

Technical Information

Gauge Index

When selecting a needle gauge it is important to keep in mind the volume of the syringe and the dead volume of the needle. For example, it will be very difficult to prime a 10 µL syringe if the dead volume in the needle is greater than 10 µL. Refer to the gauge index to choose a needle gauge with an appropriate µL/inch before selecting a needle. Select the minimum length that allows you to carry out your application comfortably.

Note: The 's' on a 22s needle represents a smaller I.D. (inner diameter) for the needle and a thicker needle wall for better durability. For example, a 26 gauge needle has an O.D. (outer diameter) of 0.46 mm and an I.D. of 0.26 mm while the 26s gauge needle has an O.D. of 0.47 mm and an I.D. of 0.13 mm. The 26s has half the I.D. of the 26 gauge needle. Also, the difference in the wall thickness nearly doubles with 26s gauge having a thickness of 0.18 mm while the 26 gauge is only 0.10 mm.

Gauge	Nominal O.D.		Nominal I.D.		Wall Thickness		Volume
	Inch	mm*	Inch	mm*	Inch	mm*	µL/Inch
34	0.0060 - 0.0065	0.159	0.0015 - 0.0025	0.051	0.0020	0.051	0.052
33	0.0080 - 0.0085	0.210	0.0035 - 0.0050	0.108	0.0020	0.051	0.233
32	0.0090 - 0.0095	0.235	0.0035 - 0.0050	0.108	0.0025	0.064	0.233
31	0.0100 - 0.0105	0.261	0.0045 - 0.0060	0.133	0.0025	0.064	0.353
30	0.0120 - 0.0125	0.312	0.0055 - 0.0070	0.159	0.0030	0.076	0.504
29	0.0130 - 0.0135	0.337	0.0065 - 0.0080	0.184	0.0030	0.076	0.675
28	0.0140 - 0.0145	0.362	0.0065 - 0.0080	0.184	0.0035	0.089	0.675
27	0.0160 - 0.0165	0.413	0.0075 - 0.0090	0.210	0.0040	0.102	0.876
26s	0.0184 - 0.0189	0.474	0.0045 - 0.0055	0.127	0.0070	0.178	0.322
26	0.0180 - 0.0185	0.464	0.0095 - 0.0110	0.260	0.0040	0.102	1.349
25s	0.0200 - 0.0205	0.515	0.0055 - 0.0065	0.153	0.0070	0.178	0.464
25	0.0200 - 0.0205	0.515	0.0095 - 0.0110	0.260	0.0050	0.127	1.349
24	0.0220 - 0.0225	0.566	0.0115 - 0.0130	0.311	0.0050	0.127	1.930
23s	0.0250 - 0.0255	0.642	0.0040 - 0.0051	0.116	0.0105	0.267	0.268
23	0.0250 - 0.0255	0.642	0.0125 - 0.0140	0.337	0.0060	0.152	2.266
22s	0.0280 - 0.0285	0.718	0.0055 - 0.0077	0.168	0.0110	0.279	0.563
22	0.0280 - 0.0285	0.718	0.0155 - 0.0170	0.413	0.0060	0.152	3.403
21	0.0320 - 0.0325	0.819	0.0195 - 0.0210	0.514	0.0060	0.152	5.271
20	0.0355 - 0.0360	0.908	0.0230 - 0.0245	0.603	0.0060	0.152	7.255
19	0.0415 - 0.0425	1.067	0.0255 - 0.0285	0.686	0.0075	0.191	9.389
18	0.0495 - 0.0505	1.270	0.0315 - 0.0345	0.838	0.0085	0.216	14.011
17	0.0575 - 0.0585	1.473	0.0405 - 0.0435	1.067	0.0080	0.203	22.715
16	0.0645 - 0.0655	1.651	0.0455 - 0.0485	1.194	0.0090	0.229	28.444
15	0.0715 - 0.0725	1.829	0.0525 - 0.0555	1.372	0.0090	0.229	37.529
14	0.0820 - 0.0840	2.109	0.0610 - 0.0650	1.600	0.0100	0.254	51.076
13	0.0940 - 0.0960	2.413	0.0690 - 0.0730	1.804	0.0120	0.305	64.895
12	0.1080 - 0.110	2.769	0.0830 - 0.0870	2.159	0.0120	0.305	93.000
11	0.1190 - 0.1210	3.048	0.0920 - 0.0960	2.388	0.0130	0.330	113.728
10	0.1330 - 0.1350	3.404	0.1040 - 0.1080	2.693	0.0140	0.356	144.641

*mm are nominal