

TEMPERATURE INTERCONVERSION TABLES ($^{\circ}\text{C} \longleftrightarrow ^{\circ}\text{F}$) AND MELTING POINTS
 OF THE CHEMICAL ELEMENTS

TABLE 1.—Conversion table: degrees centigrade to degrees Fahrenheit

$^{\circ}\text{C}$	0	10	20	30	40	50	60	70	80	90		
	F	F	F	F	F	F	F	F	F	F		
-200	-328	-346	-364	-382	-400	-418	-436	-454	-472	-490		
-100	-148	-166	-184	-202	-220	-238	-256	-274	-292	-310		
-0	+32	+14	-4	-22	-40	-58	-76	-94	-112	-130		
0	32	50	68	86	104	122	140	158	176	194	$^{\circ}\text{C}$	$^{\circ}\text{F}$
100	212	230	248	266	284	302	320	338	356	374	1	1.8
200	392	410	428	446	464	482	500	518	536	554	2	3.6
300	572	590	608	626	644	662	680	698	716	734	3	5.4
400	752	770	788	806	824	842	860	878	896	914	4	7.2
500	932	950	968	986	1004	1022	1040	1058	1076	1094	5	9.0
600	1112	1130	1148	1166	1184	1202	1220	1238	1256	1274	6	10.8
700	1292	1310	1328	1346	1364	1382	1400	1418	1436	1454	7	12.6
800	1472	1490	1508	1526	1544	1562	1580	1598	1616	1634	8	14.4
900	1652	1670	1688	1706	1724	1742	1760	1778	1796	1814	9	16.2
1000	1832	1850	1868	1886	1904	1922	1940	1958	1976	1994	10	18.0
1100	2012	2030	2048	2066	2084	2102	2120	2138	2156	2174		
1200	2192	2210	2228	2246	2264	2282	2300	2318	2336	2354		
1300	2372	2390	2408	2426	2444	2462	2480	2498	2516	2534		
1400	2552	2570	2588	2606	2624	2642	2660	2678	2696	2714		
1500	2732	2750	2768	2786	2804	2822	2840	2858	2876	2894		
1600	2912	2930	2948	2966	2984	3002	3020	3038	3056	3074	$^{\circ}\text{F}$	$^{\circ}\text{C}$
1700	3092	3110	3128	3146	3164	3182	3200	3218	3236	3254	1	0.56
1800	3272	3290	3308	3326	3344	3362	3380	3398	3416	3434	2	1.11
1900	3452	3470	3488	3506	3524	3542	3560	3578	3596	3614	3	1.67
2000	3632	3650	3668	3686	3704	3722	3740	3758	3776	3794	4	2.22
2100	3812	3830	3848	3866	3884	3902	3920	3938	3956	3974	5	2.78
2200	3992	4010	4028	4046	4064	4082	4100	4118	4136	4154	6	3.33
2300	4172	4190	4208	4226	4244	4262	4280	4298	4316	4334	7	3.89
2400	4352	4370	4388	4406	4424	4442	4460	4478	4496	4514	8	4.44
2500	4532	4550	4568	4586	4604	4622	4640	4658	4676	4694	9	5.00
2600	4712	4730	4748	4766	4784	4802	4820	4838	4856	4874	10	5.56
2700	4892	4910	4928	4946	4964	4982	5000	5018	5036	5054	11	6.11
2800	5072	5090	5108	5126	5144	5162	5180	5198	5216	5234	12	6.67
2900	5252	5270	5288	5306	5324	5342	5360	5378	5396	5414	13	7.22
3000	5432	5450	5468	5486	5504	5522	5540	5558	5576	5594	14	7.78
3100	5612	5630	5648	5666	5684	5702	5720	5738	5756	5774	15	8.33
3200	5792	5810	5828	5846	5864	5882	5900	5918	5936	5954	16	8.89
3300	5972	5990	6008	6026	6044	6062	6080	6098	6116	6134	17	9.44
3400	6152	6170	6188	6206	6224	6242	6260	6278	6296	6314	18	10.00
3500	6332	6350	6368	6386	6404	6422	6440	6458	6476	6494		
3600	6512	6530	6548	6566	6584	6602	6620	6638	6656	6674		
3700	6692	6710	6728	6746	6764	6782	6800	6818	6836	6854		
3800	6872	6890	6908	6926	6944	6962	6980	6998	7016	7034		
3900	7052	7070	7088	7106	7124	7142	7160	7178	7196	7214		
$^{\circ}\text{C}$	0	10	20	30	40	50	60	70	80	90		

EXAMPLES: $1347^{\circ}\text{C} = 2444^{\circ}\text{F} + 12.6^{\circ}\text{F} = 2456.6^{\circ}\text{F}$. $3367^{\circ}\text{F} = 1850^{\circ}\text{C} + 2.78^{\circ}\text{C} = 1852.78^{\circ}\text{C}$.

TABLE 2.—Conversion table: degrees Fahrenheit to degrees centigrade
(Single boldface figures indicate recurring decimals)

° F	0	10	20	30	40	50	60	70	80	90		
	C	C	C	C	C	C	C	C	C	C		
-400	-240.0	-245.5	-251.1	-256.6	-262.2	-267.7	-273.2	-278.7	-284.2	-289.7		
-300	-184.4	-190.0	-195.5	-201.1	-206.6	-212.2	-217.7	-223.3	-228.8	-234.4		
-200	-128.8	-134.4	-140.0	-145.5	-151.1	-156.6	-162.2	-167.7	-173.3	-178.8		
-100	-73.3	-78.8	-84.4	-90.0	-95.5	-101.1	-106.6	-112.2	-117.7	-123.3		
-0	-17.7	-23.3	-28.8	-34.4	-40.0	-45.5	-51.1	-56.6	-62.2	-67.7		
0	-17.7	-12.2	-6.6	-1.1	+4.4	+10.0	+15.5	+21.1	+26.6	+32.2		
100	37.7	43.3	48.8	54.4	60.0	65.5	71.1	76.6	82.2	87.7		
200	93.3	98.8	104.4	110.0	115.5	121.1	126.6	132.2	137.7	143.3		
300	148.8	154.4	160.0	165.5	171.1	176.6	182.2	187.7	193.3	198.8		
400	204.4	210.0	215.5	221.1	226.6	232.2	237.7	243.3	248.8	254.4		
500	260.0	265.5	271.1	276.6	282.2	287.7	293.3	298.8	304.4	310.0		
600	315.5	321.1	326.6	332.2	337.7	343.3	348.8	354.4	360.0	365.5		
700	371.1	376.6	382.2	387.7	393.3	398.8	404.4	410.0	415.5	421.1		
800	426.6	432.2	437.7	443.3	448.8	454.4	460.0	465.5	471.1	476.6		
900	482.2	487.7	493.3	498.8	504.4	510.0	515.5	521.1	526.6	532.2		
1000	537.7	543.3	548.8	554.4	560.0	565.5	571.1	576.6	582.2	587.7	° F	° C
1100	593.3	598.8	604.4	610.0	615.5	621.1	626.6	632.2	637.7	643.3	1	0.5
1200	648.8	654.4	660.0	665.5	671.1	676.6	682.2	687.7	693.3	698.8	2	1.1
1300	704.4	710.0	715.5	721.1	726.6	732.2	737.7	743.3	748.8	754.4	3	1.6
1400	760.0	765.5	771.1	776.6	782.2	787.7	793.3	798.8	804.4	810.0		
1500	815.5	821.1	826.6	832.2	837.7	843.3	848.8	854.4	860.0	865.5		
1600	871.1	876.6	882.2	887.7	893.3	898.8	904.4	910.0	915.5	921.1	4	2.2
1700	926.6	932.2	937.7	943.3	948.8	954.4	960.0	965.5	971.1	976.6	5	2.7
1800	982.2	987.7	993.3	998.8	1004.4	1010.0	1015.5	1021.1	1026.6	1032.2	6	3.3
1900	1037.7	1043.3	1048.8	1054.4	1060.0	1065.5	1071.1	1076.6	1082.2	1087.7	7	3.8
2000	1093.3	1098.8	1104.4	1110.0	1115.5	1121.1	1126.6	1132.2	1137.7	1143.3	8	4.4
2100	1148.8	1154.4	1160.0	1165.5	1171.1	1176.6	1182.2	1187.7	1193.3	1198.8	9	5.0
2200	1204.4	1210.0	1215.5	1221.1	1226.6	1232.2	1237.7	1243.3	1248.8	1254.4		
2300	1260.0	1265.5	1271.1	1276.6	1282.2	1287.7	1293.3	1298.8	1304.4	1310.0		
2400	1315.5	1321.1	1326.6	1332.2	1337.7	1343.3	1348.8	1354.4	1360.0	1365.5		
2500	1371.1	1376.6	1382.2	1387.7	1393.3	1398.8	1404.4	1410.0	1415.5	1421.1		
2600	1426.6	1432.2	1437.7	1443.3	1448.8	1454.4	1460.0	1465.5	1471.1	1476.6		
2700	1482.2	1487.7	1493.3	1498.8	1504.4	1510.0	1515.5	1521.1	1526.6	1532.2		
2800	1537.7	1543.3	1548.8	1554.4	1560.0	1565.5	1571.1	1576.6	1582.2	1587.7		
2900	1593.3	1598.8	1604.4	1610.0	1615.5	1621.1	1626.6	1632.2	1637.7	1643.3		
3000	1648.8	1654.4	1660.0	1665.5	1671.1	1676.6	1682.2	1687.7	1693.3	1698.8		
3100	1704.4	1710.0	1715.5	1721.1	1726.6	1732.2	1737.7	1743.3	1748.8	1754.4		
3200	1760.0	1765.5	1771.1	1776.6	1782.2	1787.7	1793.3	1798.8	1804.4	1810.0		
3300	1815.5	1821.1	1826.6	1832.2	1837.7	1843.3	1848.8	1854.4	1860.0	1865.5		
3400	1871.1	1876.6	1882.2	1887.7	1893.3	1898.8	1904.4	1910.0	1915.5	1921.1		
3500	1926.6	1932.2	1937.7	1943.3	1948.8	1954.4	1960.0	1965.5	1971.1	1976.6		
3600	1982.2	1987.7	1993.3	1998.8	2004.4	2010.0	2015.5	2021.1	2026.6	2032.2		
° F	0	10	20	30	40	50	60	70	80	90		

EXAMPLES: $-246.0^{\circ}\text{F} = -151.11^{\circ}\text{C}$ $-3.33^{\circ}\text{C} = -154.44^{\circ}\text{C}$.
 $3762^{\circ}\text{F} = 2071.1^{\circ}\text{C}$ $+1.1^{\circ}\text{C} = 2072.2^{\circ}\text{C}$.
 $2423.5^{\circ}\text{F} = 1326.66^{\circ}\text{C}$ $+1.66^{\circ}\text{C} + 0.27^{\circ}\text{C} = 1328.61^{\circ}\text{C}$.

TABLE 2—Continued

°F to °C

°F	0	10	20	30	40	50	60	70	80	90		
	C	C	C	C	C	C	C	C	C	C		
3700	2037.7	2043.3	2048.8	2054.4	2060.0	2065.5	2071.1	2076.6	2082.2	2087.7		
3800	2093.3	2098.8	2104.4	2110.0	2115.5	2121.1	2126.6	2132.2	2137.7	2143.3		
3900	2148.8	2154.4	2160.0	2165.5	2171.1	2176.6	2182.2	2187.7	2193.3	2198.8		
4000	2204.4	2210.0	2215.5	2221.1	2226.6	2232.2	2237.7	2243.3	2248.8	2254.4		
4100	2260.0	2265.5	2271.1	2276.6	2282.2	2287.7	2293.3	2298.8	2304.4	2310.0		
4200	2315.5	2321.1	2326.6	2332.2	2337.7	2343.3	2348.8	2354.4	2360.0	2365.5		
4300	2371.1	2376.6	2382.2	2387.7	2393.3	2398.8	2404.4	2410.0	2415.5	2421.1		
4400	2426.6	2432.2	2437.7	2443.3	2448.8	2454.4	2460.0	2465.5	2471.1	2476.6		
4500	2482.2	2487.7	2493.3	2498.8	2504.4	2510.0	2515.5	2521.1	2526.6	2532.2		
4600	2537.7	2543.3	2548.8	2554.4	2560.0	2565.5	2571.1	2576.6	2582.2	2587.7		
4700	2593.3	2598.8	2604.4	2610.0	2615.5	2621.1	2626.6	2632.2	2637.7	2643.3		
4800	2648.8	2654.4	2660.0	2665.5	2671.1	2676.6	2682.2	2687.7	2693.3	2698.8		
4900	2704.4	2710.0	2715.5	2721.1	2726.6	2732.2	2737.7	2743.3	2748.8	2754.4		
5000	2760.0	2765.5	2771.1	2776.6	2782.2	2787.7	2793.3	2798.8	2804.4	2810.0		
5100	2815.5	2821.1	2826.6	2832.2	2837.7	2843.3	2848.8	2854.4	2860.0	2865.5	1	0.5
5200	2871.1	2876.6	2882.2	2887.7	2893.3	2898.8	2904.4	2910.0	2915.5	2921.1	2	1.1
5300	2926.6	2932.2	2937.7	2943.3	2948.8	2954.4	2960.0	2965.5	2971.1	2976.6	3	1.6
5400	2982.2	2987.7	2993.3	2998.8	3004.4	3010.0	3015.5	3021.1	3026.6	3032.2	4	2.2
5500	3037.7	3043.3	3048.8	3054.4	3060.0	3065.5	3071.1	3076.6	3082.2	3087.7	5	2.7
5600	3093.3	3098.8	3104.4	3110.0	3115.5	3121.1	3126.6	3132.2	3137.7	3143.3	6	3.3
5700	3148.8	3154.4	3160.0	3165.5	3171.1	3176.6	3182.2	3187.7	3193.3	3198.8	7	3.8
5800	3204.4	3210.0	3215.5	3221.1	3226.6	3232.2	3237.7	3243.3	3248.8	3254.4	8	4.4
5900	3260.0	3265.5	3271.1	3276.6	3282.2	3287.7	3293.3	3298.8	3304.4	3310.0	9	5.0
6000	3315.5	3321.1	3326.6	3332.2	3337.7	3343.3	3348.8	3354.4	3360.0	3365.5		
6100	3371.1	3376.6	3382.2	3387.7	3393.3	3398.8	3404.4	3410.0	3415.5	3421.1		
6200	3426.6	3432.2	3437.7	3443.3	3448.8	3454.4	3460.0	3465.5	3471.1	3476.6		
6300	3482.2	3487.7	3493.3	3498.8	3504.4	3510.0	3515.5	3521.1	3526.6	3532.2		
6400	3537.7	3543.3	3548.8	3554.4	3560.0	3565.5	3571.1	3576.6	3582.2	3587.7		
6500	3593.3	3598.8	3604.4	3610.0	3615.5	3621.1	3626.6	3632.2	3637.7	3643.3		
6600	3648.8	3654.4	3660.0	3665.5	3671.1	3676.6	3682.2	3687.7	3693.3	3698.8		
6700	3704.4	3710.0	3715.5	3721.1	3726.6	3732.2	3737.7	3743.3	3748.8	3754.4		
6800	3760.0	3765.5	3771.1	3776.6	3782.2	3787.7	3793.3	3798.8	3804.4	3810.0		
6900	3815.5	3821.1	3826.6	3832.2	3837.7	3843.3	3848.8	3854.4	3860.0	3865.5		
7000	3871.1	3876.6	3882.2	3887.7	3893.3	3898.8	3904.4	3910.0	3915.5	3921.1		
7100	3926.6	3932.2	3937.7	3943.3	3948.8	3954.4	3960.0	3965.5	3971.1	3976.6		
7200	3982.2	3987.7	3993.3	3998.8	4004.4	4010.0	4015.5	4021.1	4026.6	4032.2		
7300	4037.7	4043.3	4048.8	4054.4	4060.0	4065.5	4071.1	4076.6	4082.2	4087.7		
7400	4093.3	4098.8	4104.4	4110.0	4115.5	4121.1	4126.6	4132.2	4137.7	4143.3		
7500	4148.8	4154.4	4160.0	4165.5	4171.1	4176.6	4182.2	4187.7	4193.3	4198.8		
7600	4204.4	4210.0	4215.5	4221.1	4226.6	4232.2	4237.7	4243.3	4248.8	4254.4		
7700	4260.0	4265.5	4271.1	4276.6	4282.2	4287.7	4293.3	4298.8	4304.4	4310.0		
7800	4315.5	4321.1	4326.6	4332.2	4337.7	4343.3	4348.8	4354.4	4360.0	4365.5		
7900	4371.1	4376.6	4382.2	4387.7	4393.3	4398.8	4404.4	4410.0	4415.5	4421.1		
°F	0	10	20	30	40	50	60	70	80	90		

TABLE 3.—*The Chemical Elements: Their atomic numbers, symbols, and weights, and their melting points on the International Temperature Scale*

[For International Temperature Scale see BS J. Research 1, 635 (1928) RP22]

Temperatures below -190°C are on the Centigrade Thermodynamic Scale.

The atomic weights given constitute the complete list of the International Weights of 1936, as approved and reported by the Committee on Atomic Weights of the International Union of Chemistry. There is reason to believe that the following (unofficial) values may prove more nearly correct: Aluminum, 26.974; carbon, 12.009; gallium, 69.74.

Atomic number	Atomic symbol	Name of element	Melting point $^{\circ}\text{C}$	Atomic weight	Atomic number	Atomic symbol	Name of element	Melting point $^{\circ}\text{C}$	Atomic weight
89	Ac	Actinium	^a 1600	-----	60	Nd	Neodymium	840 \pm 40	144. 27
13	Al	Aluminum	660. 0 \pm 0. 1	26. 97	10	Ne	Neon	$-248. 6 \pm 0. 3$	20. 183
51	Sb	Antimony	630. 5 \pm 0. 1	121. 76	28	Ni	Nickel	1455 \pm 1	58. 69
18	A	Argon	$-189. 3 \pm 0. 5$	39. 944	7	N	Nitrogen	$-210. 0 \pm 0. 3$	14. 008
33	As	Arsenic	^b 814	74. 91	76	Os	Osmium	2700 \pm 200	191. 5
56	Ba	Barium	704 \pm 20	137. 36	8	O	Oxygen	$-218. 8 \pm 0. 3$	16. 0000
4	Be	Beryllium	1280 \pm 40	9. 02	46	Pd	Palladium	1554 \pm 1	106. 7
83	Bi	Bismuth	271. 3 \pm 0. 1	209. 00	15	P	Phosphorus, Y	44. 1 \pm 0. 1	31. 02
5	B	Boron	2300 \pm 300	10. 82	78	Pt	Phosphorus, R	^d 590	-----
35	Br	Bromine	$-7. 2 \pm 0. 2$	79. 916	84	Po	Platinum	1773. 5 \pm 1	195. 23
48	Cd	Cadmium	320. 9 \pm 0. 1	112. 41	19	K	Potassium	63 \pm 1	39. 096
20	Ca	Calcium	850 \pm 20	40. 08	59	Pr	Praseodymium	940 \pm 50	140. 92
6	C	Carbon	3700 \pm 100	12. 00	91	Pa	Protactinium	^a 3000	231
58	Ce	Cerium	600 \pm 50	140. 13	88	Ra	Radium	700	226. 05
55	Cs	Cesium	28 \pm 2	132. 91	86	Rn	Radon	-71	222
17	Cl	Chlorine	-101 ± 2	35. 457	75	Re	Rhenium	^a 3000	186. 31
24	Cr	Chromium	1800 \pm 50	52. 01	45	Rh	Rhodium	1966 \pm 3	102. 91
27	Co	Cobalt	1490 \pm 20	58. 94	37	Rb	Rubidium	39 \pm 1	85. 44
41	Cb	Columbium	2000 \pm 50	92. 91	44	Ru	Ruthenium	2500 \pm 100	101. 7
29	Cu	Copper	1083. 0 \pm 0. 1	63. 57	62	Sm	Samarium	>1300	150. 43
66	Dy	Dysprosium	-----	162. 46	21	Sc	Scandium	1200	45. 10
68	Er	Erbium	-----	167. 64	34	Se	Selenium	220 \pm 5	78. 96
63	Eu	Europium	-----	152. 0	14	Si	Silicon	1430 \pm 20	28. 06
9	F	Fluorine	-223 ± 10	19. 00	47	Ag	Silver	960. 5 \pm 0. 0	107. 880
64	Gd	Gadolinium	-----	157. 3	11	Na	Sodium	97. 7 \pm 0. 2	22. 997
31	Ga	Gallium	29.78 \pm 0.02	69. 72	38	Sr	Strontium	770 \pm 10	87. 63
32	Ge	Germanium	958 \pm 10	72. 60	16	S	Sulfur:	-----	32. 06
79	Au	Gold	1063. 0 \pm 0. 0	197. 2			Monoclinic	119. 2 \pm 0. 2	-----
72	Hf	Hafnium	^a 1700	178. 6			Rhombic	112. 8 \pm 0. 2	-----
2	He	Helium	^c $-271. 4 \pm 0. 2$	4. 002	73	Ta	Tantalum	3000 \pm 100	180. 88
67	Ho	Holmium	-----	163. 5	52	Te	Tellurium	450 \pm 10	127. 61
1	H	Hydrogen	$-259. 2 \pm 0. 1$	1. 0078	65	Tb	Terbium	327 \pm 5	159. 2
		H ₂ (normal)	$-259. 2 \pm 0. 1$	-----	81	Tl	Thallium	300 \pm 3	204. 39
		HD	$-256. 5 \pm 0. 2$	-----	90	Th	Thorium	1800 \pm 150	232. 12
		D ₂ (normal)	$-254. 5 \pm 0. 2$	-----	69	Tm	Thulium	-----	169. 4
61	Il	Illinium	-----	-----	50	Sn	Tin	231. 9 \pm 0. 1	118. 70
49	In	Indium	156. 4 \pm 0. 1	114. 76	22	Ti	Titanium	1520 \pm 100	47. 90
53	I	Iodine	114 \pm 1	126. 92	74	W	Tungsten	3410 \pm 20	184. 0
77	Ir	Iridium	2454 \pm 3	193. 1	92	U	Uranium	^a 3600	238. 14
26	Fe	Iron	1535 \pm 3	55. 84	23	V	Vanadium	1735 \pm 50	50. 95
36	Kr	Krypton	$-157 \pm 0. 5$	83. 7	54	Xe	Xenon	-112 ± 1	131. 3
57	La	Lanthanum	826 \pm 5	138. 92	70	Yb	Ytterbium	-----	173. 04
82	Pb	Lead	327. 4 \pm 0. 1	207. 22	39	Y	Yttrium	1490 \pm 200	88. 92
3	Li	Lithium	186 \pm 5	6. 940	30	Zn	Zinc	419. 5 \pm 0. 1	65. 38
71	Lu	Lutecium	-----	175. 0	40	Zr	Zirconium	1750 \pm 700	91. 22
12	Mg	Magnesium	650 \pm 2	24. 32	85	-----	Element 85	^a 250	-----
25	Mn	Manganese	1260 \pm 20	54. 93	87	-----	Element 87	^a 23	-----
43	Ma	Masurium	^a 2700	-----					
80	Hg	Mercury	$-38.87 \pm 0. 02$	200. 61					
42	Mo	Molybdenum	2625 \pm 50	96. 0					

^a Computed.

^b At 36 atmospheres.

^c At 30 atmospheres.

^d At 43 atmospheres.

U. S. GOVERNMENT PRINTING OFFICE: 1937

