Cyanate Ester PCB Material

Recommended Drill Series: 100, 150, 430, 460, 480

Drill Size	Diameter *(inch)*	Feed *(inch/min)*	Speed *(k-rpm)*	Retract *(inch/min)*	Z-Axis Offset *(inches)*	Max Hits	Chipload *(mm/rev)*	SFM
0.10mm	0.0040	20	120	200	-0.011	400	0.17	126
0.13mm	0.0050	24	120	300	-0.011	400	0.20	157
0.15mm	0.0059	28	120	300	-0.011	400	0.23	185
#96	0.0063	30	120	400	-0.011	400	0.25	198
#95	0.0067	32	120	400	-0.012	400	0.27	210
#94	0.0071	34	120	500	-0.012	400	0.28	223
#93	0.0075	36	120	500	-0.012	400	0.30	236
#92	0.0079	40	120	500	-0.012	400	0.33	248
#91	0.0083	42	120	600	-0.012	400	0.35	261
#90	0.0087	44	120	600	-0.012	400	0.37	273
#89	0.0091	48	120	700	-0.012	400	0.40	286
#88	0.0095	50	120	700	-0.012	400	0.42	298
0.25mm	0.0098	52	120	800	-0.012	400	0.43	308
#87	0.0100	52	120	800	-0.012	400	0.43	314
#86	0.0105	54	120	800	-0.012	400	0.45	330
#85	0.0110	56	120	900	-0.013	400	0.47	345
#84	0.0115	58	120	900	-0.013	400	0.48	361
0.30mm	0.0118	60	117	1000	-0.013	400	0.51	360
#83	0.0120	60	115	1000	-0.013	400	0.52	360
#82	0.0125	64	110	1000	-0.013	400	0.58	360
#81	0.0130	67	106	1000	-0.013	400	0.63	360
#80	0.0135	70	102	1000	-0.013	600	0.69	360
0.35mm	0.0138	72	100	1000	-0.013	600	0.72	360
#79	0.0145	75	95	1000	-0.013	600	0.79	360
1/64	0.0156	78	88	1000	-0.014	600	0.88	360
0.40mm	0.0158	78	87	1000	-0.014	600	0.90	360
#78	0.0160	80	86	1000	-0.014	600	0.93	360
0.45mm	0.0177	83	78	1000	-0.014	600	1.07	360
#77	0.0180	84	76	1000	-0.014	600	1.10	360
0.50mm	0.0197	86	70	1000	-0.015	600	1.23	360
#76	0.0200	86	69	1000	-0.015	600	1.25	360
#75	0.0210	88	66	1000	-0.015	600	1.34	360
0.55mm	0.0217	90	63	1000	-0.015	600	1.42	360
#74	0.0225	92	61	1000	-0.015	600	1.50	360
0.60mm	0.0236	93	58	1000	-0.016	600	1.60	360
#73	0.0240	94	57	1000	-0.016	600	1.64	360
#72	0.0250	92	55	1000	-0.016	600	1.67	360
0.65mm	0.0256	91	54	1000	-0.016	600	1.69	360
#71	0.0260	90	53	1000	-0.016	600	1.70	360
0.70mm	0.0276	88	50	1000	-0.016	600	1.76	360
#70	0.0280	87	49	1000	-0.017	600	1.78	360
#69	0.0292	86	47	1000	-0.017	600	1.83	360
0.75mm	0.0295	86	47	1000	-0.017	600	1.83	360
#68	0.0310	84	44	1000	-0.017	800	1.91	360
1/32	0.0312	84	44	1000	-0.017	800	1.91	360
0.80mm	0.0315	84	44	1000	-0.017	800	1.91	360
#67	0.0320	83	43	1000	-0.017	800	1.93	360
#66	0.0330	82	42	1000	-0.018	800	1.95	360
0.85mm	0.0335	82	41	1000	-0.018	800	2.00	360
#65	0.0350	78	39	1000	-0.018	800	2.00	360
0.90mm	0.0354	78	39	1000	-0.018	800	2.00	360
#64	0.0360	76	38	1000	-0.018	800	2.00	360
#63	0.0370	74	37	1000	-0.019	800	2.00	360
0.95mm	0.0374	74	37	1000	-0.019	800	2.00	360
#62	0.0380	72	36	1000	-0.019	800	2.00	360
#61	0.0390	70	35	1000	-0.019	800	2.00	360
1.00mm	0.0394	70	35	1000	-0.019	800	2.00	360
#60	0.0400	68	34	1000	-0.019	800	2.00	360
#59	0.0410	66	33	1000	-0.020	800	2.00	360
1.05mm	0.0413	66	33	1000	-0.020	800	2.00	360
#58	0.0420	66	33	1000	-0.020	800	2.00	360
#57	0.0430	64	32	1000	-0.020	800	2.00	360
1.10mm	0.0433	64	32	1000	-0.020	800	2.00	360
1.15mm	0.0453	60	30	1000	-0.021	800	2.00	360

Note: This information is based on **120K RPM** Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable

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Drill Size	Diameter *(inch)*	Feed *(inch/min)*	Speed *(k-rpm)*	Retract *(inch/min)*	Z-Axis Offset *(inches)*	Max Hits	Chipload *(mm/rev)*	SFM
#56	0.0465	60	30	1000	-0.021	800	2.00	360
3/64	0.0469	58	29	1000	-0.021	800	2.00	360
1.20mm	0.0472	58	29	1000	-0.021	800	2.00	360
1.25mm	0.0492	56	28	1000	-0.021	800	2.00	360
1.30mm	0.0512	54	27	1000	-0.022	800	2.00	360
#55	0.0520	52	26	1000	-0.022	800	2.00	360
1.35mm	0.0531	52	26	1000	-0.022	800	2.00	360
#54	0.0550	50	25	1000	-0.023	800	2.00	360
1.40mm	0.0551	50	25	1000	-0.023	800	2.00	360
1.45mm	0.0571	48	24	1000	-0.023	800	2.00	360
1.50mm	0.0591	46	23	1000	-0.024	800	2.00	360
#53	0.0595	46	23	1000	-0.024	800	2.00	360
1.55mm	0.0610	46	23	1000	-0.024	800	2.00	360
1/16	0.0625	44	22	1000	-0.025	800	2.00	360
1.60mm	0.0630	44	22	1000	-0.025	800	2.00	360
#52	0.0635	42	21	1000	-0.025	800	2.00	360
1.65mm	0.0650	42	21	1000	-0.025	800	2.00	360
1.70mm	0.0669	42	21	1000	-0.026	800	2.00	360
#51	0.0670	42	21	1000	-0.026	800	2.00	360
1.75mm	0.0689	40	20	1000	-0.026	800	2.00	360
#50	0.0700	40	20	1000	-0.026	800	2.00	366
1.80mm	0.0709	40	20	1000	-0.027	800	2.00	371
1.85mm	0.0728	40	20	1000	-0.027	800	2.00	381
#49	0.0730	40	20	1000	-0.027	800	2.00	382
1.90mm	0.0748	40	20	1000	-0.027	800	2.00	391
#48	0.0760	40	20	1000	-0.028	800	2.00	398
1.95mm	0.0768	40	20	1000	-0.028	800	2.00	402
5/64	0.0781	38	20	1000	-0.028	800	1.90	409
#47	0.0785	38	20	1000	-0.028	800	1.90	411
2.00mm	0.0787	38	20	1000	-0.028	800	1.90	412
2.05mm	0.0807	38	20	1000	-0.029	800	1.90	422
#46	0.0810	38	20	1000	-0.029	800	1.90	424
#45	0.0820	38	20	1000	-0.029	800	1.90	429
2.10mm	0.0827	36	20	1000	-0.029	800	1.80	433
2.15mm	0.0846	36	20	1000	-0.030	800	1.80	443
#44	0.0860	36	20	1000	-0.030	800	1.80	450
2.20mm	0.0866	36	20	1000	-0.030	800	1.80	453
2.25mm	0.0886	36	20	1000	-0.031	800	1.80	464
#43	0.0890	36	20	1000	-0.031	800	1.80	466
2.30mm	0.0906	34	20	1000	-0.031	800	1.70	474
2.35mm	0.0925	34	20	1000	-0.032	800	1.70	484
#42	0.0935	34	20	1000	-0.032	800	1.70	489
3/32	0.0938	34	20	1000	-0.032	800	1.70	491
2.40mm	0.0945	34	20	1000	-0.032	800	1.70	495
#41	0.0960	34	20	1000	-0.032	800	1.70	502
2.45mm	0.0965	34	20	1000	-0.033	800	1.70	505
#40	0.0980	34	20	1000	-0.033	800	1.70	513
2.50mm	0.0984	34	20	1000	-0.033	800	1.70	515
#39	0.0995	34	20	1000	-0.033	800	1.70	521
2.55mm	0.1004	34	20	1000	-0.033	800	1.70	525
#38	0.1015	34	20	1000	-0.034	800	1.70	531
2.60mm	0.1024	34	20	1000	-0.034	800	1.70	536
#37	0.1040	34	20	1000	-0.034	800	1.70	544
2.65mm	0.1043	34	20	1000	-0.034	800	1.70	546
2.70mm	0.1063	32	20	1000	-0.035	800	1.60	556
#36	0.1065	32	20	1000	-0.035	800	1.60	557
2.75mm	0.1083	32	20	1000	-0.035	800	1.60	567
7/64	0.1094	32	20	1000	-0.036	800	1.60	573
#35	0.1100	32	20	1000	-0.036	800	1.60	576
2.80mm	0.1102	32	20	1000	-0.036	800	1.60	577
#34	0.1110	32	20	1000	-0.036	800	1.60	581
2.85mm	0.1122	32	20	1000	-0.036	800	1.60	587
#33	0.1130	32	20	1000	-0.036	800	1.60	591
2.90mm	0.1142	32	20	1000	-0.037	800	1.60	598
#32	0.1160	32	20	1000	-0.037	800	1.60	607
2.95mm	0.1161	32	20	1000	-0.037	800	1.60	608
3.00mm	0.1181	32	20	1000	-0.038	800	1.60	618
#31	0.1200	32	20	1000	-0.038	800	1.60	628
3.05mm	0.1201	32	20	1000	-0.038	800	1.60	629
3.10mm	0.1220	32	20	1000	-0.038	800	1.60	638
3.15mm	0.1240	32	20	1000	-0.039	800	1.60	649
1/8	0.1250	32	20	1000	-0.039	800	1.60	654

Note: This information is based on **120K RPM** Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable

Drill Size	Diameter *(inch)*	Feed *(inch/min)*	Speed *(k-rpm)*	Retract *(inch/min)*	Z-Axis Offset *(inches)*	Max Hits	Chipload *(mm/rev)*	SFM
3.20mm	0.1260	30	20	1000	-0.018	500	1.50	659
3.25mm	0.1280	30	20	1000	-0.018	500	1.50	670
#30	0.1285	30	20	1000	-0.019	500	1.50	672
3.30mm	0.1299	30	20	1000	-0.019	500	1.50	680
3.35mm	0.1319	30	20	1000	-0.019	500	1.50	690
3.40mm	0.1339	30	20	1000	-0.019	500	1.50	701
3.45mm	0.1358	30	20	1000	-0.019	500	1.50	711
#29	0.1360	30	20	1000	-0.019	500	1.50	712
3.50mm	0.1378	30	20	1000	-0.019	500	1.50	721
3.55mm	0.1398	30	20	1000	-0.019	500	1.50	732
#28	0.1405	30	20	1000	-0.019	500	1.50	735
9/64	0.1406	30	20	1000	-0.019	500	1.50	736
3.60mm	0.1417	30	20	1000	-0.019	500	1.50	742
3.65mm	0.1437	30	20	1000	-0.020	500	1.50	752
#27	0.1440	30	20	1000	-0.020	500	1.50	754
3.70mm	0.1457	30	20	1000	-0.020	500	1.50	762
#26	0.1470	30	20	1000	-0.020	500	1.50	769
3.75mm	0.1476	30	20	1000	-0.020	500	1.50	772
#25	0.1495	30	20	1000	-0.020	500	1.50	782
3.80mm	0.1496	30	20	1000	-0.020	500	1.50	783
3.85mm	0.1516	30	20	1000	-0.020	500	1.50	793
#24	0.1520	30	20	1000	-0.020	500	1.50	795
3.90mm	0.1535	25	20	1000	-0.020	500	1.25	803
#23	0.1540	25	20	1000	-0.020	500	1.25	806
3.95	0.1555	25	20	1000	-0.020	500	1.25	814
5/32	0.1562	25	20	1000	-0.020	500	1.25	817
#22	0.1570	25	20	1000	-0.020	500	1.25	822
4.00mm	0.1575	25	20	1000	-0.020	500	1.25	824
#21	0.1590	25	20	1000	-0.021	500	1.25	832
4.05mm	0.1594	25	20	1000	-0.021	500	1.25	834
#20	0.1610	25	20	1000	-0.021	500	1.25	843
4.10mm	0.1614	25	20	1000	-0.021	500	1.25	845
4.15mm	0.1634	25	20	1000	-0.021	500	1.25	855
4.20mm	0.1654	25	20	1000	-0.021	500	1.25	866
#19	0.1660	25	20	1000	-0.021	500	1.25	869
4.25mm	0.1673	25	20	1000	-0.021	500	1.25	876
4.30mm	0.1693	25	20	1000	-0.021	500	1.25	886
#18	0.1695	25	20	1000	-0.021	500	1.25	887
4.35mm	0.1713	25	20	1000	-0.021	500	1.25	896
11/64	0.1719	25	20	1000	-0.021	500	1.25	900
#17	0.1730	25	20	1000	-0.021	500	1.25	905
4.40mm	0.1732	25	20	1000	-0.021	500	1.25	906
4.45mm	0.1752	25	20	1000	-0.022	500	1.25	917
#16	0.1770	25	20	1000	-0.022	400	1.25	926
4.50mm	0.1772	25	20	1000	-0.022	400	1.25	927
4.55mm	0.1792	25	20	1000	-0.022	400	1.25	938
#15	0.1800	25	20	1000	-0.022	400	1.25	942
4.60mm	0.1811	25	20	1000	-0.022	400	1.25	948
#14	0.1820	25	20	1000	-0.022	400	1.25	952
4.65mm	0.1831	25	20	1000	-0.022	400	1.25	958
#13	0.1850	25	20	1000	-0.022	400	1.25	968
4.70mm	0.1850	25	20	1000	-0.022	400	1.25	968
4.75mm	0.1870	25	20	1000	-0.022	400	1.25	979
3/16	0.1875	25	20	1000	-0.022	400	1.25	981
4.80mm	0.1890	25	20	1000	-0.023	400	1.25	989
#12	0.1890	25	20	1000	-0.023	400	1.25	989
4.85mm	0.1909	25	20	1000	-0.023	400	1.25	999
#11	0.1910	25	20	1000	-0.023	400	1.25	1000
4.90mm	0.1929	25	20	1000	-0.023	400	1.25	1010
#10	0.1935	25	20	1000	-0.023	400	1.25	1013
4.95mm	0.1949	25	20	1000	-0.023	400	1.25	1020
#9	0.1960	25	20	1000	-0.023	400	1.25	1026
5.00mm	0.1968	25	20	1000	-0.023	400	1.25	1030
5.05mm	0.1988	25	20	1000	-0.023	400	1.25	1040
#8	0.1990	25	20	1000	-0.023	400	1.25	1041
5.10mm	0.2008	25	20	1000	-0.023	400	1.25	1051
#7	0.2010	25	20	1000	-0.023	400	1.25	1052
5.15mm	0.2028	25	20	1000	-0.023	400	1.25	1061
13/64	0.2031	25	20	1000	-0.023	400	1.25	1063
#6	0.2040	25	20	1000	-0.024	400	1.25	1068
5.20mm	0.2047	25	20	1000	-0.024	400	1.25	1071
#5	0.2055	25	20	1000	-0.024	400	1.25	1075

Note: This information is based on **120K RPM** Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable

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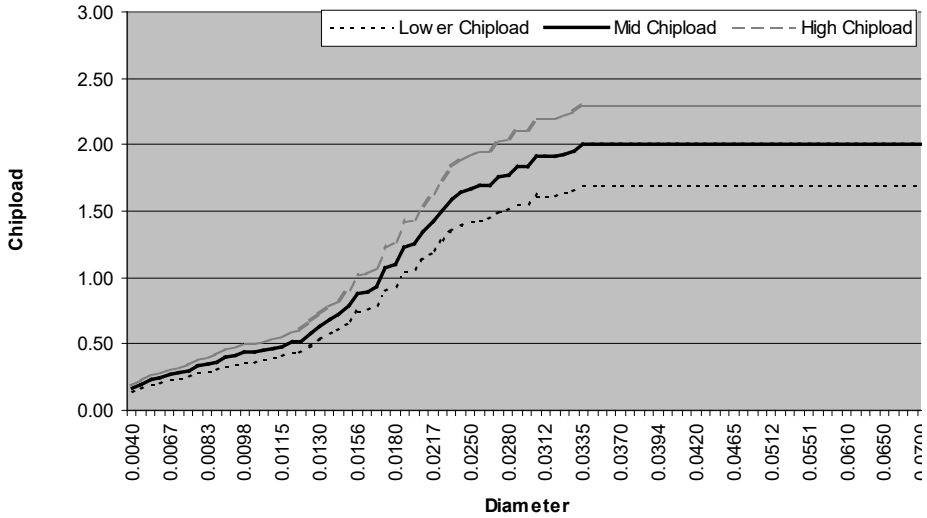
Drill Size	Diameter *(inch)*	Feed *(inch/min)*	Speed *(k-rpm)*	Retract *(inch/min)*	Z-Axis Offset *(inches)*	Max Hits	Chipload *(mm/rev)*	SFM
5.25mm	0.2067	25	20	1000	-0.024	400	1.25	1082
5.30mm	0.2087	25	20	1000	-0.024	400	1.25	1092
#4	0.2090	25	20	1000	-0.024	400	1.25	1094
5.35mm	0.2106	25	20	1000	-0.024	400	1.25	1102
5.40mm	0.2126	25	20	1000	-0.024	400	1.25	1113
#3	0.2130	25	20	1000	-0.024	400	1.25	1115
5.45mm	0.2146	25	20	1000	-0.024	400	1.25	1123
5.50mm	0.2165	25	20	1000	-0.024	400	1.25	1133
5.55mm	0.2185	20	20	1000	-0.024	400	1.00	1143
7/32	0.2188	20	20	1000	-0.024	400	1.00	1145
5.60mm	0.2205	20	20	1000	-0.025	400	1.00	1154
#2	0.2210	20	20	1000	-0.025	400	1.00	1157
5.65mm	0.2224	20	20	1000	-0.025	400	1.00	1164
5.70mm	0.2244	20	20	1000	-0.025	400	1.00	1174
5.75mm	0.2264	20	20	1000	-0.025	400	1.00	1185
#1	0.2280	20	20	1000	-0.025	400	1.00	1193
5.80mm	0.2283	20	20	1000	-0.025	400	1.00	1195
5.85mm	0.2302	20	20	1000	-0.025	400	1.00	1205
5.90mm	0.2323	20	20	1000	-0.025	400	1.00	1216
A	0.2340	20	20	1000	-0.025	400	1.00	1225
5.95mm	0.2343	20	20	1000	-0.026	400	1.00	1226
15/64	0.2344	20	20	1000	-0.026	400	1.00	1227
6.00mm	0.2362	20	20	1000	-0.026	400	1.00	1236
B	0.2380	20	20	1000	-0.026	400	1.00	1246
6.05mm	0.2382	20	20	1000	-0.026	400	1.00	1247
6.10mm	0.2402	20	20	1000	-0.026	400	1.00	1257
C	0.2420	20	20	1000	-0.026	400	1.00	1266
6.15mm	0.2421	20	20	1000	-0.026	400	1.00	1267
6.20mm	0.2441	20	20	1000	-0.026	400	1.00	1277
D	0.2460	20	20	1000	-0.026	400	1.00	1287
6.25mm	0.2461	20	20	1000	-0.026	400	1.00	1288
6.30mm	0.2480	20	20	1000	-0.026	400	1.00	1298
6.35mm	0.2500	20	20	1000	-0.027	400	1.00	1308
6.40mm	0.2520	20	20	1000	-0.027	400	1.00	1319
6.50mm	0.2559	20	20	1000	-0.027	400	1.00	1339
F	0.2570	20	20	1000	-0.027	400	1.00	1345
6.60mm	0.2598	20	20	1000	-0.027	400	1.00	1360

In some cases, there may be an opportunity to increase the chipload based on the application's robustness. Variables such as machine technology and condition, stack support materials, and Kyocera design selection may allow the increased throughput with higher chiploads. Multiply the recommended chipload by 1.15 to reach the higher chipload.

If the application is not as robust due to heavy glass, high copper content, tight annular ring requirements, or similar, multiply the recommended chipload by 0.85.

Chiploads for Cyanate Ester



Note: This information is based on **120K RPM** Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable