TANNAS CO.
LABORATORY INSTRUMENTS

NEW

Tannas Noack S2®

Volatility Test

ASTM D5800, Procedure D

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 H_2O 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® 10
- 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.

ASTM D5800D

Required for :

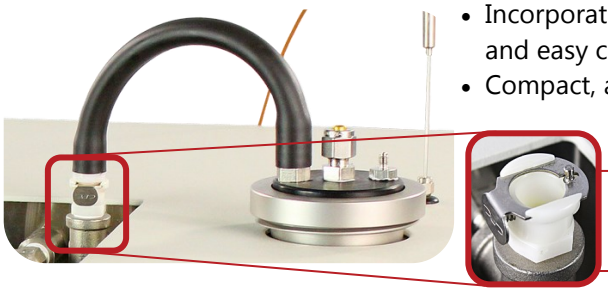
- ILSAC GF-3 to GF-6 & dexos™ Engine Oil Specifications.
- API 'SL', 'SM', 'SN' categories for modern engine oils.

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.

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 (left): Connections snap together easily for rapid and stable test setup.

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ISO 9001:2015 QMS

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
480130: Inclined 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)
040038: SNA-130 Reference Oil (1.89 L/ Half Gallon)

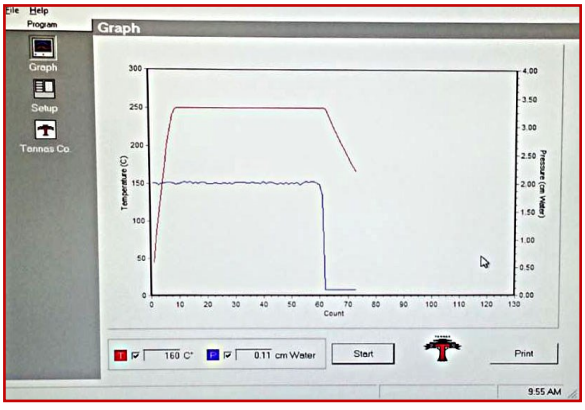
Instrument Specifications

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 (*non-Wood's metal*)
Vacuum Control	Automated Vacuum Control (± 0.1 cm of H_2O) Built-in Vacuum Pump
Operating Parameters	Temperature: 250° (± 0.1°C) 65 gram sample volume 20 mm Water Vacuum 1 hour test duration *(automatic shut-off w/audible alarm)*
Output	Digital RS232 to printer *(Analog available upon request)*
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, IP146
- Non-liquid bath
- 24°C to 150°C range

Tapered Bearing Simulator (TBS®) Viscometer
- ASTM D4683, D6616, CEC L-36-A90, IP370
- High-Temperature, High-Shear (HTHS) Viscosity

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

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