

Production: SYRUP vs. HONEY vs. TREACLE

Objective: Comparison of surface stickiness and stringiness of Syrup, Honey and Treacle

Type of action: Adhesion test

Test setting:

Speed	Test mode	Target force	Target distance	Hold
1 mm/s	Distance (c)	6 gf	170 mm	2 sec

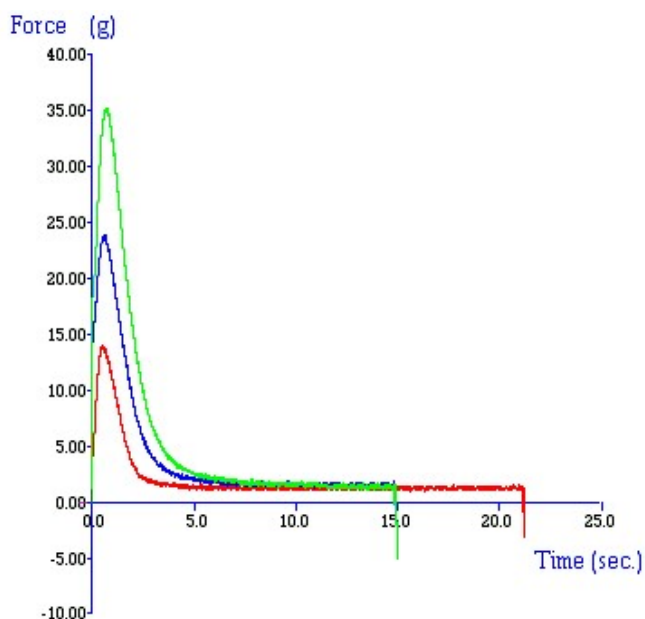
Accessory:

φ36 mm cylinder probe, Platform

Test Set-Up:

Place the samples in their original or other suitable container centrally under the probe. Commence the adhesive test.

Typical plots:



Observations:

The probe applies force of 6g on the surface of the sample and holds this force for 2 seconds. After this time the probe withdraws from the sample at 8mm/s and stops at a distance of 170mm above the sample surface. The maximum force required to separate the probe from the sample is recorded as the stickiness. The stringiness value is recorded as the distance the probe moves away from the sample surface before the force drops to 2.5g. The greater this distance value the more 'stringy' is the product.

Data Analysis:☒ Max Force☒ Cursor Mark by user (find the force at 2.5gf)**Results**

Sample	Mean Max. Force 'Surface Stickiness' (+/- S.D.) (g)	Mean Distance to Separation 'Stringiness' (+/- S.D.) (mm)
Honey	14.0 +/- 0.8	22.0 +/- 1.2
Syrup	23.4 +/- 0.4	50.1 +/- 1.5
Treacle	34.6 +/- 3.4	59.3 +/- 7.8

Notes:

- In order to compare tests, the test temperature and container geometry should be the same (and should always be specified) when reporting results.
- For the accurate measurement of stickiness make sure that the sample container does not lift on probe withdrawal. It is recommended that the container is held for this part of the test.
- An applied force of 6g has been selected, in this instance, as this value was considered most suitable to achieve full contact between the sample and the probe surface. If one was to consider testing samples of much firmer consistency then it may be necessary to increase the force value if full contact is not achieved. This will also be true if one chooses to use a cylinder of larger diameter.
- If may be necessary to modify the test to contact the sample with a greater force or for a longer probe contact duration. This may subsequently increase the stickiness and value. Any values obtained are only relative at the specified contact force and time for which they are tested. The speed of probe:product separation (i.e. the Post-Test Speed) will also greatly affect the magnitude of the adhesive parameters. It may be preferable to increase the separation rate to 10.0mm/s, which reduces any potential flow of the actual syrup, or decrease the separation rate to a much slower speed. Again any comparisons made between test results can only be based on the same testing parameters.
- If a long contact time is required before probe withdrawal it may be preferable to use the delay acquisition feature in the software rather than compromise by reducing the data acquisition rate. When the delay acquisition feature is used the probe:product contact part of the test will be performed by the Texture Analyser, but data will not be collected. Data will only be captured upon probe withdrawal i.e. the important section of the graph required for data analysis.
- When attempting to optimise test settings it is suggested that the first tests are performed on the hardest samples to anticipate the maximum testing range required and ensure that the force capacity allows testing of all future samples.