

**Standard (Pullulan)****INSPECTION CERTIFICATE**

Type : P-82  
Lot No. : 190101  
Material : Polysaccharide

Method	SEC				Static light scattering	
	Grade	Mp	Mw	Mn	Mw/Mn	Mass-average molar mass (g/mol)*
P-800	64.2x10 <sup>4</sup>	73.6x10 <sup>4</sup>	59.7x10 <sup>4</sup>	1.23	82.0x10 <sup>4</sup>	7.4x10 <sup>4</sup>
P-400	33.4x10 <sup>4</sup>	34.3x10 <sup>4</sup>	26.4x10 <sup>4</sup>	1.30	37.4x10 <sup>4</sup>	1.8x10 <sup>4</sup>
P-200	20.1x10 <sup>4</sup>	20.2x10 <sup>4</sup>	15.4x10 <sup>4</sup>	1.31	23.8x10 <sup>4</sup>	1.2x10 <sup>4</sup>
P-100	10.6x10 <sup>4</sup>	11.6x10 <sup>4</sup>	10.5x10 <sup>4</sup>	1.11	15.3x10 <sup>4</sup>	0.7x10 <sup>4</sup>
P-50	4.71x10 <sup>4</sup>	4.88x10 <sup>4</sup>	4.55x10 <sup>4</sup>	1.07	5.28x10 <sup>4</sup>	0.47x10 <sup>4</sup>
P-20	2.20x10 <sup>4</sup>	2.30x10 <sup>4</sup>	2.13x10 <sup>4</sup>	1.08	-	-
P-10	0.98x10 <sup>4</sup>	0.99x10 <sup>4</sup>	0.93x10 <sup>4</sup>	1.07	-	-
P-5	0.63x10 <sup>4</sup>	0.66x10 <sup>4</sup>	0.60x10 <sup>4</sup>	1.09	-	-

\* Measured by static light scattering method at National Institute of Advanced Industrial Science and Technology in Japan

\*\* The quoted uncertainty is the half-width of the expanded uncertainty interval calculated using a coverage factor  $k = 2$ , corresponding to an estimated confidence level of approximately 95 %.

- Unmeasured

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