

# Soft Polymer Beads

Anti Abrasion  
Film Back Coating



Acryl beads  
Poly-dispersed  
Yellow Index: 4.5 Max  
Reflective Index: 1.49

Grade	Descriptions	Particle Size (μm)	
		D50	D100
HISOFT-80	<b>Good Softness Similar with Nylon</b>	7.5 ± 1.5	20
HISOFT-200		17.5 ± 2.5	45
HISOFT-300		30 ± 3	100
HISOFT-400		40 ± 3	115
HISOFT-500		50 ± 3	120

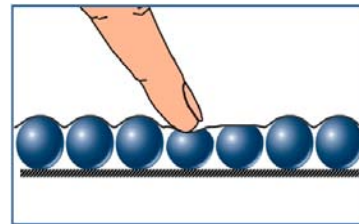
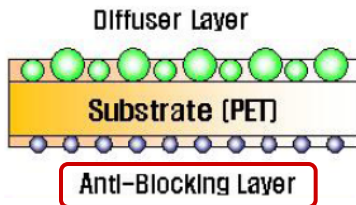
**H Grade**

HISOFT-80H	<b>Excellent Softness Similar with Urethane</b>	7.5 ± 1.5	20
HISOFT-200H		17.5 ± 2.5	45
HISOFT-300H		30 ± 3	100
HISOFT-400H		40 ± 3	115
HISOFT-500H		50 ± 3	120

Best recommend for

- (1) Back Coating of Light Diffusion Film
- (2) Smooth feel texture of Paint & Coating

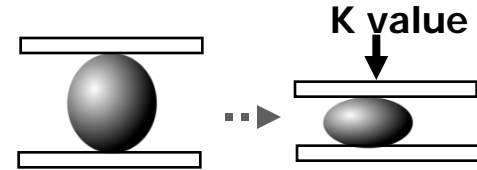
**Less-Scratch**



The lower K value, the softer polymer bead, the less abrasive

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## K value: Measurement of Softness



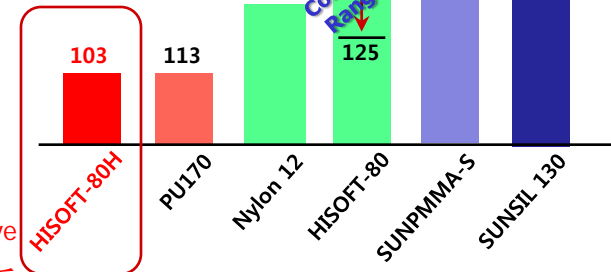
$$K = (3/2^{1/2})(F)(S^{-3/2})(R^{-1/2})$$

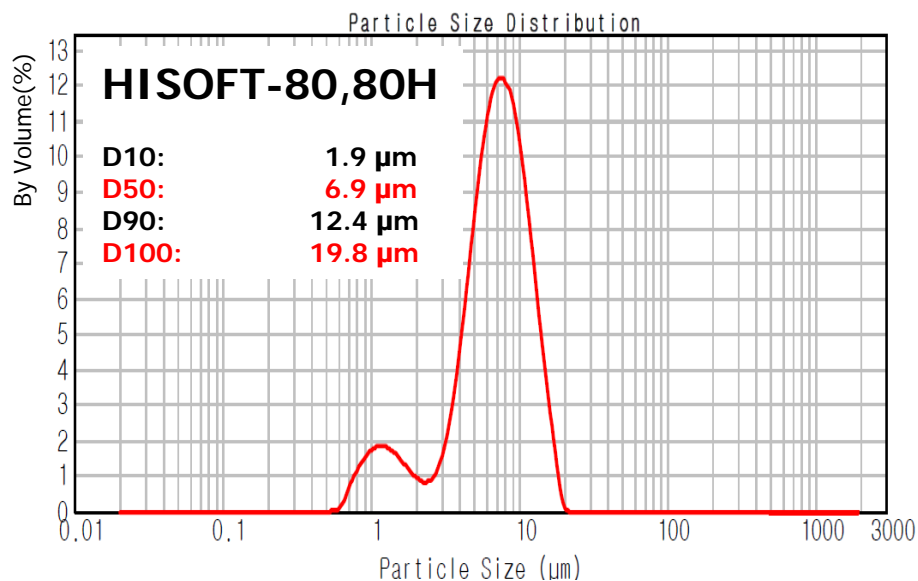
S: Sample displacement  
R: Sample radius

One particle of each powder type was exposed to compression. Pressure necessary for 10% deformation of the particle was measured. (Measuring Tool: Shimadzu Micro Compression Testing Machine MCTM-500)



The lower K value, the softer



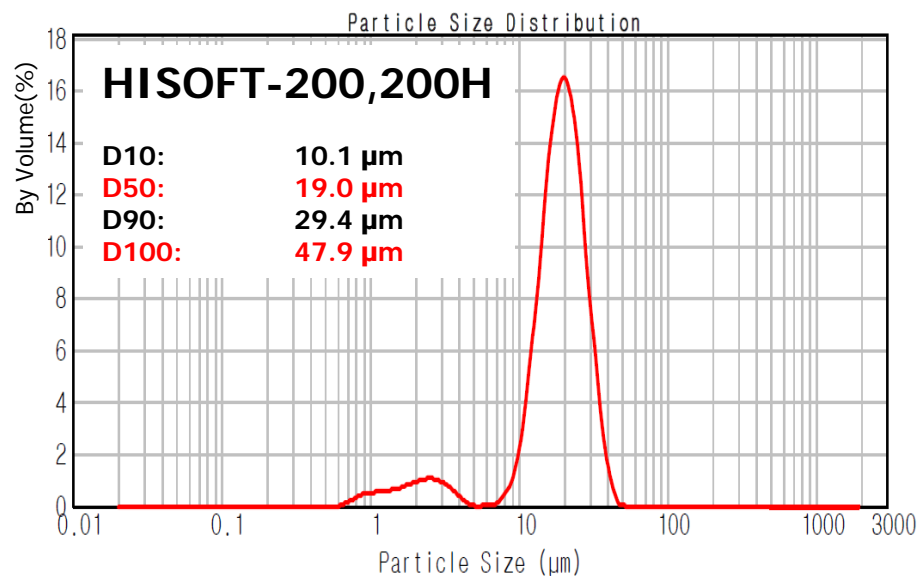


Size (μm)	Volume In %
0.182	0.00
0.209	0.00
0.240	0.00
0.275	0.00
0.316	0.00
0.363	0.00
0.417	0.00
0.479	0.00
0.550	0.05
0.631	0.38
0.724	0.95
0.832	1.31
0.955	1.57
1.096	1.65
1.259	1.57
1.445	1.36
1.660	1.09
1.905	0.00

Size (μm)	Volume In %
1.905	0.85
2.188	0.74
2.512	0.90
2.884	1.49
3.311	2.63
3.802	4.31
4.365	6.24
5.000	8.52
5.754	10.01
6.607	10.90
7.586	10.93
8.710	10.09
10.000	8.50
11.482	6.48
13.183	4.33
15.136	2.44
17.378	0.70
19.953	0.00

Size (μm)	Volume In %
19.953	0.00
20.000	0.00
22.909	0.00
25.000	0.00
26.303	0.00
28.000	0.00
30.200	0.00
34.674	0.00
35.000	0.00
38.000	0.00
39.000	0.00
40.000	0.00
45.709	0.00
52.481	0.00
57.000	0.00
60.000	0.00
69.183	0.00
79.433	0.00

D100

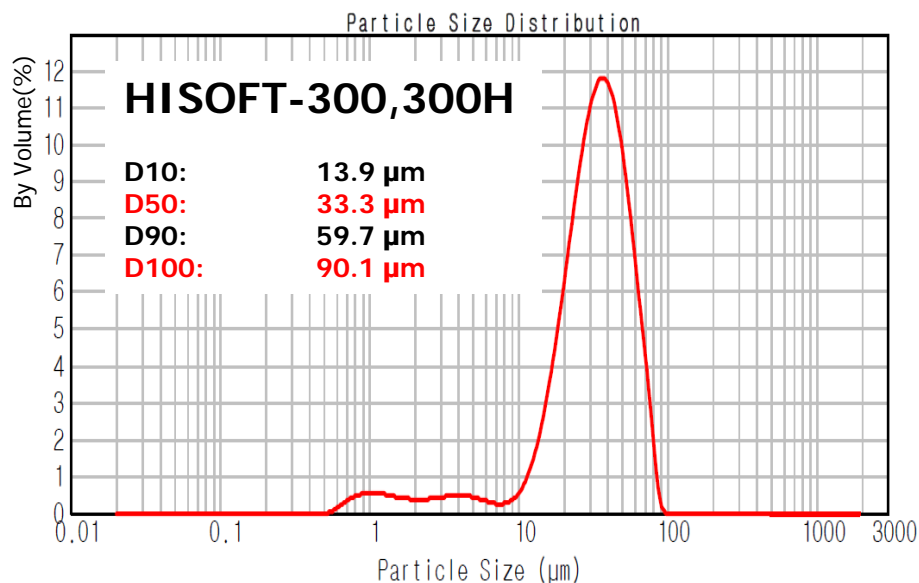


Size (μm)	Volume In %
0.182	0.00
0.209	0.00
0.240	0.00
0.275	0.00
0.316	0.00
0.363	0.00
0.417	0.00
0.479	0.00
0.550	0.00
0.631	0.10
0.724	0.24
0.832	0.40
0.955	0.46
1.096	0.50
1.259	0.54
1.445	0.61
1.660	0.72
1.905	0.00

Size (μm)	Volume In %
1.905	0.84
2.188	0.93
2.512	0.94
2.884	0.82
3.311	0.60
3.802	0.31
4.365	0.06
5.000	0.00
5.754	0.00
6.607	0.07
7.586	0.40
8.710	1.26
10.000	3.03
11.482	5.93
13.183	9.09
15.136	12.63
17.378	14.63
19.953	0.00

Size (μm)	Volume In %
19.953	0.26
20.000	14.41
22.909	8.37
25.000	4.36
26.303	4.60
28.000	4.20
30.200	5.55
34.674	0.25
35.000	1.58
38.000	0.33
39.000	0.27
40.000	0.66
45.709	0.03
52.481	0.00
57.000	0.00
60.000	0.00
69.183	0.00
79.433	0.00

D100



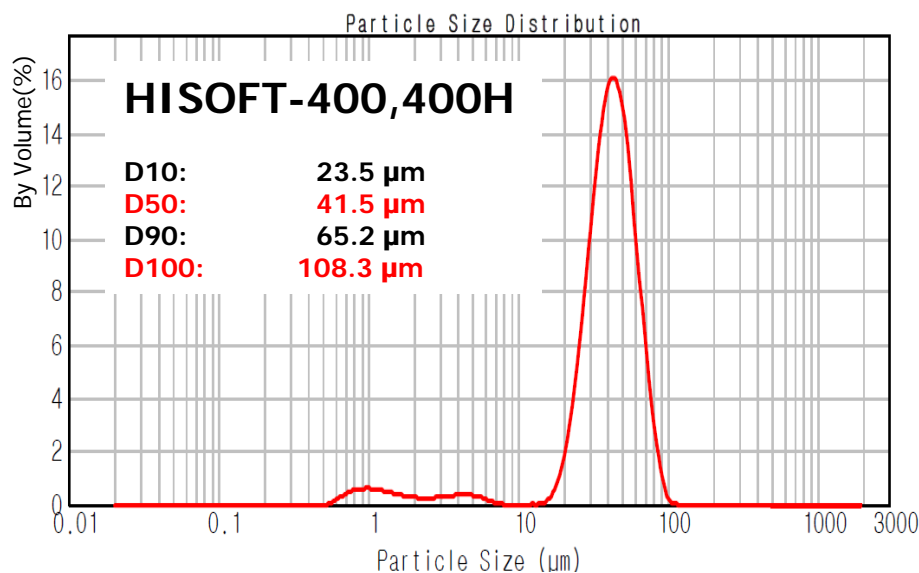
Size (μm)	Volume In %
0.182	0.00
0.209	0.00
0.240	0.00
0.275	0.00
0.316	0.00
0.363	0.00
0.417	0.00
0.479	0.00
0.550	0.10
0.631	0.24
0.724	0.39
0.832	0.45
0.955	0.48
1.096	0.47
1.259	0.43
1.445	0.38
1.660	0.34
1.905	0.34

Size (μm)	Volume In %
1.905	0.33
2.188	0.33
2.512	0.35
2.884	0.38
3.311	0.41
3.802	0.42
4.365	0.40
5.000	0.36
5.754	0.28
6.607	0.22
7.586	0.23
8.710	0.36
10.000	0.67
11.482	1.22
13.183	2.08
15.136	3.24
17.378	4.68
19.953	4.68

Size (μm)	Volume In %
19.953	0.09
20.000	6.19
22.909	4.82
25.000	3.09
26.303	4.06
28.000	5.26
30.200	10.30
34.674	0.72
35.000	6.34
38.000	2.00
39.000	1.94
40.000	9.86
45.709	9.08
52.481	4.64
57.000	2.53
60.000	5.53
69.183	3.32
79.433	3.32

Size (μm)	Volume In %
79.433	0.97
91.201	0.00
104.713	0.00
120.000	0.00
138.038	0.00
158.489	0.00
181.970	0.00
208.930	0.00
239.883	0.00
275.423	0.00
316.228	0.00
363.078	0.00
416.869	0.00
478.630	0.00
549.541	0.00
630.957	0.00
724.436	0.00
831.764	0.00

D100



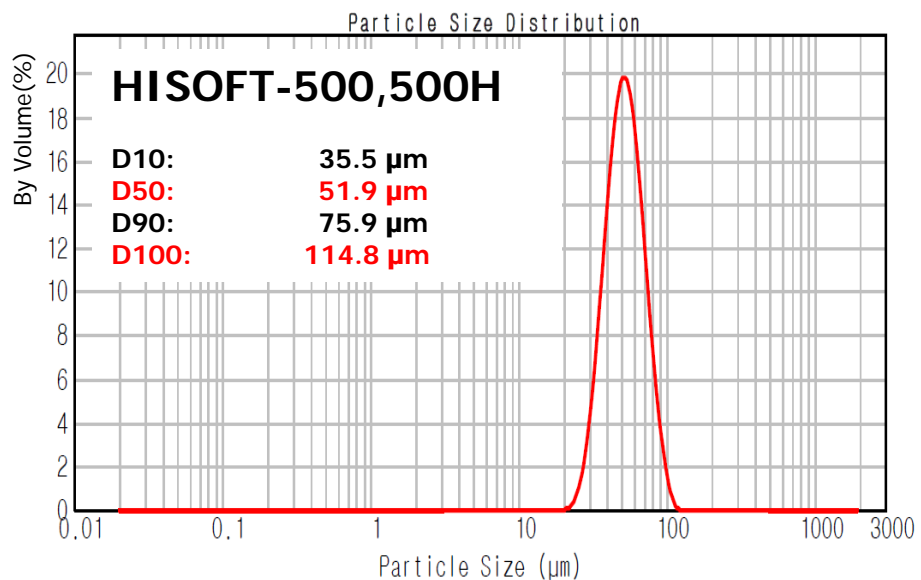
Size (μm)	Volume In %
0.182	0.00
0.209	0.00
0.240	0.00
0.275	0.00
0.316	0.00
0.363	0.00
0.417	0.00
0.479	0.00
0.550	0.00
0.631	0.14
0.724	0.30
0.832	0.47
0.955	0.52
1.096	0.53
1.259	0.49
1.445	0.42
1.660	0.35
1.905	0.28

Size (μm)	Volume In %
1.905	0.24
2.188	0.22
2.512	0.22
2.884	0.22
3.311	0.25
3.802	0.29
4.365	0.32
5.000	0.32
5.754	0.28
6.607	0.18
7.586	0.05
8.710	0.00
10.000	0.00
11.482	0.00
13.183	0.00
15.136	0.02
17.378	0.23
19.953	0.92

Size (μm)	Volume In %
19.953	0.03
20.000	2.28
22.909	2.58
25.000	2.00
26.303	3.02
28.000	4.55
30.200	10.78
34.674	0.84
35.000	7.81
38.000	2.62
39.000	2.60
40.000	14.03
45.709	13.75
52.481	7.24
57.000	3.83
60.000	7.99
69.183	4.60
79.433	4.60

Size (μm)	Volume In %
79.433	2.01
91.201	0.38
104.713	0.02
120.000	0.00
138.038	0.00
158.489	0.00
181.970	0.00
208.930	0.00
239.883	0.00
275.423	0.00
316.228	0.00
363.078	0.00
416.869	0.00
478.630	0.00
549.541	0.00
630.957	0.00
724.436	0.00
831.764	0.00

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Size (μm)	Volume In %
19.953	0.00
20.000	0.03
22.909	0.24
25.000	0.33
26.303	0.74
28.000	1.58
30.200	5.66
34.674	0.54
35.000	5.70
38.000	2.16
39.000	2.28
40.000	14.41
45.709	17.64
52.481	10.64
57.000	6.27
60.000	14.75
69.183	9.58
79.433	0.00

Size (μm)	Volume In %
79.433	5.11
91.201	2.02
104.713	0.31
120.000	0.00
138.038	0.00
158.489	0.00
181.970	0.00
208.930	0.00
239.883	0.00
275.423	0.00
316.228	0.00
363.078	0.00
416.869	0.00
478.630	0.00
549.541	0.00
630.957	0.00
724.436	0.00
831.764	0.00

**D100**