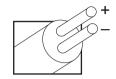
MAXIMUM TEMPERATURE RANGE

Thermocouple Grade 0 to 1700°C, 32 to 3092°F Extension Grade 0 to 100°C, 32 to 212°F LIMITS OF ERROR (whichever is greater)
Standard: 0.5°C over 800°C
Special: NOT ESTABLISHED

COMMENTS, BARE WIRE ENVIRONMENT: Oxidising or Inert; Do Not Insert in Metal Tubes; Beware of Contamination; High Temperature;

Common Use in Glass Industry TEMPERATURE IN DEGREES °C REFERENCE JUNCTION AT 0°C Platinum-30% Rhodium VS. Platinum-6% Rhodium



Reference **Tables** N.I.S.T. Monograph 175 Revised to **ITS-90**



Thermoelectric Voltage in Millivolts

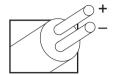
membelectic voltage in villivolts																									
°C 0 10 20 30 40	-0.002 -0.003 -0.002	-0.002 -0.003 -0.002	-0.002 -0.003 -0.002	-0.002 -0.003 -0.002	-0.002 -0.003 -0.002	-0.002 -0.002 -0.001	6 -0.001 -0.002 -0.002 -0.001 0.001	-0.002 -0.002 -0.001	-0.003 -0.002 -0.001	-0.003 -0.002 -0.001	-0.003 -0.002 0.000	°C 0 10 20 30 40	°C 600 610 620 630 640	0 1.792 1.852 1.913 1.975 2.037	1.858 1.919 1.981	1.864 1.925	1.870 1.931 1.993	1.876 1.937 1.999	1.882 1.944 2.006	1.888	1.894 1.956 2.018	8 1.840 1.901 1.962 2.025 2.088	1.907 1.968	1.913 1.975 2.037	°C 600 610 620 630 640
50 60 70 80 90	0.011 0.017	0.007 0.012 0.018	0.007 0.012 0.019	0.008 0.013 0.020	0.008 0.014 0.020	0.009 0.014	0.004 0.009 0.015 0.022 0.030	0.010 0.015	0.010 0.016 0.023		0.011	50 60 70 80 90	650 660 670 680 690	2.230 2.296	2.107 2.171 2.237 2.303 2.370	2.113 2.178 2.243 2.309 2.376	2.184 2.250 2.316	2.191 2.256 2.323	2.133 2.197 2.263 2.329 2.397	2.204 2.270 2.336	2.210 2.276 2.343	2.152 2.217 2.283 2.350 2.417	2.224 2.289 2.356	2.296 2.363	650 660 670 680 690
100 110 120 130 140	0.053 0.065	0.044 0.055 0.066	0.056	0.046 0.057 0.069	0.047 0.058	0.072		0.050 0.062 0.074	0.063 0.075		0.053 0.065 0.078	100 110 120 130 140	700 710 720 730 740	2.431 2.499 2.569 2.639 2.710	2.506 2.576	2.444 2.513 2.583 2.653 2.724	2.520 2.590 2.660	2.527 2.597 2.667	2.534 2.604 2.674	2.472 2.541 2.611 2.681 2.753	2.548 2.618 2.688	2.625 2.696	2.703	2.569 2.639 2.710	700 710 720 730 740
150 160 170 180 190	0.107 0.123 0.141	0.125 0.142	0.110 0.127 0.144	0.128 0.146	0.113 0.130 0.148	0.115 0.132 0.150	0.101 0.117 0.134 0.151 0.170	0.118 0.135 0.153	0.120 0.137 0.155	0.122 0.139 0.157	0.123 0.141 0.159	150 160 170 180 190	750 760 770 780 790	2.782 2.854 2.928 3.002 3.078			2.876 2.950 3.025	2.884 2.958 3.032		2.898		2.840 2.913 2.987 3.062 3.138	2.921 2.995 3.070	2.928 3.002 3.078	750 760 770 780 790
200 210 220 230 240	0.220 0.243	0.222 0.245	0.248	0.205 0.227 0.250	0.207 0.229 0.252	0.231 0.255	0.190 0.212 0.234 0.257 0.281	0.236 0.259	0.216 0.238 0.262	0.241 0.264	0.220 0.243 0.267	200 210 220 230 240	800 810 820 830 840	3.308 3.386	3.238 3.316 3.394	3.324 3.402	3.254 3.331 3.410	3.261 3.339 3.418	3.347 3.426	3.277 3.355	3.363 3.442	3.215 3.292 3.371 3.450 3.530	3.379 3.458	3.466	800 810 820 830 840
250 260 270 280 290	0.344 0.372	0.320 0.347 0.375	0.322 0.349 0.377	0.325 0.352 0.380	0.328 0.355 0.383	0.330 0.358 0.386	0.307 0.333 0.360 0.389 0.419	0.336 0.363 0.392	0.338 0.366 0.395	0.341 0.369	0.344 0.372 0.401	250 260 270 280 290	850 860 870 880 890	3.546 3.626 3.708 3.790 3.873	3.634 3.716 3.798		3.651 3.732 3.815	3.659 3.741 3.823	3.832	3.675 3.757	3.848		3.782	3.708 3.790 3.873	850 860 870 880 890
300 310 320 330 340	0.494	0.465 0.497 0.530	0.500 0.533	0.471 0.503 0.537	0.507 0.540	0.478 0.510 0.544	0.449 0.481 0.513 0.547 0.582	0.517 0.550	0.487 0.520 0.554	0.490 0.523 0.557		300 310 320 330 340	900 910 920 930 940	4.127 4.213	4.221	3.974 4.058 4.144 4.230 4.317	4.067 4.152 4.239	4.075 4.161 4.247		4.093 4.178 4.265	4.101 4.187 4.273			4.127 4.213 4.299	900 910 920 930 940
350 360 370 380 390	0.632 0.669 0.707	0.636 0.673 0.711	0.639 0.677 0.715	0.680 0.719	0.647 0.684 0.723	0.650 0.688 0.727	0.617 0.654 0.692 0.731 0.770	0.658 0.696 0.735	0.662 0.700 0.738	0.665 0.703 0.742	0.632 0.669 0.707 0.746 0.787	350 360 370 380 390	950 960 970 980 990	4.564	4.662	4.404 4.493 4.582 4.671 4.762	4.501 4.591 4.680	4.510 4.599	4.519 4.608 4.698	4.617 4.707	4.537 4.626	4.457 4.546 4.635 4.725 4.816	4.466 4.555 4.644 4.734 4.825	4.564 4.653	950 960 970 980 990
400 410 420 430 440	0.828 0.870 0.913	0.791 0.832 0.874 0.917 0.961	0.836 0.878 0.922	0.926	0.844 0.887 0.930	0.849 0.891 0.935	0.811 0.853 0.896 0.939 0.984	0.857 0.900 0.944	0.861 0.904 0.948		0.870 0.913 0.957	400 410 420 430 440	1000 1010 1020 1030 1040		4.935 5.027 5.120	4.853 4.944 5.037 5.130 5.223	4.954 5.046 5.139	4.963 5.055 5.148	5.065 5.158	4.889 4.981 5.074 5.167 5.261	4.990 5.083 5.176	5.000 5.092	5.009 5.102 5.195	4.926 5.018 5.111 5.205 5.299	1010 1020 1030
450 460 470 480 490	1.048 1.095 1.143	1.100 1.148	1.057 1.105 1.153	1.062 1.109 1.158	1.067 1.114 1.163	1.071 1.119 1.167	1.030 1.076 1.124 1.172 1.222	1.129 1.177	1.086 1.133 1.182	1.090 1.138	1.143 1.192	450 460 470 480 490	1050 1060 1070 1080 1090		5.308 5.403 5.499 5.595 5.692	5.318 5.413 5.508 5.605 5.702	5.422 5.518 5.614	5.432 5.528 5.624	5.537	5.451 5.547 5.643	5.556 5.653	5.375 5.470 5.566 5.663 5.760	5.576 5.672	5.394 5.489 5.585 5.682 5.780	1060 1070 1080
500 510 520 530 540	1.293 1.344 1.397		1.303 1.355 1.408	1.308 1.360 1.413	1.313 1.365 1.418	1.318 1.371 1.424	1.429	1.329 1.381 1.435	1.334 1.387	1.339 1.392 1.445	1.344 1.397	500 510 520 530 540	1100 1110 1120 1130 1140	5.878 5.976 6.075	5.887 5.986	5.799 5.897 5.996 6.095 6.195	5.907 6.006 6.105	5.917 6.016	5.927 6.026 6.125		5.947		5.966 6.065 6.165	5.878 5.976 6.075 6.175 6.276	1110 1120 1130
550 560 570 580 590	1.561 1.617 1.675	1.511 1.566 1.623 1.680 1.739	1.572 1.629 1.686	1.578 1.634 1.692	1.583 1.640 1.698	1.589 1.646 1.704	1.595 1.652	1.544 1.600 1.657 1.715 1.774	1.606 1.663 1.721	1.555 1.612 1.669 1.727 1.786	1.617 1.675 1.733	550 560 570 580 590	1150 1160 1170 1180 1190		6.387 6.488	6.296 6.397 6.499 6.601 6.704	6.407 6.509	6.417 6.519 6.621	6.632	6.438 6.539	6.346 6.448 6.550 6.652 6.755	6.356 6.458 6.560 6.663 6.766	6.468 6.570 6.673	6.377 6.478 6.580 6.683 6.786	1160 1170 1180
°C	0	1	2	3	4	5	6	7	8	9	10	°C	°C	0	1	2	3	4	5	6	7	8	9	10	°C

Revised Thermocouple Reference Tables

Tables N.I.S.T. Monograph 175 Revised to **ITS-90**



Platinum-30% Rhodium Platinum-6% Rhodium



MAXIMUM TEMPERATURE RANGE

Thermocouple Grade 0 to 1700°C, 32 to 3092°F Extension Grade 0 to 100°C, 32 to 212°F LIMITS OF ERROR

(whichever is greater)
Standard: 0.5°C over 800°C
Special: NOT ESTABLISHED

COMMENTS, BARE WIRE ENVIRONMENT: Oxidising or Inert; Do Not Insert in Metal Tubes; Beware of Contamination; High Temperature; Common Use in Glass Industry

TEMPERATURE IN DEGREES °C REFERENCE JUNCTION AT 0°C

Thermoelectric Voltage in Millivolts

°C 1200 1210 1220 1230	7.100	6.901 7.005 7.110	7.121	6.922 7.026 7.131	7.142	6.942 7.047 7.152	7.058 7.163	7.173	7.079 7.184	7.194		1210 1220 1230		1560 1570 1580	10.796 10.913 11.029	10.808 10.924 11.041	10.819 10.936 11.053	10.831 10.948 11.064	10.843 10.959 11.076	10.854 10.971 11.088	10.866 10.983 11.099	10.877 10.994 11.111	10.889 11.006 11.123	10.901 11.018 11.134	10 10.796 10.913 11.029 11.146	1560 1570 1580
1240 1250 1260 1270 1280 1290	7.311 7.417 7.524 7.632	7.322 7.428 7.535 7.643	7.332 7.439 7.546 7.653	7.237 7.343 7.449 7.557 7.664 7.772	7.353 7.460 7.567 7.675	7.364 7.471 7.578 7.686	7.375 7.482 7.589 7.697	7.385 7.492 7.600 7.707	7.396 7.503 7.610 7.718	7.407 7.514 7.621 7.729	7.417 7.524 7.632 7.740	1250 1260 1270 1280		1600 1610 1620 1630	11.263 11.380 11.497 11.614	11.275 11.392 11.509 11.626	11.286 11.403 11.520 11.637	11.298 11.415 11.532 11.649	11.310 11.427 11.544 11.661	11.321 11.438 11.555 11.673	11.333 11.450 11.567 11.684	11.345 11.462 11.579 11.696	11.357 11.474 11.591 11.708	11.368 11.485 11.602 11.719	11.263 11.380 11.497 11.614 11.731 11.848	1600 1610 1620 1630
1300 1310 1320 1330 1340	7.848 7.957 8.066	7.859 7.968 8.077 8.187		7.881 7.990 8.099 8.209	7.892 8.001 8.110 8.220	7.903 8.012 8.121 8.231	7.914 8.023 8.132 8.242		7.935 8.045 8.154 8.264	7.946 8.056 8.165 8.275	7.957 8.066 8.176 8.286	1300 1310 1320 1330		1650 1660 1670 1680	11.848 11.965 12.082 12.199	11.860 11.977 12.094 12.211	11.871 11.988 12.105 12.222	11.883 12.000 12.117 12.234	11.895 12.012 12.129 12.246	11.907 12.024 12.141 12.257	11.918 12.035 12.152 12.269	11.930 12.047 12.164 12.281	11.942 12.059 12.176 12.292	11.953 12.070 12.187 12.304	11.965 12.082 12.199 12.316 12.433	1650 1660 1670 1680
1350 1360 1370 1380 1390	8.508 8.620 8.731	8.519 8.631 8.743	8.530 8.642	8.653 8.765	8.553 8.664 8.776	8.564 8.675 8.787	8.575 8.687 8.799	8.586	8.597 8.709 8.821	8.720 8.832	8.620 8.731 8.844	1360 1370 1380		1710 1720 1730	12.549 12.666 12.782	12.561 12.677 12.794	12.572 12.689 12.805	12.584 12.701 12.817	12.596 12.712 12.829	12.607 12.724 12.840	12.619 12.736 12.852	12.631 12.747 12.863	12.642 12.759 12.875	12.654 12.770 12.887	12.549 12.666 12.782 12.898 13.014	1710 1720 1730
1400 1410 1420 1430 1440	9.296	9.080 9.194 9.307	9.205 9.319	9.103 9.216	9.114 9.228 9.342	9.126 9.239 9.353	9.137 9.251 9.364	9.035 9.148 9.262 9.376 9.490	9.160 9.273 9.387	9.171 9.285 9.398	9.182 9.296 9.410	1410 1420 1430		1760 1770 1780	13.130 13.246 13.361	13.142 13.257 13.373	13.153 13.269 13.384	13.165 13.280 13.396	13.176 13.292 13.407	13.188 13.304 13.419	13.200 13.315 13.430	13.211 13.327 13.442	13.223 13.338 13.453	13.234 13.350 13.465	13.130 13.246 13.361 13.476 13.591	1760 1770 1780
1450 1460 1470 1480 1490	9.639 9.753 9.868	9.650 9.765 9.880	9.662 9.776 9.891	9.558 9.673 9.788 9.903 10.018	9.684 9.799 9.914	9.696 9.811 9.926	9.707 9.822 9.937	9.719 9.834 9.949	9.730 9.845 9.961	9.742 9.857 9.972	9.753 9.868 9.984	1460 1470 1480													13.706 13.820	
1530	10.099 10.215 10.331 10.447 10.563	10.226 10.342 10.458	10.238 10.354 10.470	10.249 10.365 10.482	10.261 10.377 10.493	10.273 10.389 10.505	10.284 10.400 10.516	10.296 10.412 10.528	10.307 10.423 10.540	10.319 10.435 10.551	10.331 10.447 10.563	1510 1520 1530														
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