

Production: GELATINE GEL

Objective: Determination of bloom strength as a means of monitoring effects of quality, concentration and processing methods of gelatin

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

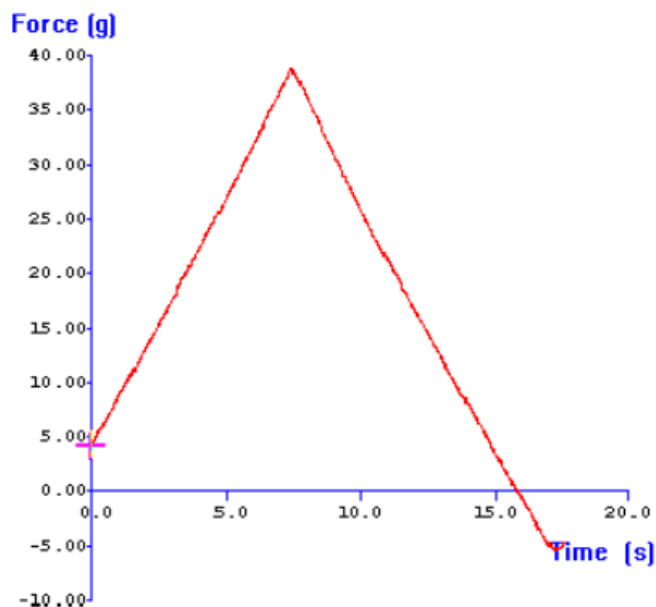
Sample Preparation:

Place xg of gelatine into xml cold water (typically a 6.67% 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 gelatine is completely dissolved. Immediately pour the gelatine solution into standard bloom jars and cover after 2 minutes. Leave the bloom jars to condition for 16 hours in a water bath at 10C (or at a selected controlled temperature that should be adhered to for subsequent comparative gel strength testing).

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% gelatine 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 British Standard Method for 'Sampling and testing gelatin' (BS757: 1975). 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.
- When attempting to optimize 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.
- 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 = 4mm the following may also be obtained.

