

Melting Temperatures and Ranges

The temperature at which a single element or compound transforms from a solid to a liquid is the melting temperature. Materials that are mixtures or alloys generally do not melt at a single temperature but possess a melting range. The lower temperature of the range is the solidus temperature, below which the material is solid. The higher temperature is the liquidus, above which the material is liquid. Within the melting range, both solid and liquid are present.

Material	Product	Melting Temperature		Ref.
		(deg. F)	(deg. C)	
Cobalt-chromium alloys				
	Genesis II	2415-2550	1325-1400	9
	Master Tec	2215-2380	1215-1300	222
	Novarex	2425-2475	1330-1337	223
Gold Alloys				
Type I	Ney-Oro A	1825-1900	996-1038	7
Type II	Ney-Oro A-1	1650-1775	899- 968	7
Type III	Ney-Oro B-2	1650-1775	899- 968	7
Type IV	Ney-Oro G-3	1630-1740	888- 949	7
40% Au-Ag-Cu	Forticast	1555-1665	846- 907	9
10-15% Au-Ag-Pd	Paliney No.4	1670-1810	910- 988	7
Au-Pd	Olympia	2213-2380	1210-1304	9
Au-Pt-Pd	TPW	2012-2282	1100-1250	196
Porcelain-fused-to-metal				
	Jelenko O	2034-2206	1112-1208	9
Mercury		-37	-38	130
Nickel-chromium alloy				
	Unimetal	2098-2282	1148-1250	196
Palladium-based dental alloys				
	Athenium	2120-2330	1160-1277	197
	Legacy	2020-2360	1104-1293	197
	Liberty	2020-2280	1104-1249	197
	Microstar	2156-2336	1180-1280	9
	PTM-88	2120-2340	1160-1282	197
	Protocol	2320-2390	1271-1310	197
	Spartan	2040-2120	1116-1160	197
	W1	2165-2320	1185-1270	222

Pure metals

Chromium		3407	1875	130
Copper		1981	1083	130
Gold		1945	1063	130
Nickel		2647	1453	130
Palladium		2826	1552	130
Platinum		3217	1769	130
Silver		1761	961	130
Titanium		3035	1668	130
Zinc		787	420	130

Silver-palladium alloys

Crown-and-bridge	Albacast	1870-2010	1021-1099	9
Porcelain-fused-				
to-metal	Jel-5	2116-2341	1158-1283	9

Titanium-6Al-4V alloy		3002	1650	196
-----------------------	--	------	------	---------------------

Waxes

Beeswax	Ross Co.	93- 158	34- 70	68
Carnauba	Ross Co.	27- 189	53- 87	68
Inlay casting	Kerr blue hard	122- 176	50- 80	68
Paraffin	Ross Co.	111- 140	44- 60	68

[Introduction to Biomaterials Properties](#) | [Biomaterials Properties Table Listing](#) |

[References \(1-100\)](#) | [References \(101-200\)](#) | [References \(201-244\)](#) |

Revised April, 1996

Biomaterials Properties Database, University of Michigan

Contact: Dr William J. O'Brien, Director (FAX: 313-647-5293).

Copyright © Quintessence Publishing, 1996.

http://www.lib.umich.edu/dentlib/Dental_tables/Melttemps.html