

## SPECIFICATION LIMITS FOR BLOOM (REPRODUCIBILITY OF BLOOM TESTING METHOD)

The Bloom test method for the determination of gel strength of gelatines is an empirical method that can not be traced back to an international standard as can be done, for example, for the measurement of viscosity.

Collaborative studies (ring tests) are therefore essential to obtain information on the accuracy of the procedure.

This is the reason that the gelatine industry has carried out ring tests for more than 20 years on a regular basis.

Statistical evaluation of these ring tests gives the following results:

	Reproducibility standard deviation SR	Arithmetical mean X	Relative standard deviation SR/X
2010	2.89	208.5	1.4 %
2011	3.26	207.5	1.6 %
2012	4.25	211.8	2.0 %
2013	4.47	207.7	2.2 %
2014	3.76	204.8	1.8 %
2015	3.03	204.9	1.5 %
2016	4.24	213.8	2.0 %
2017	3.34	205.1	1.6 %
2018	2.96	208.8	1.4 %
2019	3.63	209.3	1.7 %
2020	3,42	198,3	1.7 %
2021	3,83	198,8	1,9 %
2022	3,74	199,5	1,9 %
2023	4,33	200,1	2,2 %

The relative standard deviation (reproducibility coefficient of variation) equals the reproducibility standard deviation divided by the mean. The average result over the last years is in general less than 2.0 %. Thus, for a relative standard deviation of 2 %, the specification limits for Bloom (between gelatine manufacturer and customer) for a specific grade of gelatine should not fall below  $\pm 3 \times 2 \%$  from the specified value.

Examples:	Bloom	100 g	specification limit	$\pm 6$ g
		200 g		$\pm 12$ g
		300 g		$\pm 18$ g

The standard gelatines used in the ring test could be used as a source of certified reference material. Samples of these gelatines are available from the gelatine manufacturers.

Validation period: until 31 December 2024.

### GME

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