

Dental solders: instructions for use

(Products with catalogue number in the appendix)

Precautions

Mixing of different solders or solders of similar types is not allowed!

The use of solder/alloy combination not listed is subject to the user's risk!

Wear darkened eye protection and protective gloves when soldering.

Protect, hands and breathing during pickling.

While working with rotating instruments, wear safety glasses, gloves and a dust mask and use an aspiration device.

Upon publication, these instructions for use supersede all previous editions.

The manufacturer is not liable for any damages due to the user disregarding the instructions for use below.

Intended use

Fixed and removable dentures.

Product description

Precious metal solders are used for connecting precious metal alloys. When soldering, the parts to be connected are heated so much that the solder can flow into the solder joint. The solidus of the alloy must be higher than the liquidus of the solder. For porcelain fused to metal alloys, there are solders before and after the ceramic bond. Pre-solders do not melt during ceramic firing. The highest firing temperature must therefore be below the solidus of the solder. Conversely, a solder used after the ceramic bond should not harm the ceramic during the ceramic firing. The liquidus of these solders should be lower than the lowest firing temperatures of ceramics.

Expected clinical benefit

Restoration of chewing function and improved aesthetics.

Qualification

Professional dentist and dental technician know-how is required. The instructions for use must be available and understood before the first application. The manufacturing work must be carried out by qualified specialists. For information and additional details, please contact your Cendres+Métaux representative.

Side effects

With patients having an existing allergy to one or several elements contained in an alloy, this particular alloy must not be used. With patients suspected of having an allergy to one or several elements contained in an alloy, this alloy can only be used after preliminary allergological testing and proof of a non-existing allergy.

Traceability of lot numbers

If different lots of a solder are being used for the realisation of a restoration, all lot numbers concerned must be noted in order to assure traceability.

Choosing the correct solder

The elements to be soldered have to remain in the solid state during the process of soldering. Therefore, it is imperative that the liquidus point of the respective solder is below the solidus point of the alloy to be soldered.

Soldering flux

In order to avoid a premature oxidation of the surfaces to be soldered it is recommended to cover them completely with a soldering flux before any heat treatment.

The following soldering flux can be used for the soldering of precious metal alloys:

1. Flame soldering: CM soldering paste
2. Soldering in a furnace: CM soldering paste

Soldering investments

The Cendres+Métaux soldering investment is specified for the fixation of the elements to be soldered. To achieve a precise fit of the soldered work it is advisable to follow the instructions for use of the respective manufacturer of soldering investments.

Preparation of the surfaces to be soldered

For any type of soldering, a soldering gap of 0.05–0.20 mm will be most appropriate. This ensures that the liquid solder will be aspirated into the soldering gap by capillary force. If the soldering gap is larger than 0.2 mm, it is recommended to place a piece of the same alloy to be soldered into the soldering gap in order to reinforce the soldered connection. The surfaces of the soldering areas should measure at least 6–9 mm² for sufficient stability. In addition, these surfaces should be larger in the vertical than in the horizontal sense for better resistance to masticatory forces.

Porous soldering joint








After finishing and polishing of the restoration, the solder has to present a surface free of any cavities or porosities to avoid being a source of corrosion.

Benchcooling of the soldered work

Do not quench neither the soldering blocks nor free-hand soldered restorations, but benchcool to room temperature. Oxides arising on high gold metal alloys and high precious metal alloys can be eliminated by pickling in a warm and freshly prepared (clean) solution of 10 vol.-% sulphuric acid (H₂SO₄). Oxides arising on palladium-based alloys can be eliminated by sandblasting.

Note: When using other pickling agents follow the instructions for use of the respective manufacturer.

Labelling on the packaging/ Symbols

	Date of manufacture
	Manufacturer
	Catalogue number
	Batch code
	Quantity
	Consult instructions for use URL: cmsa.ch/docs
Rx only	Attention: according to US federal law, this product may only be sold by or on behalf of a physician.
 1250	Cendres+Métaux products with CE labelling meet the requirements of the Medical Device Directive 93/42/EEC.

Solders	Cat. No.	Application Flame soldering	Application Soldering in the ceramic furnace	Colour	Composition in weight %								
					Au- + Pt-Met.	Au	Pt	Pd	Ag	Cu	Zn	Ir	Others
Rods ∅ 0.8mm, length 200 mm													
S.G 700	010875	✓	✓	Yellow	72.90	72.40	0.45		10.20	2.90	12.00	0.05	In 2.00
S.G 750	010895	✓	✓	Yellow	76.10	75.10	1.00		11.75		12.15		
S.G 810	010916	✓	✓	Yellow	76.10	75.10	1.00		14.50		9.40		
S.G 880	010878	✓		Yellow	78.90	75.90	2.90		10.20	5.90	5.00	0.10	
S.G 920	010974	✓		Yellow	89.10	88.10	0.90		3.00	5.10	2.80	0.10	
S.G 975	011003	✓		Yellow	93.75	93.50	0.20		0.50	4.45	1.20	0.05	Fe 0.10
S.G 1030	010822	✓		Yellow	85.50	85.00	0.45		13.50		1.00	0.05	
S.G 1055	010888	✓		Yellow	82.40	80.00	2.40		16.90		0.70		
S.G 1080	010819	✓		Bright Yellow	83.00	80.00	3.00		17.00				
S.G 1120	01050030	✓		Pale Yellow	80.10	75.10		5.00	18.90				Sn 1.00
S.G 1155	010826	✓		Pale Yellow	78.00	64.50	5.00	8.50	20.00		2.00		
S.G 1100	010918	✓		White	80.50	72.50		7.90	14.50	4.00		0.10	In 1.00
S.G 1125	01050031	✓		White	95.50	85.00		10.50			4.50		

Solders	Melting range	Recommended temperatures when soldering in ceramic furnaces	Recommended flux
S.G 700	650–710 °C	770 ($T_L + 60^\circ\text{C}$)	CM soldering paste
S.G 750	700–750 °C	810 ($T_L + 60^\circ\text{C}$)	CM soldering paste
S.G 810	740–810 °C	870 ($T_L + 60^\circ\text{C}$)	CM soldering paste
S.G 880	840–880 °C	940 ($T_L + 60^\circ\text{C}$)	CM soldering paste
S.G 920	880–920 °C	980 ($T_L + 60^\circ\text{C}$)	CM soldering paste
S.G 975	935–975 °C		CM soldering paste
S.G 1030	990–1040 °C		CM soldering paste
S.G 1055	1020–1070 °C		CM soldering paste
S.G 1080	1060–1080 °C		CM soldering paste
S.G 1120	1040–1120 °C		CM soldering paste
S.G 1155	1060–1155 °C		CM soldering paste
S.G 1100	1010–1100 °C		CM soldering paste
S.G 1125	1010–1130 °C		CM soldering paste

Flux

	Recommended range of use	Temperature range	Recommended mixtures for flames
CM soldering paste	Flame soldering for precious metal alloys	600–1160 °C	Mixture: Propane / Oxygen or natural gas / compressed air
	Soldering in a ceramic furnace after firings	600–1000 °C	

Assignment of solders to alloys

Alloys	Before firing		After firing	
Ceramic alloys				
Ceradelta	S.G 1120		S.G 750	
Ceradelta 2	S.G 1120		S.G 750	
Cerapall 2	S.W 1125	S.G 1080	S.G 750	
Cerapall 6	S.W 1125	S.G 1120	S.G 750	
Estetico [®] Accurate 40	S.W 1125		S.G 750	
Estetico [®] Actual	S.W 1100		S.G 810	S.G 750
Estetico [®] Avenir	S.G 1030		S.G 810	S.G 750
Estetico [®] Biennor CF	S.G 1055			
Estetico [®] Blancor	S.W 1100		S.G 750	
Estetico [®] CC	S.W 1125		S.G 750	
Estetico [®] Cosmor H	S.G 1080		S.G 810	S.G 750
Estetico [®] Economic	S.W 1100		S.G 810	S.G 750
Estetico [®] Helvetica	S.G 1030		S.G 810	S.G 750
Estetico [®] Ideal H	S.G 1030		S.G 810	S.G 750
Estetico [®] Lumina PF	S.G 975	S.G 1030	S.G 750	
Estetico [®] NewStart	S.W 1100		S.G 810	S.G 750
Estetico [®] N2	S.W 1100		S.G 810	S.G 750
Estetico [®] Plus	S.W 1100		S.G 810	S.G 750
Estetico [®] Prestige	S.G 1080		S.G 810	S.G 750
Estetico [®] Royal H	S.G 1055		S.G 810	S.G 750
Estetico [®] Special	S.G 1080		S.G 810	S.G 750
V-Classic	S.W 1125		S.G 750	
V-Delta SF	S.W 1125	S.G 1120	S.G 750	
V-Delta Special	S.W 1100		S.G 750	
V-Deltaloy	S.W 1100	S.G 1080	S.G 750	
V-Gnathos Plus	S.W 1030		S.G 750	

Alloys	Before firing		After firing	
Ceramic alloys for dental restorative systems on implants				
Estetico [®] Implant 32	S.G 1055	S.G 1030	S.G 750	
Estetico [®] Implant 58	S.G 1055	S.G 1030	S.G 750	
Estetico [®] Implant 76	S.G 1055	S.G 1030	S.G 750	
Universal alloys				
BioEthic	S.G 1030		S.G 810	S.G 750
DGV08 H	S.G 880		S.G 700	
Estetico [®] Ecologic	S.G 920		S.G 700	
Casting alloys for dental restorative systems on implants				
Aurofluid 2 PF	S.G 810	S.G 750		
Dentalor 60	S.G 810	S.G 750		
Medior 3	S.G 810	S.G 750		
Neocast 3	S.G 810	S.G 750		
Opticast	S.G 810	S.G 750		
Pagalin 2	S.G 880	S.G 750		
Pagalinor 2	S.G 810	S.G 750		
Pallorag 33	S.G 810	S.G 750		
Pontor 2	S.G 810	S.G 750		
Pontor MPF	S.G 810	S.G 750		
Protor 3	S.G 810	S.G 750		
Solaro 3	S.G 810	S.G 750		
Solaro 4	S.G 810	S.G 750		
Strator 3	S.G 810	S.G 750		
Yellow Special	S.G 750	S.G 700		



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