Application manual No. 107

Production: GELATIN GEL

Objective: Determination of gel strength (Bloom Value) of gelatin according to the Gelatin Manufacturers Institute of America (GMIA) testing standard

Type of action: Penetration test

Test mode settings:

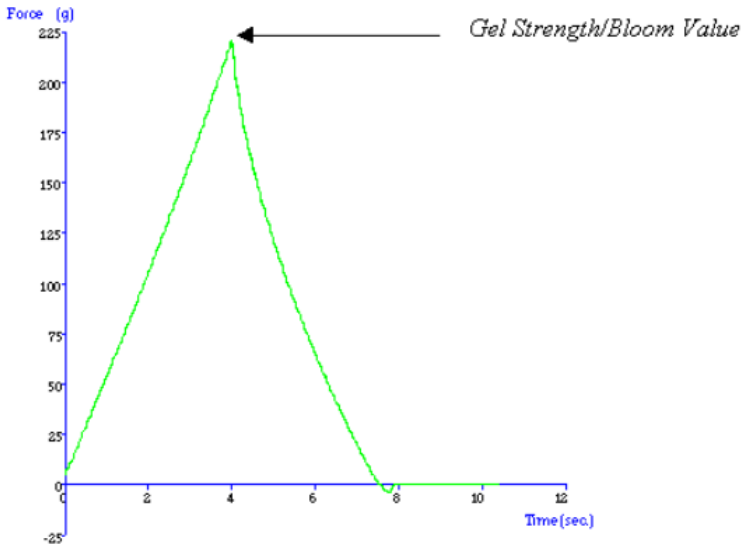
Speed	Test mode	Trigger	Target	Hold
1 mm/s	Distance (c)	5 gf	4 mm	0 sec

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

Sample Preparation:
A 6.67% concentration gelatin gel w/v is made up and poured into standard glass Bloom jars (150ml capacity). The filled Bloom jars are chilled in a water bath at 10C +/- 0.1C for 17 h +/- 1 h. For specific sample preparation details refer to the standard.

Test Set-Up:
After conditioning, the Bloom jars are removed from the water bath just prior to testing. The Bloom jar is positioned centrally under the standard probe and the penetration test is commenced.

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 5g 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 'Gel Strength/Bloom Value' (g) of the gelatin gel.

Data Analysis:
☒Max Force

Notes:

- The method described corresponds to the GMIA standard for Gelatin gel strength 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.
- Should it be necessary to measure rupture force, gel brittleness/elasticity, this test (for the determination of Gel Strength/Bloom Value) 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 Gel Strength value is taken from the curve at Distance = 4mm the following may also be obtained.