

# PORCELAIN ALLOYS

	COMPOSITION %						PROPERTIES										APPLICATION									
	Alloy	Au	Pt	Pd	Ag	Cu	Other	Color	Implant Use	Laser Wire	CTE (500C)	VICKERS HARDNESS HV	Yield Strength (0.2%Offset) psi	MPa	Elongation %	Density dwt/in3 g/cm3	Melt Range °C		Casting Temperature °C		Burnout Temperature °C		Pre-Solder	Post-Solder		
																	°F	°C	°F	°C	°F	°C				
<b>Golden Gate System</b>	Degunorm®	73.8	9.0		9.2	4.4	Zn, In, Ir	Gold	Yes	Dugunorm	16.7	230	72,500	500	6	176	16.7	1650-1815	900-990	2010	1100	1300	700	Degunorm 880	Degunorm 728	
	Degudent® LS	73.1	1.5	5.8	16.0		Sn, Zn, Ir	Gold	Yes	Dugunorm	16.1	235	81,200	560	5	165	15.7	1805-1950	985-1065	2190	1200	1300	700	Degunorm 880	Degunorm 728	
	Multi-PF	69.0	10.0		13.5	5.5	Zn, Ir	Gold			16.6	230	77,000	530	18	169	16.0	1720-1890	940-1030	2060	1125	1300	700	Multi-Pre 880	.728	
	Ney-Oro® 66CF	60.0		6.0	30.0		Zn, In	Gold			17.1	240	82,000	565	8	150	14.2	1760-1975	960-1080	2140	1170	1200	650	Multi-Pre 880	.728	
	Stabilor® LS	58.0			12.9	25.0		Zn, Ir	White	Yes	Dugunorm	16.7	260	96,000	660	14	149	14.1	1870-1995	1020-1090	2280	1250	1300	700	Degunorm 880	Degunorm 728
	Sonoma®				37.0	56.0		Zn, Sn, Ir	White			16.5	180	47,900	330	10	115	10.9	1922-2066	1050-1130	2280	1250	1300	750	Multi-Pre 880, Degunorm 880	.728
<b>Premium Yellow High Noble</b>	UltraCrown™ PG	99.8					Zn, In, Ag, Mn	Gold	No	No	15.0	40	5,800	40	30	202	19.2	1920-1940	1050-1060	2160	1180	1300	700	Bio-Pre		
	Bioney®	90.0	7.2		1.0		Zn, In, Fe, Re	Gold			14.8	180	69,600	480	9	199	18.9	1890-2000	1030-1095	2175	1190	1300	700	Bio-Pre	.650	
	Degudent® G	86.0	10.4				In, Rh, Ta	Gold		Degutan	14.5	195	68,000	470	9	194	18.4	1915-2085	1045-1140	2370	1300	1470	800	Dugudent G-1	Degulor 2	
	BiOcclus® 4	85.8	11.0				Zn, In, Rh, Ta	Gold		Degutan	14.2	210	76,900	530	8	200	19.0	1900-2085	1040-1140	2370	1300	1470	800	Dugudent G-1	Degulor 2	
	Image 2	84.5	6.9	5.0	1.0		Zn, In, Fe, Re	Gold	Yes		14.5	230	97,300	671	7	190	18.0	1994-2183	1090-1195	2354	1290	1300	700	YPG	.650/.615	
	Degudent® H	84.4	8.0	5.0			In, Ta	Gold	Yes	Degutan	14.2	220	87,000	600	3	191	18.1	2010-2210	1100-1210	2550	1400	1560	850	YPG	Degulor 2	
	Super Bioney®	82.4	14.9				Zn, Re, Fe	Gold			14.2	220	87,000	600	6	198	18.8	1904-2048	1040-1120	2210	1210	1300	700	Bio-Pre	.650	
	Degudent® Kiss	79.4	10.5	6	1.3		In, Ir, Ta, Zn	Lt.Gold	Yes		14.1	230	85,550	590	4		18.2	2084-2228	1140-1220	2500	1370	1560	850	YPG	Degulor 2	
	UltraCrown™ HG	74.4	4.5	7.9	9.7		In, Sn, Zn, Ir	Lt. Gold			15.0	195	74,700	515	8	176	16.7	2030-2120	1110-1160	2400	1315	1470	800	YPG	.650/.615	
<b>Premium White High Noble</b>	SMG®-3	81.0	6.0	11.0			Re, Sn, Fe	White	Yes		13.9	240	101,500	700	5	183	17.4	2120-2318	1160-1270	2430	1335	1300	700	SMG-3/Ceramco White	.650/.615	
	SMG®-PF	78.0	20.0				Zn, In, Ir	White			13.9	215	87,000	600	5	200	19.0	1976-2399	1080-1315	2580	1415	1300	700	SMG-2	.650	
	Degudent® U	77.3	9.8	8.9	1.2	0.3	In, Fe, Ir, Re, Sn	White	Yes	Degutan	13.8	240	84,100	580	3	190	18.0	2100-2300	1150-1260	2550	1400	1560	850	YPG	Degulor 2	
<b>High Noble</b>	SMG®-CF	67.4		22.0	4.9		In, Ga, Ru	White			14.2	220	82,000	565	7	164	15.6	2183-2309	1195-1265	2530	1390	1470	800	SMG-3	.650/.615	
	UltraCrown™ SF	65.0		26.0			In, Ga, Ru, Sn	White	Yes		14.2	254	84,000	580	8	156	14.8	2084-2313	1140-1267	2530	1390	1470	800	SMG-3	.650/.615	
	Deva® Plus	55.1		34.5			In, Ga, Ir	White	Yes	Degutan	13.7	260	89,900	620	11	156	14.8	2175-2325	1190-1275	2550	1400	1650	900	YPG/WPG	Regular White	
	Eclipse	52.0		37.5			Zn, In, Sn, Re	White	Yes	Degutan	13.8	254	83,400	575	23	145	13.8	2120-2309	1160-1265	2498	1370	1300	700	SMG-3/Ceramco White	.650/.615	
	Aspire	52.0		25.6	17.0		Zn, In, Sn, Re	White	Yes	Degutan	14.7	210	52,000	360	44	150	14.2	2140-2280	1170-1250	2500	1370	1470	800	SMG-3 or Silver Free Pre	.650	
	Deva® 4	51.1		38.5			In, Ga, Ir	White	Yes		13.5	235	79,000	545	18	153	14.5	2255-2400	1235-1315	2600	1425	1650	900	Ceramco White/WPG	Regular White/Degulor 2	
	Ceramco White	50.3		30.2	14.4		Sn, In, Ru	White		Degutan	14.4	220	61,600	425	10	153	14.5	2300-2345	1260-1285	2550	1400	1560	850	Ceramco White/YPG	Regular White	
	Encore	48.0		40.0			Zn, Sn, In, Re	White		Degutan	14.1	250	85,900	592	20	141	13.4	2113-2330	1156-1275	2525	1385	1300	700	SMG-3/Ceramco White	.650/.615	
	Special White	45.0		39.8	6.5		In, Ga, Ru, Sn	White	Yes		14.1	260	89,900	620	10	152	14.4	2120-2300	1160-1260	2460	1350	1560	850	YPG/ WPG	Regular White/Degulor 2	
	Veritas	40.0		45.0	4.9		Zn, Re, In, Sn	White		Degutan	14.1	232	61,600	425	40	137	13.0	2210-2390	1210-1310	2525	1385	1300	700	WPG/Ceramco White	.650/.615	
	<b>High Palladium Noble</b>	Ceramco® Press Pd	2.0		79.0			Sn, Co, Ga, Ru	White			14.0	240	82,000	565	20	115	10.9	2071.2332	1133-1278	2500	1370	1500	815	Silver Free Pre	.615/Regular White
Ovation®		3.0		69.8	9.7		Zn, In, Ga, Ru, Sn,B	White	Yes		14.0	255	92,800	640	16	113	10.7	2110-2345	1155-1285	2530	1385	1400	760	SMG- YW	.650	
Degubond Ultra		2.0		74.4	12.5	8.3	Zn, In, Ga, Ru	White		No	13.8	230	76,900	530	24	121	11.5	2120-2355	1160-1290	2640	1450	1650	900	YPG	Regular White	
Ultima Gold		2.0		77.1		10.0	Zn, In, Ga, Ru	White			14.2	245	80,000	550	28	113	10.7	2120-2335	1160-1280	2450	1345	1300	700	Option Pre/Ceramco White	Degulor 2/.615	
Option®		2.0		78.8		8.0	Ga, B, Ir	White	Yes		14.3	425	130,500	900	23	112	10.6	2012-2174	1100-1190	2354	1290	1300	700	Option Pre/YPG	Degulor 2/.615	
Ultima Lite®				78.4			Zn, In, Ga, Ru	White		Degutan	14.2	300	82,000	565	15	113	10.7	2147-2291	1175-1255	2453	1345	1300	700	Option Pre/Ceramco White	Degulor 2/.615	
<b>Palladium Silver Noble</b>	Pors-on™ Lite			61.4	26.0		Sn, Zn, In, Ru	White			14.5	250	85,600	590	16	119	11.3	2140-2335	1170-1280	2600	1425	1650	900	YPG	Degulor 2	
	Degubond 60			60.4	28.0		Sn, In, Ga, Ru, Ir	White	Yes	No	14.7	260	95,700	660	12	118	11.2	2235-2335	1225-1280	2600	1425	1560	850	Ceramco White	Regular White	
	Lunar®			60.0	29.5		Zn, Ir, In, Ga, Sn	White			14.7	244	64,000	440	35	116	11.0	2156-2354	1180-1290	2500	1370	1500	815	SMG-YW	.650/.615	
	Pors-on™ Plus	15.5		47.5	27.5		Sn, Zn, In, Ru	White		Degutan	14.6	250	87,800	605	15	126	12.0	2140-2290	1170-1255	2550	1400	1650	900	YPG/Dugudent G-1	Regular White/Degulor 2	
	Degustar® GA-2	2.0		52.0	36.0		Sn, Zn, In, Ru	White	Yes	Degutan	14.8	250	81,200	560	10	118	11.3	2100-2245	1150-1230	2550	1400	1560	850	YPG	Regular White	
	Applause			54.9	35.0		Zn, Ir, Sn	White			15.1	240	85,500	590	11	114	10.8	2156-2300	1180-1260	2453	1345	1300	700	SMG-YW/Ceramco White	.650/.615	
	Acclaim® Lite			50.0	40.0		In, Ga, Ru, Re	White		Degutan	15.1	300	92,100	635	10	113	10.7	2102-2309	1150-1265	2440	1340	1300	700	WPG	.650/.615	
<b>Base Metal</b>	Duceranium U		Ni	Cr	Mo	Be																				
		59.0	21.5	4.5	0.0		Mn, Si, Co, C, Fe, W	White			14.1	200	48,600	335	17	89	8.5	2417-2425	1320-1330	2700	1480	1650	900	Ceramco White	None	

## Porcelain Pre Solder Specifications

Pre-Solder	Color	Flow Temp F	Flow Temp C
SMG-YW	White	2120	1160
SMG-3	Gold	2085	1140
Ceramco White	White	2084	1140
WPG	White	2048	1120
Silver Free Pre	White	2048	1120
SMG-2	Gold	2030	1110
YPG	Gold	1950	1065
Option Pre	White	1940	1060
Bio-Pre	Gold	1905	1040
Degudent G1	Gold	1886	1030
Degunorm 880	Gold	1616	880
Multi-Pre 880	Gold	1615	880

## Porcelain Post Solder Specifications

Post Solder	Color	Flow Temp F	Flow Temp C
Paliney #4	White	1815	990
Paliney Med. Fusing	White	1600	870
Balanced Line	Gold	1545	840
.650 Fine	Gold	1470	800
.615 Fine	Gold	1470	800
.585 Fine	Gold	1435	780
.490 Fine	Gold	1410	765
Degulor2	Gold	1380	750
Regular White	White	1364	740
.728 Fine	Gold	1290	700
Degunorm 728	Gold	1290	700

# CROWN AND BRIDGE ALLOYS

## COMPOSITION %

## PROPERTIES

## APPLICATION

### Premium High Noble

Alloy	COMPOSITION %							Type	Color	Implant Use	Laser Weldable <sup>2</sup>	VICKERS HARDNESS		Yield Strength <sup>1</sup>		Elongation %	Density		Melt Range		Casting Temperature		Burnout Temperature		Solder
	Au	Pt	Pd	Ag	Cu	Other	HV					psi	MPa	dwt/in. <sup>3</sup>	g/cm <sup>3</sup>		°F	°C	°F	°C	°F	°C			
Ney-Oro® PF-CB	80.0	1.0		9.0	9.0	Zn, Ir	III	Gold				126	39,900	275	45	171	16.2	1625-1715	885-935	1875	1025	1200	650	.650/.728	
Ney-Oro® A-1	77.5		2.0	12.5	7.3	Zn	II	Gold				125	33,400	230	48	169	16.0	1702-1774	928-968	1940	1060	1200	650	Balanced Line/.650	
Ney-Oro® B-2	74.0		4.0	11.5	9.5	Zn	III	Gold				185	46,600	321	39	159	15.1	1679-1771	915-966	1940	1060	1200	650	Balanced Line/.650	
Degunorm	73.8	9.0		9.2	4.4	Zn, Ir, Ir	IV	Gold	Yes	Yes		230	72,500	500	6	176	16.7	1650-1815	900-990	2012	1100	1300	700	Degunorm 728	
Ney-Oro® G-3	68.5	2.5	4.0	12.0	11.0	Zn	IV	Gold	Yes			282	100,000	690	13	154	14.6	1663-1740	906-949	1913	1045	1200	650	Balanced Line/.650	
Primallor G	67.5	1.0	3.0	13.5	14.0	Zn, Ir	IV	Gold	Yes	Yes		260	94,200	650	13	155	14.7	1580-1690	860-920	2010	1100	1300	700	Degulor 2	
Ney-Oro® PF-4	66.0	6.5		12.5	13.0	Zn, Ir	IV	Gold	Yes			274	116,000	800	7	159	15.1	1598-1733	870-945	1900	1035	1200	650	.585	
Ney-Oro® #5	63.0		5.0	19.0	12.0	Zn	IV	Gold	Yes			260	99,000	685	15	152	14.4	1635-1733	890-945	1895	1035	1200	650	.650/.615	
Ney-Oro® B-20	61.8		3.0	26.0	8.0	Zn	III	Gold				205	80,500	555	19	147	13.9	1630-1742	885-950	1904	1040	1200	650	.650/.615	
Ney-Oro® CB	59.0		4.0	22.5	13.5	Zn	IV	Gold	Yes			275	115,000	795	11	146	13.9	1580-1661	860-905	1823	995	1200	650	.615	
Ney-Oro® 60	56.0		4.0	19.9	17.0	Zn, Ir	IV	Gold	Yes			265	114,600	790	8	141	13.4	1540-1589	835-865	1751	955	1200	650	.490	

### Noble

G-Cast	50.0		5.0	32.0	12.0	Zn, Ir	III	Gold		Yes		235	118,000	815	8	141	13.4	1580-1700	860-925	2050	1125	1300	700	Degulor 2
Majority®	50.0		4.5	10.0	31.0	Zn	III	Gold				220	76,300	526	7	132	12.5	1540-1630	835-885	1814	990	1200	650	.585
Miracast	40.9	1.0	4.0	9.0	38.0	Zn	III	Gold				128	49,300	340	39	124	11.8	1544-1700	840-925	1877	1025	1200	650	.650/.615
Ney-Oro® 41	20.0	1.0	20.0	39.0		Ir, Zn	III	Gold				185	58,800	405	6	123	11.7	1580-1895	860-1035	2070	1130	1200	650	.585

### Palladium Silver Noble

Pallig® M	2.0		27.4	58.5	10.5	Zn, Ir	IV	White	Yes	Yes		310	136,300	940	3	117	11.1	1740-1905	950-1040	2190	1200	1300	700	Regular White or Degulor 2
Ney® 76			25.0	59.0	14.0	Zn	III	White				235	95,700	660	9	110	10.5	1650-1800	900-980	1976	1080	1200	650	Paliney Med. Fuse

### Crown & Bridge Solder Specifications

Solder	Color	Flow Temp	
		°F	°C
Balanced Line	Gold	1545	840
.650 Fine	Gold	1470	800
.615 Fine	Gold	1470	800
.585 Fine	Gold	1435	780
.490 Fine	Gold	1410	765
Degulor 2	Gold	1382	750
Regular White	White	1364	740
Degunorm 728	Gold	1290	700
.728 Fine	Gold	1290	700
Paliney Medium Fusing	White	1600	870

All mechanical properties are for the heat treated or hard condition.

<sup>1</sup> 0.2% Offset

<sup>2</sup> Laser Weldable with Degutan (white) or Degunorm (gold) laser wire

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