



Croform Excel S1 Cobalt Chromium Casting Alloy

Instructions for Use

INTRODUCTION

Croform Excel S1 is a cobalt based dental casting alloy type 5 in accordance with EN ISO 22674:2016 and is beryllium and nickel free.

INDICATIONS

It is designed for cobalt chrome skeletons for full and partial dentures.

CONTRA INDICATIONS & SIDE EFFECTS

If the instructions are followed during the production processes, reactions to non-precious dental alloys are extremely rare. In case of a proven allergy against a constituent of this alloy, the alloy must not be used for safety reasons. In exceptional cases, electrochemically induced, local irritations have been reported. When different alloy groups are used, galvanic effects might occur. Please inform your dentist regarding the contra-indications and side effects. Any serious incident that involves the product must be reported to the manufacturer and the competent authority in the country concerned.

COMPOSITION

Cobalt	61.3%
Chromium	30.15%
Molybdenum	5.5%
Silicon	1%
Carbon	0.65%
Manganese	0.6%
Iron	≤0.6%
Balance	≤0.1%

TYPICAL PHYSICAL PROPERTIES

Density	8.25g/cm ³
0.2% proof stress	590MPa
Tensile strength	850MPa
Modulus of elasticity	155GPa
Elongation	2.8%
Vickers Hardness	460 HV 10/30
Corrosion resistance	<200 µg/cm
Solidus temperature	1320°C
Liquidus temperature	1380°C
Melting range	1320 - 1380°C

WAXING & SPRUING

Wax up in the normal manner. Sprue using the indirect technique or through the model. A sprue thickness of at least 3 mm is recommended. Ensure that the wax used burns out without a residue.

INVESTING

Use a high heat investment, following the manufacturer's instructions. Recommended preheating temperature 900-950°C.

MELTING & CASTING

Croform Excel S1 should be melted in a ceramic crucible. Avoid the use of graphite crucibles and do not use flux. The chemical and physical properties quoted can only be guaranteed when new material is used each time. Avoid multiple use of buttons and sprues. If buttons and sprues are re-used they must be completely clean and combined with an equal weight of new metal.

For gas melting a multiple orifice torch with 25 psi (1.7 bar) oxygen, 15 psi (1.02 bar) propane should be employed. The ingot will slump and lose shape but should be cast before it begins to spin or form a globule.

When an induction casting machine is used, the manufacturer's instructions should be followed. The casting temperature is 1480°C.

DEVESTING, FINISHING & POLISHING

Let the muffle cool down to room temperature (ca. 20°C), do not quench with water. Put the cooled muffle into water to avoid dust generation during the devesting. Sandblast the surface with 250 micron aluminium oxide with 3-4 bar. Clean the partial denture base with a steam cleaner. Finish using sintered diamonds, aluminium oxide discs, stones or tungsten trimmers. Electrolytically polish and then finish with rubber wheels and points.

SOLDERING / LASER WELDING

Croform Excel S1 can be soldered with all suitable solders. Castings made with this alloy should not be soldered with gold or palladium solder. Croform Excel S1 is also ideally suitable for laser-welding.



HANDLING CONDITIONS / SAFETY

Metal dust is harmful to health. When grinding and sandblasting use dust extraction and respirator with filter FFP3 - EN 149.

DISPOSAL INSTRUCTIONS

Consult the material safety data sheets or national regulations for disposal. Dispose of Croform Excel S1 residues and dust in an environmentally friendly manner. Grinding dust must not enter groundwater, water bodies or sewers. Contact waste contractors for recycling.

STORAGE CONDITIONS

Temperature, humidity or light has no effect on the product properties.

HEALTH & SAFETY



The metal vapour and dust are harmful to health. Dust extraction and suitable mask should be used



Refer to Safety Data Sheet.

STORAGE

Store in a clean dry place.

This product is specifically formulated for use in dentistry.

The information and recommendations above are based on the state of the art in science and technology and is correct to the best of our current knowledge and experience. This version replaces any previous versions

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