5.8.2 Dimensions of Hard Cellulose Capsule Shells

Hard Cellulose Capsule Shells normally used for the incorporation of medicaments are cylindrical in shape but other shapes are also formed for special requirements. The shells of the capsules consist of two prefabricated cylindrical sections, one end of which is rounded and the other is open. The shells are of various sizes, usually designated by different numbers, 5 being the smallest and 000 the largest. The dimensions of hard cellulose capsule shells tend to vary with the content of moisture in them and the conditions under which they are stored or to which they are exposed. The chemical composition of the shells also influences the extent to which exposure to heat and moisture affects the dimensions. Nevertheless, the average conventional dimensions (outside diameter, length and wall thickness – single / double) of the capsule shells of sizes 000 to 5 are provided in the table 1, 2 & 3 for the guidance of users. It should be noted that any measurement of reasonable accuracy can be made only under controlled conditions of temperature and humidity. A temperature between 20° and 25° and a relative humidity between 45 per cent and 55 per cent are recommended.

Table 1- Average Outside Diameter

Size	Cap (mm)	Body (mm)
000	9.91 – 10.03	9.56 – 9.68
00	8.49 – 8.61	8.15 – 8.27
0	7.60 – 7.72	7.26 – 7.38
1	6.87 – 6.99	6.55 – 6.67
2	6.31– 6.43	6.02 – 6.14
3	5.79 – 5.91	5.51 – 5.63
4	5.27 – 5.39	5.00 – 5.12
5	4.85 – 4.97	4.59 – 4.71

Table 2- Average Length

Size	Cap (mm)	Body (mm)
000	12.5 – 13.5	21.7 – 22.7
00	11.3 – 12.3	19.7 – 20.7
0	10.2 – 11.2	18.0 – 19.0
1	9.3 – 10.3	16.1 – 17.1
2	8.5 – 9.5	14.7 – 15.7
3	7.6 – 8.6	13.1 – 14.1
4	6.7 – 7.7	11.7 – 12.7
5	5.7 – 6.7	8.8 – 9.8

Average for special lengths may be decided upon mutually between the manufacturer of the Hard Cellulose Capsule Shells and the user.

Table 3 - Average Wall Thickness

Size	Cap (mm)	Body (mm)
000	0.095 - 0.125	0.095 - 0.125
00	0.095 - 0.125	0.095 - 0.125
0	0.095 - 0.125	0.095 - 0.125
1	0.090 - 0.120	0.090 - 0.120
2	0.090 - 0.120	0.090 - 0.120
3	0.085 - 0.115	0.085 - 0.115
4	0.082 - 0.112	0.082 - 0.112
5	0.082 - 0.112	0.082 - 0.112

Note: Multiply above values by 2 to arrive at norms for double wall thickness