



TMCilicate (LiSi) Handling Instructions

Chemical Composition	SiO ₂	Li ₂ O	K ₂ O	Other
Percentage %	59% to 73%	13% to 15%	3% to 5%	8% to 25%

Technical Specifications Density = 2.3 to 2.6 g/cm ³ CTE @ 500C = 8.5 to 11.0 x 10 ⁻⁶ K ⁻¹ Flexural Strength = 400 to 460 MPa Vickers Hardness = 5400 MPa Solubility after sintering <100ug/cm ²	Cytotoxicity test = Level 0 Short-term tests for systemic toxicity (oral route) = None Anaphylaxis test = None Hemolysis test < 5% Ames Testing = Mutation negative Oral mucosal irritation test = None
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Fit and Finishing: Using an HP or FG porcelain/ceramic diamond rated rotary instrument and a handpiece, adjust inside of crown to fit to die and outside surface of crown to adjust contacts and occlusion as necessary to fit to working models. Smooth or texture surface of crown as desired. Lightly sandblast using white aluminum oxide using 30 psi air pressure. Clean finished crown in distilled water using an ultrasonic cleaning machine for 2 minutes then dry crown.

Crystalizing Instructions: Crystalize “green state” crown using Talladium’s “STICK IT” custom peg material to secure crown to a ceramic firing peg or pin. Place peg/pin onto a sagger tray and fire using a porcelain oven under vacuum. Crystalizing Firing Parameters are as follows:

Idle temp 400C/752F	Dry/Entry Time 5 minutes	Heat Rate 50C/122F	Vac Start 550C/1022F	Vac Stop 840C/1544F	Hi Temp Hold 10 min	Cool 5 min
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Porcelain Application, Correction Material & Glazing: Use any Lithium Silicate based porcelain material with a compatible CTE to TMCilicate (see above). Follow porcelain manufacturer’s material instructions for specific firing times and temperatures.

TMCilicate guideline specifications are as follows:

Idle temp 400C/752F	Dry/Entry Time 6 minutes	Heat Rate 50C/122F	No Vac	Hi Temp 750C - 840C 1382F -1544	Hi Temp Hold 30-60 sec	Cool 5 min
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When porcelain and glazing are complete, carefully remove excess porcelain or glaze material from inside of crown. Sandblast using 30psi. Clean with water in ultrasonic cleaning machine. Etch inside of crown using hydrofluoric acid gel. Final oral insertion should be completed using resin bonded cement.