24 x 33 inches) Approximately |

Automated Software

The Tannas Noack S2® Software Package provides real-time display of test temperature and vacuum control during the 1-hour test and temperature based automatic shutdown after test. It allows convenient entry of sample information and offers test result reporting at end-of-test.

The data analysis downloads to a .csv file for easy transfer into LIMS or conversion to an Excel spreadsheet.



Additional TANNAS CO. Precision Laboratory Instruments



Tannas Foam Air Bath (TFAB)

- ASTM D892, D6082, D1881, D7840, IP146
- Non-liquid bath
- 24°C to 150°C range



TBS 3000 HTHS Viscometer

- ASTM D4683, D6616, CEC L-36, IP370
- High-Temperature, High-Shear (HTHS)
- 80°C, 100°C, 150°C testing



Quantum® Oxidation Tester

- ASTM D2272, D2112, D4742, D942, IP229
- RPVOT, TFOUT, Grease Oxidation
- Non-liquid 'dry cylinder' sample heating



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