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MELTING POINTS OF CHEMICAL ELEMENTS, AND OTHER
STANDARD TEMPERATURES

This table of melting points of the chemical elements is issued in answer to numerous requests for this information.

The values of the melting points used by the Bureau of Standards as standard temperatures for the calibration of thermometers and pyrometers are indicated in capitals. The other values have been assigned after a careful survey of all the available data.

As nearly as may be, all values, in particular the standard points, have been reduced to a common scale, the thermodynamic scale. For high temperatures, and for use with optical pyrometers, this scale is satisfied very exactly by taking $c_2 = 14500$ in the formula for Wien's law¹ connecting I , monochromatic luminous intensity of wave length λ , and T , absolute temperature: $\log I/I_1 = c_2 \lambda \log e (1/T_1 - 1/T)$. For all purposes, except the most accurate investigations, the thermodynamic scale is identical with any of the gas scales.

At high temperatures some of the values are quite uncertain; thus, while the melting point of platinum may be considered accurately known to 5° C that of tungsten is uncertain by 100° C or more. Temperatures centigrade are rounded off, and the exact Fahrenheit equivalents are usually given.

¹ See Bureau of Standards Circular 7 or Scientific Paper No. 11.

MELTING POINTS OF THE CHEMICAL ELEMENTS

Element	C	F	Element	C	F	Element	C	F
Helium.....	<-271	<-456	CADMIUM..	320.9	609.6	Cobalt.....	1480	2696
Hydrogen.....	-259	-434	LEAD.....	327.4	621.3	Yttrium.....	1490	2714
Neon.....	-253?	-423	ZINC.....	419.4	786.9	Chromium....	1520	2768
Fluorine.....	-223	-369	Tellurium....	452	846	IRON.....	1530	2786
Oxygen.....	-218	-360	ANTIMONY..	630.0	1166	PALLADIUM	1549	2820
Nitrogen.....	-210	-346	Cerium.....	640	1184	Zirconium....	1700?	3090
Argon.....	-188	-306	Magnesium...	651	1204	Columbium		
Krypton.....	-169	-272	ALUMINIUM	658.7	1217.7	(Niobium)...	1700?	3090
Xenon.....	-140	-220	Radium.....	700	1292	Thorium.....	>1700	>3090
Chlorine.....	-101.5	-150.7	Calcium.....	810	1490		<Pt.	<Pt.
MERCURY.....	- 38.9	- 38.0	Lanthanum...	810?	1490	Vanadium....	1720	3123
Bromine.....	- 7.3	+ 18.9	Strontium...	>Ca<Ba?		PLATINUM .	1755	3191
Caesium.....	+ 26	79	Neodymium...	840?	1544	Yttrium.....	?	
Gallium.....	30	86	Arsenic.....	850?	1562	Titanium.....	1800	3272
Rubidium....	38	100	Barium.....	850	1562	Uranium.....	<1850	<3362
Phosphorus...	44	111.2	Praseodymium	940?	1724	Rhodium.....	1950	3542
Potassium....	62.3	144	Germanium...	958	1756	Boron.....	2200-2500?	4000-4500
Sodium.....	97.5	207.5	SILVER.....	960.5	1761	Iridium.....	2350?	4262
Iodine.....	113.5	236.3	GOLD.....	1063.0	1945.5	Ruthenium...	2450?	4442
Sulphur.....	S _I 112.8	235.0	COPPER.....	1083.0	1981.5	Molybdenum .	2500?	4500
	S _{II} 119.2	246.6	Manganese...	1260	2300	Osmium.....	2700?	4900
	S _{III} 106.8	224.2	Samarium....	1300-1400	2370-	Tantalum....	2850	5160
Indium.....	155	311	Beryllium		2550	TUNGSTEN..	3000	5430
Lithium.....	186	367	(Glucinum)..	1350?	2462	Carbon.....	>3600	>6500
Selenium.....	217-220	422-428	Scandium....	?			for p=1 At.	for p=1 At.
TIN.....	231.9	449.4	Silicon.....	1420	2583			
Bismuth.....	271	520	NICKEL.....	1452	2646			
Thallium....	302	576						

OTHER STANDARD TEMPERATURES

Substance	Phenomenon	C	F	Variation with pressure (pressure in mm of Hg)
OXYGEN.....	Boiling.....	-183.0	-297.4	C° = -183.0 + 0.01258 (p-760) - 0.0000079 (p-760) ²
CARBON DIOX- IDE	Sublimation in in- ert liquid	- 78.5	-109.3	C° = -78.5 + 0.017 (p-760)
SODIUM SUL- PHATE Na ₂ SO ₄ + 10H ₂ O	Transformation in- to anhydrous salt	32.384	90.291	
WATER.....	Boiling.....	100	212	C° = 100 + 0.03670 (p-760) - 0.00002046 (p-760) ²
NAPHTHALENE.....	do.....	217.96	423.73	C° = 217.96 + 0.058 (p-760)
BENZOPHENONE.....	do.....	305.9	582.6	C° = 305.9 + 0.063 (p-760)
SULPHUR.....	do.....	444.6	832.3	C° = 444.6 + 0.0908 (p-760) - 0.000047 (p-760) ²
Ag ₃ Cu ₂	Eutectic freezing..	779	1434	
SODIUM CHLO- RIDE	Freezing.....	801	1472	

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