

Table 10A

Factor k_2 for Two-sided Normal Tolerance limits

100 γ is the confidence level in %,

100(1- α) is the percentage of population included between tolerance limits

n	100 γ =90%			100 γ =95%			100 γ =99%		
	100(1- α)			100(1- α)			100(1- α)		
	90%	95%	99%	90%	95%	99%	90%	95%	99%
2	15.98	18.8	24.17	32.02	37.67	48.43	160.2	188.5	242.3
3	5.847	6.919	8.974	8.38	9.916	12.86	18.93	22.4	29.06
4	4.166	4.943	6.44	5.369	6.37	8.299	9.398	11.15	14.53
5	3.494	4.152	5.423	4.275	5.079	6.634	6.612	7.855	10.26
6	3.131	3.723	4.87	3.712	4.414	5.775	5.337	6.345	8.301
7	2.902	3.452	4.521	3.369	4.007	5.248	4.613	5.448	7.187
8	2.743	3.264	4.278	3.136	3.732	4.891	4.147	4.936	6.468
9	2.626	3.125	4.098	2.967	3.532	4.631	3.822	4.55	5.966
10	2.535	3.018	3.959	2.829	3.379	4.433	3.582	4.265	5.594
11	2.463	2.933	3.849	2.737	3.259	4.277	3.397	4.045	5.308
12	2.404	2.863	3.758	2.655	3.162	4.15	3.25	3.87	5.079
13	2.355	2.805	3.682	2.587	3.081	4.044	3.13	3.727	4.893
14	2.314	2.756	3.618	2.529	3.012	3.955	3.029	3.608	4.737
15	2.278	2.713	3.562	2.48	2.954	3.878	2.945	3.507	4.605
16	2.246	2.676	3.514	2.437	2.903	3.812	2.872	3.421	4.492
17	2.219	2.643	3.471	2.4	2.858	3.754	2.808	3.345	4.393
18	2.194	2.614	3.433	2.366	2.819	3.702	2.753	3.279	4.307
19	2.172	2.588	3.399	2.337	2.784	3.656	2.703	3.221	4.23
20	2.152	2.564	3.368	2.31	2.752	3.615	2.659	3.168	4.161
21	2.135	2.543	3.34	2.286	2.723	3.577	2.62	3.121	4.1
22	2.118	2.524	3.315	2.264	2.697	3.543	2.584	3.078	4.044
23	2.103	2.506	3.292	2.244	2.673	3.512	2.551	3.04	3.993
24	2.089	2.489	3.27	2.225	2.651	3.483	2.522	3.004	3.947
25	2.077	2.474	3.251	2.208	2.631	3.457	2.494	2.972	3.904
26	2.065	2.46	3.232	2.193	2.612	3.432	2.469	2.941	3.865
27	2.054	2.447	3.215	2.178	2.595	3.409	2.446	2.914	3.828
28	2.044	2.435	3.199	2.164	2.579	3.388	2.424	2.888	3.794
29	2.034	2.424	3.184	2.152	2.554	3.368	2.404	2.864	3.763
30	2.025	2.413	3.17	2.14	2.549	3.35	2.385	2.841	3.733
35	1.988	2.368	3.112	2.09	2.49	3.272	2.306	2.748	3.611
40	1.959	2.334	3.066	2.052	2.445	3.213	2.247	2.677	3.518
50	1.916	2.284	3.001	1.996	2.379	3.126	2.162	2.576	3.385
60	1.887	2.248	2.955	1.958	2.333	3.066	2.103	2.506	3.293
80	1.848	2.202	2.894	1.907	2.272	2.986	2.026	2.414	3.173
100	1.822	2.172	2.854	1.874	2.233	2.934	1.977	2.355	3.096
200	1.764	2.102	2.762	1.798	2.143	2.816	1.865	2.222	2.921
500	1.717	2.046	2.689	1.737	2.07	2.721	1.777	2.117	2.783
1000	1.695	2.019	2.654	1.709	2.036	2.676	1.736	2.068	2.718
∞	1.645	1.96	2.576	1.645	1.96	2.576	1.645	1.96	2.576

(Reference Introduction to SQC by Montgomery)

Table 10B

Factor k_1 for One-sided Normal Tolerance limits

100 γ is the confidence level in %,

100(1- α) is the percentage of population below (or above) tolerance limits

n	100 γ =90%			100 γ =95%			100 γ =99%		
	100(1- α)			100(1- α)			100(1- α)		
	90%	95%	99%	90%	95%	99%	90%	95%	99%
2	NA	NA	NA	20.58	26.26	37.09	103	131.4	185.6
3	4.258	5.31	7.34	6.156	7.656	10.55	14	17.17	23.9
4	3.187	3.957	5.437	4.162	5.144	7.042	7.38	9.083	12.39
5	2.742	3.4	4.666	3.407	4.203	5.741	5.362	6.578	8.939
6	2.494	3.091	4.242	3.006	3.708	5.062	4.411	5.406	7.335
7	2.333	2.894	3.972	2.756	3.4	4.642	3.856	4.728	6.412
8	2.219	2.755	3.783	2.582	3.187	4.354	3.497	4.285	5.812
9	2.133	2.649	3.641	2.454	3.031	4.143	3.241	3.972	5.389
10	2.065	2.568	3.532	2.355	2.911	3.981	3.048	3.738	5.074
11	2.012	2.503	3.444	2.275	2.815	3.852	2.898	3.556	4.829
12	1.966	2.448	3.371	2.21	2.736	3.747	2.773	3.41	4.633
13	1.928	2.403	3.31	2.155	2.671	3.659	2.677	3.29	4.472
14	1.895	2.363	3.257	2.109	2.615	3.585	2.593	3.189	4.337
15	1.866	2.329	3.212	2.068	2.566	3.52	2.522	3.102	4.222
16	1.842	2.299	3.172	2.033	2.524	3.464	2.46	3.028	4.123
17	1.82	2.272	3.136	2.002	2.486	3.414	2.405	2.963	4.037
18	1.8	2.249	3.106	1.974	2.453	3.37	2.357	2.905	3.96
19	1.781	2.228	3.078	1.949	2.423	3.331	2.314	2.854	3.892
20	1.765	2.208	3.052	1.926	2.396	3.295	2.276	2.808	3.832
21	1.75	2.19	3.028	1.905	2.371	3.262	2.241	2.768	3.776
22	1.736	2.174	3.007	1.887	2.35	3.233	2.208	2.729	3.727
23	1.724	2.159	2.987	1.869	2.329	3.206	2.179	2.693	3.68
24	1.712	2.145	2.969	1.853	2.309	3.181	2.154	2.663	3.638
25	1.702	2.132	2.952	1.838	2.292	3.158	2.129	2.633	3.601
30	1.657	2.08	2.884	1.777	2.22	3.064	2.03	2.516	3.447
35	1.623	2.041	2.833	1.732	2.167	2.995	1.957	2.43	3.334
40	1.598	2.01	2.793	1.697	2.126	2.941	1.902	2.364	3.249
50	1.56	1.965	2.735	1.646	2.065	2.863	1.821	2.296	3.125
60	NA	NA	NA	1.609	2.022	2.807	1.764	2.202	3.038
80	NA	NA	NA	1.559	1.965	2.733	1.688	2.114	2.924
100	NA	NA	NA	1.527	1.927	2.684	1.639	2.056	2.85
200	NA	NA	NA	1.45	1.837	2.57	1.524	1.923	2.679

(Reference Introduction to SQC by Montgomery)