# Chrome Cobalt Tips & FAQ's

- ✓ Make sure porcelain system is compatible with Chrome Cobalt!
- ✓ CTE of Chrome Cobalt is 14.5 x $10^{-6}K^{-1}$—make sure it is compatible with porcelain.
- ✓ Make sure the lab is not using the same tools (grinders, etc.) on non-precious metal (CoCr) as they use for semi & precious—it can lead to cross contamination!
- ✓ Fire at 980°C for 10 minutes.
- ✓ Clean Chrome Cobalt with ultrasonic bath or steam cleaner.

1. **Should Chrome Cobalt be degased under a vacuum?**
   - It is not necessary, but it is ok. The material will oxide less under the vacuum.
     *i.* If labs are accustomed to working with precious or semi precious metals they may leave the oxide layer after degassing. When working with non precious metals the lab should remove the oxide layer by sandblasting (about 2 PSI) to remove oxide. Steam. Dry. Then to 1st layer of opaque. Thin wash. Fire. Second and heavier layer of opaque. Fire. Then to porcelain building. *The use of a bonder could also be the cause of the porcelain cracking.*

2. **What tool should I use to cut out Titanium and Chrome Cobalt abutments?**
   - Small carbide bur on a high speed!

3. **What should I use for filing down sprews?**
   - Heatless stones can be used to finish down the sprews on a high speed lethe.

4. **How do I polish the Chrome Cobalt?**
   - To polish, first you must remove the rest of the oxide by air blasting with glass beads. Then, polish the surface of the metal with a ceramic bonded grinder. Finish to high gloss with burnisher and RG Ultra Diamond Polishing Paste.

5. **Why is the Chrome Cobalt bubbling (PFM)?**
   - What porcelain are you using?
   - What is the co-efficient of thermal expansion (CTE) of the porcelain?
   - What are their recommendations for prepping of the non-precious metals?

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Using a bonder? Prior to opaque?

- Are they doing a layered liner*? A lot of labs skip this and it is really important for proper bonding of ceramic. Their porcelain prep instructions should address this!*
- Call the porcelain company as this *is* a porcelain issue, not a metal issue.

6. **Why is the porcelain cracking or microfracturing?**
    - What is the co-efficient of thermal expansion (CTE) of the porcelain system? Most porcelains are compatible with RG Chrome Cobalt.
    - If CTE is less than 14.5 you may advise the lab to do the following when cracking of porcelain occurs:
        - Ask the holding temp of bake cycle? How many degrees per minute are they ramping up? Decrease ramp up temperature by 10 degrees on all bake cycles.
        - Cooling down cycle – for larger cases they may want to add a cooling time of 10-15 minutes to prevent cracking!