TANNAS CO.
LABORATORY INSTRUMENTS

TFAB

Tannas Foam Air Bath

ASTM D892, D6082, D1881, D7840 | IP 146

Principle

Foaming Tendency & Stability of Lubricating Oils: High foaming tendency and slow foam collapse time can be serious problems in systems such as high-speed gearing, high-volume pumping, and splash lubrication. Foaming can cause inadequate lubrication, cavitation, and loss of lubricant due to overflow, resulting in mechanical failure. Oil additives help reduce the generation of foam. The Tannas Foam Air Bath (TFAB) measures the tendency and stability of foam additive effectiveness in oils and lubricants over a broad temperature range (24°C to 150°C) per the industry test methods. The removable Carousel holds up to (6) six 1000-mL test cylinders which are compatible with the recommended Stainless Steel cylindrical Gas Diffusers or spherical (Mott) Gas Diffusers.

History

Liquid baths have been used for foam testing since the inception of the method. With the need from the automotive industry for foam testing at higher temperatures (150°C) came the desire to eliminate the safety risks and imprecision of hot, messy oil bath systems, sparking the development of the TFAB in 1995. The air bath system has been used and recommended for foam test methods ever since.

Innovation

The single air bath approach of the TFAB dramatically reduces bench space requirements, eliminates the need to replace oxidized (discolored) bath oil, permits more accuracy in reading foam levels, and significantly reduces the hazards of operating sequences of higher temperatures. An innovative touchscreen interface promotes ease-of-use, while the new Direct Drive motor allows for quiet and maintenance-free operation. The TFAB has shown correlation in ASTM round robin studies and has assisted in ASTM efforts of improving the test method precision.

Features

- **Direct Drive** motor for quiet and maintenance-free operation.
- The *non*-liquid system eliminates hazardous bath mediums from laboratory environments.
- Thermal equivalence at all locations within bath - no temperature variations among samples.
- Removable six-position cylinder carousel; convenient side-mounted cylinder drying rack.

- Touchscreen controller
- Thermocouple placement for accurate control via sample temperature.
- Progressive timer with audible alarms for simplified determination of Collapse Time in D6082 test.
- Built-in cool 'tap' water circulation system aids cooling from higher temperature Sequences and maintains 24°C in warmer lab environments. *Optional* Chiller Bath available.

The touchscreen controller offers a user-friendly interface during operation with continuous time readout and sequence alarms for each measuring time.

ASTM D892
(Sequence I, II, III)
IP 146
Determines the foaming characteristics of lubricating oils at 24°C and 93.5°C.

ASTM D6082
(Sequence IV)
Determines the foaming characteristics of lubricating oils at 150°C.

Required for :

- ILSAC GF series, IFC™, dexos™ and GB 11121 Engine Oil Specifications.
- API categories for modern engine oils.

ASTM D1881
Foaming Tendencies of Engine Coolants

ASTM D7840
Foaming Tendencies of Non-Aqueous Engine Coolants

China National Standard
GB/T12579
SH/T 0722, SH/T 0066

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Parts & Accessories

TFAB Instrument:

550100: 220 VAC, 50/60 Hz Power

ASTM D892 & D6082:

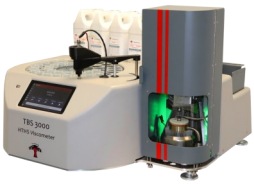
550120: Water Displacement Exit Air Measuring Device
550122: Digital Exit Air Measuring Device
550156: Air Flow Calibration Device
550154: Digital Gas Diffuser Verification Device
550080: TFAB Chiller Bath
550016: Glass Cylinder - 1000 mL
550157: Stainless Steel Diffuser Stone - Certified
550145: Diffuser Tube Assembly
550029: Centering Washer
550018: Air Tubing - 18" Tygon
550020: Probe s/s 18"
970137: Lamp LED - Foam Bath
550125: Cylinder Stopper Assembly (3 hole)
550060: Spare Fuse Set - 220V, 50/60 Hz
550037: Carousel Rubber Stopper
040004: F-100 Reference Oil (1.89 L)

Instrument Specifications

Dimensions	Bench-top: 61(w) x 61(d) x 53(h) cm | (24 x 24 x 21 inches)
Weight	~72.5 kg (~160 lbs.)
Voltage	220 VAC, Single Phase, 10 Amp.
Frequency	50/60 Hz.
Heating Medium	Air
Improved Feature	**New Direct Drive** motor for quiet and maintenance-free operation
Diffuser Air Flow	Stainless steel, cylindrical, diffuser stone Pre-heated diffuser air flow system Two (2) built-in Air Flow Meters Air Flow Rate: 94 to 200 mL/min. (±5 mL/min.)
Operating Parameters	Temperature Range: +20°C to 175°C (±0.1°C) Foaming Sequences: I @ 24°C II @ 93.5°C III @ 24°C IV @ 150°C
Touch-Display Controller	Digital Display of Operator Commands Audible Sequence Alarms for each measuring time Automated Air Flow Meters programmed for each sequence Continuous time readout
Sample Volume	200 mL
Testing Capacity	Holds six (6) 1000 mL Cylinders Tests two (2) oil samples simultaneously
Safety	Over-temperature Cut-off Fuse & Current Limiting Fuses Triple Pane Glass View Port *CE* Marked
Shipping Weight & Dimensions	~90 kg (198 lbs.) Approximately ~71 x 71 x 122 cm (28 x 28 x 48 inches) Approximately

Additional TANNAS CO. Precision Laboratory Instruments

Tannas Noack S2® Volatility Test
- ASTM D5800, Procedure D, CEC L-40
- Phosphorus Volatility
- non-Wood's metal heating system



TBS 3000 HTHS Viscometer
- ASTM D4683, D6616, CEC L-36, IP370
- High-Temperature, High-Shear (HTHS)
- 80°C, 100°C, 150°C testing

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

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