

FALEX

TACKINESS ADHESION ANALYZER

Quantifiable data for tackiness properties is now possible with the Falex Tackiness Adhesion Analyzer (TAA).

Falex introduces the first commercial test instrument to quantitatively measure the tackiness and adhesion properties of greases and other lubricating materials. The TAA is based on over three years of scientific and technological research and replaces the crude finger test and other indirect methods by direct measurement of adhesion, tackiness and thread length under unique test conditions now possible with the Falex TAA.

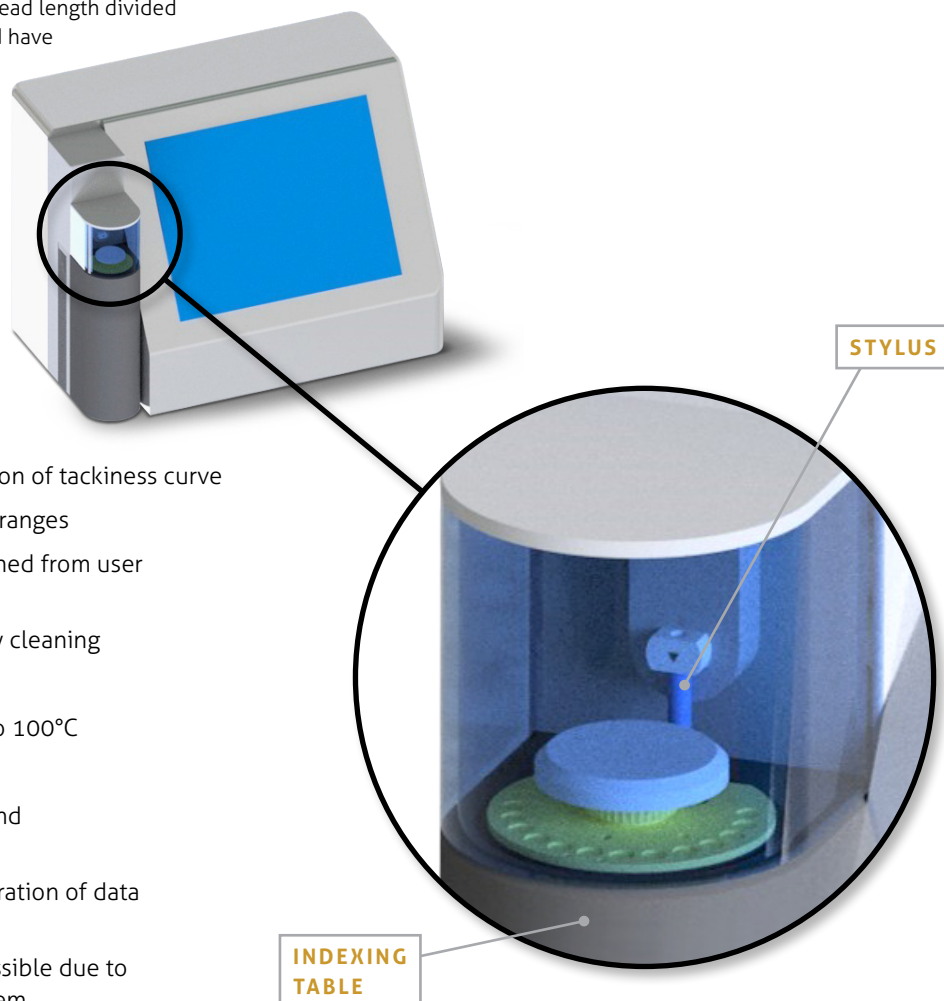
The scientific publication by D. Drees et al¹ proposes a method and set of test conditions. The Falex TAA automatically executes and records the full approach-retraction curves at precisely controlled temperatures and retraction speeds. This allows for scientifically determining values related to measuring tackiness, including pull-off force, separation energy, and thread length. From these values, the "tackiness number" is automatically calculated and is defined as the thread length divided by separation energy. The "tackiness number" could have application in grease specifications.

The instrument is designed for ease of use with many automatic operation features. A wide range of retraction speeds, temperature and materials allow for flexibility in identifying properties under a wide combination of test conditions which can influence tackiness and

adhesion properties. While a 3mm copper ball stylus has been used in the test development, other materials and geometric shapes could easily be used for additional evaluations. Complete profiling of the tackiness of a grease with respect to changes in temperature and retraction speed is now possible.

The Falex TAA will give the user consistent data to scientifically develop greases and other materials for applications where tackiness is critical to functioning of equipment. Comparisons of tackiness with respect to changes in temperature and retraction speed are now possible allowing for complete characterization of a grease with respect to tackiness.

¹ Can we put a Value on the Adhesion and Tackiness of Greases?, E.P. Georgiou, D.Drees, M. De Bilde, M. Anderson, in : Tribology Letters (2018) 66:60



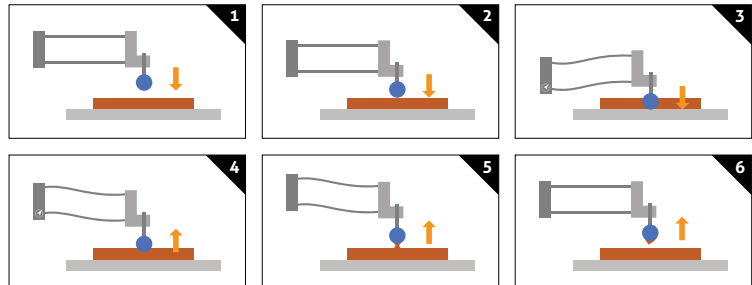
FALEX 200 Features

- » Sleek, modern design
- » Programmable indexing table for automation of tackiness curve
- » Variable retraction speeds and movement ranges
- » Fully automated test sequences, programmed from user interface with touchscreen
- » Removable 3-piece sample holder for easy cleaning
- » Easily exchangeable sensor stylus
- » Temperature testing range from ambient to 100°C
- » Efficient compact design
- » Algorithms available for easy computing and product comparison
- » 'Industry 4.0 ready' design for future integration of data analysis in cloud or network databases
- » DMA (Dynamic Measurement Analysis) possible due to integrated dynamic control of motion system

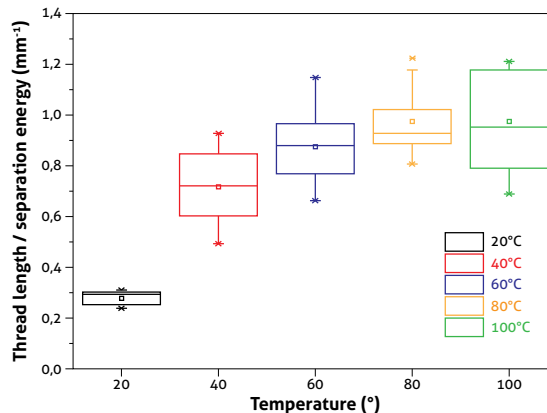
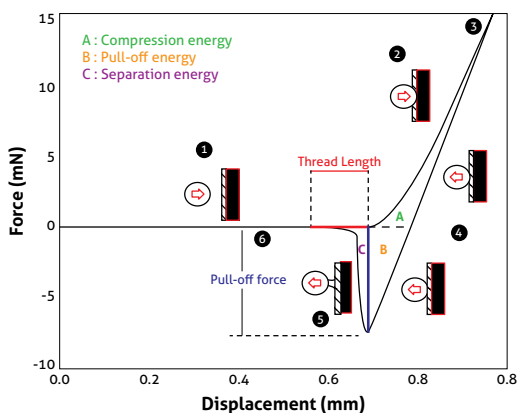
Falex 200 Method

Sensor approach and retraction motion

The stylus (a 3 mm copper ball) is pushed into the grease sample with controlled force. Motion is then reversed to effect the retraction of the ball from the grease sample. This motion is made at a precisely controlled initial acceleration and speed. During the test operation, a highly accurate and precise measurement system is used to record the force of the ball moving within the grease. High speed data collection makes detection of small changes in force measurement possible. Retraction can be programmed with different speeds and initial accelerations up to 80 m/s². The grease sample can be heated to temperatures from ambient (no heat applied) to 100°C. Other geometries and materials can be used for the stylus.



Typical retraction curves and tackiness parameters*



Falex 200 Technical Data

Temperature	Ambient to 100°C (controlled)	Overall Dimensions	45L x 35W x 45H cm
Data Acquisition	1000Hz	Weight	25 Kg
Initial Acceleration	Up to 80m/s ²	Power Requirements	110V or 220V, 50/60Hz, 10 AMP
Retraction Speed	0.1-5mm/s		

Falex Corporation follows a policy of continuous product improvement. Specifications are subject to change without notice.

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