Production: GELATINE GEL

Objective: Determination of bloom strength of gelatin according to the International Standard (ISO 9665 Adhesives - Animal glues - Methods of sampling and testing.)

Type of action: Penetration test

Test mode settings:

Speed	Test mode	Trigger	Target	Hold
0.5 mm/s	Distance (c)	4 gf	4 mm	0 sec

Accessory:
φ 1/2 inch cylinder probe PP, Platform

Sample Preparation:
Place xg of gelatin into xml cold water (typically a 12.5% concentration w/v is made up). Stir with a stainless steel or glass rod, cover and allow to soak for 3 hours at a temperature no greater than 22C. After this time heat the container to 60C (but not exceeding) on a magnetic heater stirrer for approximately 15 minutes, ensuring that the gelatin is completely dissolved. Immediately pour the gelatin solution into standard bloom jars and cover after 2 minutes. Leave the bloom jars to condition for 17 hours in a water bath at 10C.

Test Set-Up:
After conditioning, place the bloom jars centrally under the standard probe and commence the penetration test.

Typical plots:
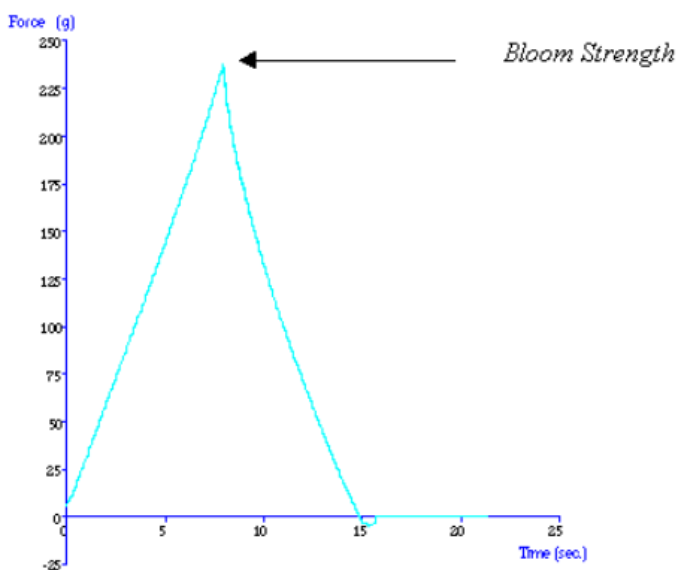
The above curve was produced from a 6.67% gelatin gel (i.e. 7.5g in 105ml of water tested at 10C.)

Observations:
After a trigger force of 4g is attained, the probe proceeds to penetrate into the gel to a depth of 4mm. At this depth the maximum force reading is obtained and translated as the 'Bloom Strength' (g) of the gel.

Data Analysis:
☒Max Force

Notes:

- The method described corresponds to the International Standard ISO 9665:1998(E) Adhesives - Animal glues - Methods of sampling and testing.

- This application study explains the testing and analysis of results. For more detailed sample preparation notes, the standard should undoubtedly be obtained and referred to.

- If the gel strength is greater than 400g Bloom, reduce the concentration of the gelatine solution to 6.67% (single Bloom).

- Should it be necessary to measure rupture force, gel brittleness/elasticity, this test (for the determination of Bloom Strength) can be adapted to continue penetration after 4mm to e.g. 15mm into the bloom jar. So long as the sample is prepared according to the standard and the Bloom value is taken from the curve at Distance =