

Hair Gel Texture Analysis

Understanding the consistency and adhesiveness of hair gel is crucial for product development and user experience. A gel with the right firmness and consistency ensures easy dispensing from the container, smooth application, and proper hold. This analysis helps in formulating hair gels that balance these properties for both premium and budget versions.

Test Principle:

- This test evaluates the consistency and firmness of two types of hair gel (premium and budget) using a back extrusion test. It measures how easily the gel can be squeezed out and its resistance to separating from the probe.

Equipment:

- Instrument: CTX Texture Analyzer with a 5 kg load cell
- Accessories: Round Base Table (TA-RT-KIT), Back Extrusion Cell (TA-BEC)
- Software: Texture Pro

Settings:

- Test Type: Compression
- Pre-Test Speed: 1.0 mm/s
- Test Speed: 2.0 mm/s
- Post-Test Speed: 2.0 mm/s
- Target Distance: 25 mm
- Trigger Force: 10 g

Sample Preparation:

- Fill the back extrusion container with the hair gel to 75% capacity. The sample is stored and tested at 21°C.

Procedure:

1. Position the extrusion disc over the sample container.
2. Set the probe to start 30 mm above the sample.
3. Begin the test, compressing the gel to a depth of 25 mm.
4. Hold the container steady to prevent lifting during testing.



Observations:

Figure I: Load vs. Time graph shows the firmness of both premium and budget hair gels.

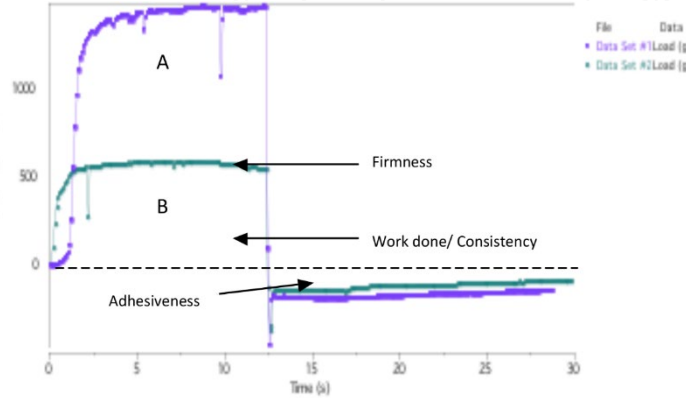


Figure I

Figure II: Load vs. Distance graph highlights the consistency and adhesive properties of the gels.

- Premium hair gel (Sample A) exhibited higher firmness, consistency, and adhesive force than the budget hair gel (Sample B).

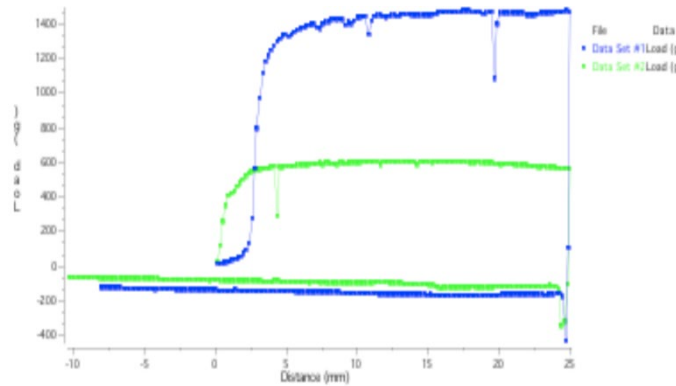


Figure II

Results:

Premium Hair Gel (Sample A):

- Higher firmness and consistency.
- Greater adhesive force, indicating more stickiness.

Budget Hair Gel (Sample B):

- Lower firmness and consistency.
- Less adhesive force, making it less sticky.

Conclusion:

This analysis provides critical data on hair gel firmness and adhesiveness, ensuring the product meets consumer expectations. It helps manufacturers optimize formulations for ease of use, hold, and application.