DEPARTMENT OF COMMERCE AND LABOR

BUREAU OF STANDARDS

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MELTING POINTS OF CHEMICAL ELEMENTS

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.[1]

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 law [2] 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.

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[1] A critical study of the status of our knowledge of the melting points of the elements with a summary of determinations will be published shortly in the Bulletin of the Bureau.

[2] See B. S. Circ. 7, or Reprint 11.

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Element	F	C	Element	F	C	Element	F	C
Helium	<−456	<−271	CADMIUM	609.6	320.9	Cobalt	2714	1490
Hydrogen	−434	−259	LEAD	621.1	327.4	Chromium	2750	1510
Neon	−423	−253?	ZINC	786.9	419.4	IRON	2768	1520
Fluorine	−369	−223	Tellurium	846	452	PALLADIUM	2820	1549
Oxygen	−360	−218	ANTIMONY	1166	630.0	Zirconium	3100	1700?
Nitrogen	−346	−210	Cerium	1184	640	Thorium	>3090	>1700
Argon	−306	−188	Magnesium	1204	651		<Pt.	<Pt.
Krypton	−272	−169	ALUMINIUM	1217.7	658.7	Vanadium	3150	1730?
Xenon	−220	−140	Calcium	1490	810	PLATINUM	3191	1755
Chlorine	−150.5	−101.5	Lanthanum	1490	810?	Beryllium	>3270	>1800?
MERCURY	− 37.7	− 38.7	Strontium		>Ca<Ba?	Ytterbium		?
Bromine	+ 18.9	− 7.3	Neodymium	1544	840?	Titanium	3450	1900?
Caesium	79	26	Arsenic	1560	850?	Rhodium	3525	1940
Gallium	86	30	Barium	1560	850	Ruthenium	>3550	>1950
Rubidium	100	38	Praseodymium	1725	940?	Columbium		
Phosphorus	111.4	44	Germanium	1756	958	(Niobium)	4000	2200?
Potassium	144	62.3	SILVER	1761	960.5	Boron	4000–4500	2200–2500
Sodium	207.5	97.5	Glucinum		>Ag			
Iodine	236.5	113.5	Radium		?	Iridium	4170	2300?
	S_I 235.0	112.8	GOLD	1945.5	1063.0	Uranium		?
Sulphur	S_{II} 246.6	119.2	COPPER	1981.5	1083.0	Molybdenum	4500	2500?
	S_{III} 224.2	106.8	Manganese	2237	1225	Osmium	4900	2700?
Indium	311	155	Yttrium		?	Tantalum	5160	2850
Lithium	367	186	Samarium	2370–2550	1300–1400	TUNGSTEN	5430	3000
Selenium	422–428	217–220				Carbon	>6500 for p=1 At.	>3600 for p=1 At.
TIN	449.4	231.9	Scandium		?			
Bismuth	520	271	Silicon	2588	1420			
Thallium	576	302	NICKEL	2646	1452			

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