Production: CHEWING GUM STICKS

Objective: Measurement of the hardness and resistance of chewing gum sticks to bend/flex (Resistance part)

Type of action: Bending test

Test setting:

Speed	Test mode	Trigger	Target	Hold
2 mm/s	Distance (c)	5 gf	15 mm	0 sec

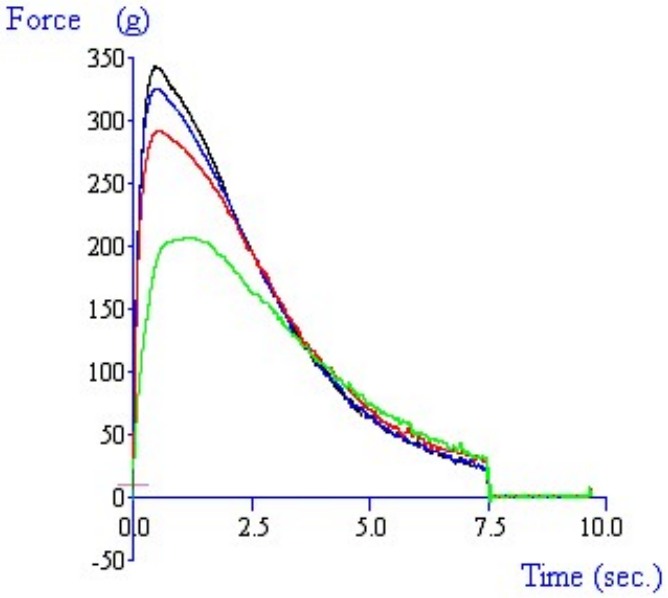
Accessory:

Three-point bending rig, Platform

Test Set-Up:

The two adjustable supports of the rig base plate were placed a suitable distance apart so as to support the sample i.e. 25mm. For comparison purposes this gap distance was be noted and kept constant. The base plate was then secured onto the Heavy Duty Platform. The Heavy Duty Platform was manoeuvred and locked in a position that enabled the upper blade to be equidistant from the two lower supports. The sample was removed from its packaging and placed centrally over the supports just prior to testing at 20C.

Typical plots:



Observations:
Once the trigger force is attained the force is seen to increase and the product begins to bend. The maximum force is presented as the resistance of the sample to bend and is related to the 'strength' of the sample. The distance at which this maximum force occurs highlights the degree of deformation that needs to be applied to the sample before bending is fully initiated and hence indicates flexibility.

Data Analysis:

☒Max Force

☒Peak Distance

Results

Sample	Mean Max. Force 'Strength' (+/-S.D.) (g)	Mean Distance at Flex (+/-S.D.) (mm)
A	307.1 +/- 41.9	1.2 +/- 0.08

Notes:

- Storage, packaging and handling of the sample before testing are considered variable conditions under which the samples are tested. These conditions should be identified and kept constant for comparison purposes.
- 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.