

remanium® Crown and bridge NiCr alloys at a glance

	remanium® CSe	remanium® CS+	remanium® G-soft																								
Characteristics	Latest generation NiCrMo bonding alloy in a user friendly condition.	Classical NiCrMo bonding alloy with top working characteristics. Small casting cubes.	Well proven NiCrMo casting alloy for full gold crowns and for veneering with acrylic composite.																								
Applications	Multi-purpose alloy: <ul style="list-style-type: none"> □ Crowns and bridges □ Double crowns □ Supra structures □ Maryland bridges 	Multi-purpose alloy: <ul style="list-style-type: none"> □ Crowns and bridges □ Double crowns □ Supra structures □ Maryland bridges 	Multi-purpose alloy: <ul style="list-style-type: none"> □ Crowns and bridges □ Double crowns □ Supra structures □ Maryland bridges 																								
Advantages	<ul style="list-style-type: none"> □ excellent porcelain fusion □ easy handling □ biocompatible, beryllium free □ no slow cooling □ easy to melt 	<ul style="list-style-type: none"> □ excellent porcelain fusion □ easy handling □ biocompatible, beryllium free □ no slow cooling □ easy to melt 	<ul style="list-style-type: none"> □ easy handling □ biocompatible, beryllium free □ easy to melt 																								
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Ni	Cr	Mo	Si																								
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Summary relevant characteristics																											
Melting	+++	+++	+++																								
Castability	+++	+++	+++																								
Propane/oxygen melt	+++	+++	+++																								
Trimming	+++	++	+++																								
Milling	+++	++	+++																								
Ceramic bonding	+++	+++	-																								
Polishing	+++	+++	+++																								
Oxid bake	no	no	no																								
Soldering with CoCr-Solder	REF 102-302-00	REF 102-302-00	REF 102-302-00																								
Laser welding	+++ NiCr welding wire REF 528-220-00	+++ NiCr welding wire REF 528-220-00	+++ NiCr welding wire REF 528-220-00																								
Investment material	Trivest, Castorit® all speed, Castorit®-super C	Trivest, Castorit® all speed, Castorit®-super C	Trivest, Castorit® all speed, Castorit®-super C																								
Mechanical characteristics																											
Yield strength R _{p0.2} (MPa)	340	340	310																								
Tensile strength R _m (MPa)	580	580	550																								
Modulus of elasticity E (GPa)	170	170	165																								
Hardness HV 10	195	195	210																								
Elongation A ₅ (%)	15	15	8																								
Solidus temperature (°C/°F)	1260/2300	1260/2300	1210/2210																								
Liquidus temperature (°C/°F)	1350/2462	1350/2462	1240/2264																								
Density (g/cm ³)	8.2	8.2	8.2																								
CTE (25–500°C/77–932°F) (K ⁻¹)	14 x 10 ⁻⁶	14 x 10 ⁻⁶	-																								
Ordering informations																											
Availability	50 g REF 102-401-05 1000 g REF 102-403-05	50 g REF 102-401-00 250 g REF 102-402-00 1000 g REF 102-403-00	1000 g REF 100-001-00																								
Safety through certified quality 0483																											

Best biocompatibility: Laboratory tests confirm the outstanding corrosion resistance, and tests conducted by independent institutes acknowledge the biological compatibility on the basis of cytotoxicity tests. Please request our certifications. All NiCr crown and bridge alloys are free of beryllium, gallium, indium and copper.

+++ = excellent - = not suitable

remanium® Crown and Bridge CoCr alloys at a glance

	remanium® star	remanium® 2000+																		
Characteristics	remanium® star is a CoCr ceramic bonding alloy of a new generation with exceptionally reduced hardness.	remanium® 2000+ is a CoCr ceramic bonding alloy of a new generation. This alloy is the result of our continuous development of our classic remanium® 2000. Optimal physical properties due to the continuous casting technique.																		
Applications	Multi-purpose alloy: <ul style="list-style-type: none"> ▣ Crowns and bridges ▣ Double crowns ▣ Implant supported supra structures ▣ Maryland bridges ▣ Secondary structures for cast partial denture (Combination work) 	Multi-purpose alloy: <ul style="list-style-type: none"> ▣ Crowns and bridges ▣ Double crowns ▣ Implant supported supra structures ▣ Maryland bridges ▣ Secondary structures for cast partial denture (Combination work) 																		
Advantages	<ul style="list-style-type: none"> ▣ extremely easy to work with, especially when milling or polishing due to the reduced hardness ▣ excellent ceramic bake because of the low thermal expansion coefficient ▣ exceptionally free-flowing ▣ flexibility in casting: Can be melt in a high frequency induction casting unit, or with the propane/oxygen torch ▣ increased efficiency: <ul style="list-style-type: none"> ✓ oxide bake is not necessary ▣ suitable for laser welding because carbon-free 	<ul style="list-style-type: none"> ▣ exceptionally free-flowing ▣ flexibility in casting: <ul style="list-style-type: none"> can be melted in a high frequency induction casting unit, or with the propane/oxygen torch ▣ increased efficiency: <ul style="list-style-type: none"> ✓ oxide bake is not necessary ▣ suitable for laser welding because carbon-free ▣ the surface of ingot of 6 grams produced by the continuous casting technique is 30 % lower than the surface of an ingot produced by the investment casting technique. This results in less oxides in the crucible. 																		
Composition (Percentage by mass)	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Co</th> <th>Cr</th> <th>W</th> <th>Si</th> </tr> </thead> <tbody> <tr> <td>60.5</td> <td>28</td> <td>9</td> <td>1.5</td> </tr> </tbody> </table>	Co	Cr	W	Si	60.5	28	9	1.5	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Co</th> <th>Cr</th> <th>Mo</th> <th>W</th> <th>Si</th> </tr> </thead> <tbody> <tr> <td>61</td> <td>25</td> <td>7</td> <td>5</td> <td>1.5</td> </tr> </tbody> </table>	Co	Cr	Mo	W	Si	61	25	7	5	1.5
Co	Cr	W	Si																	
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61	25	7	5	1.5																
Other < 1%	Mn, N, Nb	Mn, N																		

Summary relevant characteristics

Melting	+++	+++
Castability	+++	+++
Propane/oxygen melt	+++	+++
Trimming	+++	++
Milling	+++	++
Ceramic bonding	+++	+++
Polishing	+++	+++
Oxid bake	no	no
Soldering with CoCr-Solder	REF 102-306-00	REF 102-306-00
Laser welding	+++	+++
Investment material	Trivest, Castorit® all speed, Castorit®-super C	Trivest, Castorit® all speed, Castorit®-super C

Mechanical characteristics

Yield strength $R_{p0.2}$ (MPa)	620	700
Tensile strength R_m (MPa)	845	900
Modulus of elasticity E (GPa)	190	200
Hardness HV 10	280	340
Elongation A_5 (%)	10.2	7
Solidus temperature (°C/°F)	1320/2408	1290/2354
Liquidus temperature (°C/°F)	1420/2588	1415/2579
Density (g/cm ³)	8.6	8.6
CTE (25–500 °C/77–932 °F) (K ⁻¹)	14.1 x 10 ⁻⁶	14 x 10 ⁻⁶

Ordering informations

Availability	50 g REF 102-621-00 250 g REF 102-622-00 1000 g REF 102-620-00	50 g REF 102-601-10 250 g REF 102-602-10 1000 g REF 102-600-10
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Safety through certified quality 0483

Best biocompatibility: Laboratory tests confirm the outstanding corrosion resistance, and tests conducted by independent institutes acknowledge the biological compatibility on the basis of cytotoxicity tests. Please request our certifications. All CoCr crown and bridge alloys are free of beryllium, iron (except remanium® LFC), nickel, gallium, indium and copper.

remanium® securia	remanium® 2001	remanium® LFC																																
<p>remanium® securia is a new generation chrome cobalt metal-ceramic alloy, that shows reliable handling characteristics with all casting techniques, especially vacuum/pressure casting.</p> <p>Multi-purpose alloy:</p> <ul style="list-style-type: none"> ▣ Crowns and bridges ▣ Double crowns ▣ Implant supported supra structures ▣ Maryland bridges ▣ Secondary structures for cast partial denture (Combination work) <p>▣ reliable melting and casting characteristics, especially with vacuum/pressure casting, resulting from the narrow melting range.</p> <p>▣ no danger of spattering or increased slagging</p> <p>▣ small ingots (4 g) allow exact portioning of the alloy; ideal and economical filling of the crucible</p> <p>▣ high mechanical strength thanks to tantalum mixed-crystal reinforcement</p> <p>▣ optimised bake behaviour of the veneering ceramic through low oxidation</p> <p>▣ polished surface has a radiant lustre due to the high chrome content.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Co</th> <th>Cr</th> <th>Mo</th> <th>W</th> <th>Si</th> <th>Ta</th> </tr> <tr> <td>58</td> <td>30</td> <td>3</td> <td>5.5</td> <td>1.5</td> <td>1.25</td> </tr> </table> <p>N</p>	Co	Cr	Mo	W	Si	Ta	58	30	3	5.5	1.5	1.25	<p>remanium® 2001 is a CoCr ceramic bonding alloy for crown and bridgework. Optimal physical properties due to the continuous casting technique.</p> <p>Multi-purpose alloy:</p> <ul style="list-style-type: none"> ▣ Crowns and bridges ▣ Double crowns ▣ Maryland bridges <p>▣ exceptionally free-flowing</p> <p>▣ flexibility in casting: <ul style="list-style-type: none"> ▣ can be melt in a high frequency induction casting unit, or with the propane/oxygen torch </p> <p>▣ increased efficiency: <ul style="list-style-type: none"> ✓ oxide bake is not necessary </p> <p>▣ suitable for laser welding because carbon-free</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Co</th> <th>Cr</th> <th>Mo</th> <th>W</th> <th>Si</th> </tr> <tr> <td>63</td> <td>23</td> <td>7.3</td> <td>4.3</td> <td>1.6</td> </tr> </table> <p>Mn, N</p>	Co	Cr	Mo	W	Si	63	23	7.3	4.3	1.6	<p>remanium® LFC is a modern chrome cobalt alloy specially designed for metal-ceramic veneering of crown and bridgework using low-fusing ceramic (LFC).</p> <p>Multi-purpose alloy:</p> <ul style="list-style-type: none"> ▣ Crowns and bridges ▣ Double crowns ▣ Secondary structures for cast partial denture (Combination work) <p>▣ excellent melting and casting behaviour with all melting and casting techniques</p> <p>▣ effortless trimming and polishing</p> <p>▣ free from nickel and beryllium</p> <p>▣ high purity resulting from continuous casting production</p> <p>▣ multi-indicative</p> <p>▣ reliable veneering using LFC-ceramics which, until now, were used only with precious alloys</p> <p>▣ high corrosion resistance</p> <p>▣ high mechanical strength</p> <p>▣ good laser welding characteristics</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Co</th> <th>Cr</th> <th>Fe</th> <th>Mo</th> <th>Mn</th> </tr> <tr> <td>33</td> <td>30</td> <td>29</td> <td>5</td> <td>1.5</td> </tr> </table> <p>Si, N, C</p>	Co	Cr	Fe	Mo	Mn	33	30	29	5	1.5
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760	660	660																																
940	850	950																																
211	195	200																																
340	336	315																																
5.3	5.5	11																																
1329/2424.2	1325/2417	1280/2336																																
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50 g REF 102-631-00 250 g REF 102-632-00 1000 g REF 102-630-00	50 g REF 102-600-02 1000 g REF 102-600-01	50 g REF 102-641-00 250 g REF 102-642-00 1000 g REF 102-640-00																																

+++ = excellent ++ = very good

¹ LFC = Low Fusing Ceramics