

**ramé-hart instrument co.**  
**Guide to Dispensing Needles (Mar 2018)**

Gauge	Coaxial, triaxial, quadaxial component	Standard 304 SS (p/n 100-10-12-xx)	Inverted 304 SS (p/n 100-10-13-xx)	Disposable 304 SS (p/n 100-10-15-xx)	Extra-long 4" 304 SS (100-26-NE-XX)	Outside Diameter (OD) inches*	Outside Diameter (OD) mm*	Inside Diameter (ID) inches*	Inside Diameter (ID) mm*	Wall Thickness inches*	Wall Thickness mm*	PTFE Teflon (p/n 100-10-17-xx)	PTFE OD*	PTFE ID*
5	✓	✓	SO			0.219	5.56	0.189	4.80	0.015	0.381			
6	✓	✓	SO			0.203	5.16	0.173	4.39	0.015	0.381			
7	✓	✓	SO			0.180	4.57	0.150	3.81	0.015	0.381			
8	✓	✓	SO			0.165	4.19	0.135	3.43	0.015	0.381			
9	✓	✓	SO			0.148	3.76	0.118	3.00	0.015	0.381			
10	✓	✓	✓		✓	0.134	3.40	0.106	2.69	0.014	0.356			
11	✓	✓	✓		✓	0.120	3.05	0.094	2.39	0.013	0.330			
12	✓	✓	✓		✓	0.109	2.77	0.085	2.16	0.012	0.305			
13	✓	✓	✓			0.095	2.41	0.071	1.80	0.012	0.305			
14	✓	✓	✓	✓	✓	0.083	2.11	0.063	1.60	0.010	0.254	✓	0.082	0.066
15	✓	✓		SO		0.072	1.83	0.054	1.37	0.009	0.229			
16	✓	✓	✓	✓	✓	0.065	1.65	0.047	1.19	0.009	0.229	✓	0.065	0.053
17	✓	✓				0.058	1.47	0.042	1.07	0.008	0.203			
18	✓	✓	✓	✓	✓	0.049	1.24	0.033	0.84	0.008	0.203	✓	0.054	0.042
19	✓	✓	✓	SO		0.042	1.07	0.027	0.69	0.0075	0.191			
20	✓	✓	✓	✓	✓	0.035	0.889	0.023	0.584	0.0060	0.152	✓	0.046	0.034
21	✓	✓		SO		0.032	0.813	0.020	0.508	0.0060	0.152			
22	✓	✓	✓	✓	✓	<b>0.028</b>	<b>0.711</b>	<b>0.016</b>	<b>0.406</b>	<b>0.0060</b>	<b>0.152</b>	✓	<b>0.040</b>	<b>0.028</b>
23	✓	✓	✓	SO		0.025	0.635	0.013	0.330	0.0060	0.152			
24	✓	✓	✓		✓	0.022	0.559	0.012	0.305	0.0050	0.127	✓	0.034	0.022
25	✓	✓		✓		0.020	0.508	0.010	0.254	0.0050	0.127			
26	✓	✓	✓	SO	✓	0.018	0.457	0.010	0.254	0.0040	0.102			
27	✓	✓		✓		0.016	0.406	0.008	0.203	0.0040	0.102			
28	✓	✓	✓		✓	0.014	0.356	0.007	0.178	0.0035	0.089			
29		✓				0.013	0.330	0.007	0.178	0.0030	0.076			
30		✓				0.0120	0.305	0.0055	0.140	0.0033	0.083	✓	0.024	0.012
31		SO				0.0100	0.254	0.0045	0.114	0.0025	0.064			
32		✓				0.0090	0.229	0.0035	0.089	0.0028	0.070			
33		✓				0.0080	0.203	0.0035	0.089	0.0023	0.057			

Key: ✓, in stock; SO, Special Order (3-5 days); 22 gauge is standard size; \*dimensions in inches

**Standard Type 304 Stainless Steel Needle p/n 100-10-12-xx** replace xx with actual gauge; 22g is standard size; available in all gauges from 05 to 33; all sizes are kept in stock 2" long.

**Inverted Type 304 Stainless Steel Needle p/n 100-10-13-xx** replace xx with actual gauge; 22g is standard size; available in most gauges from 10 to 28, see chart for stock sizes, for captive bubble, inverted pendant drop, sessile and other liquid/liquid studies with environmental fixture/chamber.

**Disposable Type 304 Stainless Steel Needle p/n 100-10-15-xx** replace xx with actual gauge; 22 gauge is standard and in stock (other sizes, see chart, 2-3 days), 1.5" long

**Extra-long Type 304 Stainless Steel Needle p/n 100-26-NE-xx** replace xx with actual gauge; 22g is standard, 4" long

**PTFE Teflon Needle p/n 100-10-17-xx** replace xx with gauge, available in 14, 16, 18, 20, and 22 gauge, 22g is standard size, PTFE is flexible and can be cut to length.

**Note** All needles above use Luer Lock and will work on the ramé-hart Microsyringe p/n 100-10-20. For use with Automated Dispensing System, use adapter p/n 100-22-37.