

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 packaging/symbols

| | |
|---|--|
|  | Date of manufacture |
|  | Manufacturer |
|  | Catalogue number |
|  | Batch code |
|  | Quantity |
|  | Observe the Instructions for Use, which are available in electronic form at the address specified. www.cmsa.ch/docs |
| Rx only | Attention: According to US federal law, this product may only be sold by or on behalf of a physician. |
|  | Cendres+Métaux products with CE labelling meet the requirements of the relevant European requirements. |
|  | Unique Device Identification – UDI |
|  | European Authorised Representative |
|  | Importer in EU |
|  | Medical device |

| 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 200mm | | | | | | | | | | | | | |
| S.G 700 | 01000352 | ✓ | ✓ | Yellow | 72.90 | 72.40 | 0.45 | | 10.20 | 2.90 | 12.00 | 0.05 | In 2.00 |
| S.G 750 | 01000345 | ✓ | ✓ | Yellow | 76.10 | 75.10 | 1.00 | | 11.75 | | 12.15 | | |
| S.G 810 | 01000348 | ✓ | ✓ | Yellow | 76.10 | 75.10 | 1.00 | | 14.50 | | 9.40 | | |
| S.G 880 | 01000355 | ✓ | | Yellow | 78.90 | 75.90 | 2.90 | | 10.20 | 5.90 | 5.00 | 0.10 | |
| S.G 920 | 01000354 | ✓ | | Yellow | 89.10 | 88.10 | 0.90 | | 3.00 | 5.10 | 2.80 | 0.10 | |
| S.G 1030 | 01000350 | ✓ | | Yellow | 93.75 | 93.50 | 0.20 | | 0.50 | 4.45 | 1.20 | 0.05 | Fe 0.10 |
| S.G 1055 | 01000353 | ✓ | | Yellow | 85.50 | 85.00 | 0.45 | | 13.50 | | 1.00 | 0.05 | |
| S.G 1080 | 01000347 | ✓ | | Yellow | 82.40 | 80.00 | 2.40 | | 16.90 | | 0.70 | | |
| S.G 1120 | 01000351 | ✓ | | Bright Yellow | 83.00 | 80.00 | 3.00 | | 17.00 | | | | |
| S.G 1155 | 01000356 | ✓ | | Pale Yellow | 80.10 | 75.10 | | 5.00 | 18.90 | | | | Sn 1.00 |
| S.W 1100 | 01000346 | ✓ | | Pale Yellow | 78.00 | 64.50 | 5.00 | 8.50 | 20.00 | | 2.00 | | |
| S.W 1125 | 01000349 | ✓ | | White | 80.50 | 72.50 | | 7.90 | 14.50 | 4.00 | | 0.10 | In 1.00 |

| 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 1030 | 935–975 °C | | CM soldering paste |
| S.G 1055 | 990–1040 °C | | CM soldering paste |
| S.G 1080 | 1020–1070 °C | | CM soldering paste |
| S.G 1120 | 1060–1080 °C | | CM soldering paste |
| S.G 1155 | 1040–1120 °C | | CM soldering paste |
| S.W 1100 | 1060–1155 °C | | CM soldering paste |
| S.W 1125 | 1010–1100 °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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