

Efficiency and Accuracy in Denture Base Processing

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As we look at where the dental laboratory industry stands with acrylic denture base processing, the vast landscape of denture base processing still includes technology that has been proven successful through the ages as I travel around the country lecturing and training on removable technology, I find that removable dental technicians still advocate the old reliable technique in which removable technology was built.

Press packing is still the most widely used method in acrylic processing followed by injection and then by pour acrylic techniques. The success and accuracy of these techniques depends on the right materials and of course the expertise of the technician. I am a big fan of heat cured acrylic and have also been a longtime advocate of microwave curing. There are many differences in quality on many of the heat cured acrylics out on the market.

I judge an acrylic by natural shade, the strong bond between denture base, flexural strength, impact resistance, bond to denture teeth and finishing and polishing qualities. I also look for a low shrinkage rate in an acrylic. The one acrylic that has been consistent for me over the years has been Diamond D® from Keystone Industries. Diamond D® acrylic has all of the above qualities.

Whether it be full dentures, partials, implant overdentures or hybrid type cases. I consistently get the same quality result time after time. And those who know me in the industry know that I do not compromise when it comes to quality. I am only interested in giving the patient the best possible case with the ultimate in aesthetics and function.

When Keystone Industries introduced their new Tecnoflask for microwave denture curing, I was very excited to test out this flask with Diamond D® acrylic. The results were phenomenal. I got the same quality results time after time. I can now cure a denture in 4 minutes in a 500w-700w microwave oven utilizing Diamond D® 20 minute monomer or cure for 9 minutes using regular heat cure monomer. Made of the best thermoplastic material suitable for a conventional microwave oven, the thickness and overall shape of Tecnoflask makes it stand out from competition. Tecnoflask's toughness and resistance makes it safe against continuous pressure and high temperatures with no damage done to the muffle.

The Tecnoflask is a work horse. I use these flasks every day at our lab with peace of mind that every case is going to be a quality one. You can even cure metal partials, hybrid and bar cases with microwave technology. Another plus is that the acrylic is being cured from the inside out resulting in virtually no free monomer after curing. This is very important for patients who have a sensitivity to monomer.



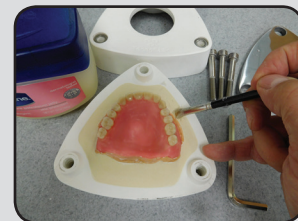
The following is the Tecnoflask Diamond D® microwave technique:



1) Wax up denture for finish in the normal manner. (Figure 1)



2) Invest denture in bottom half of Tecnoflask in a half and half mixture of plaster and stone. (Figure 2 and 3)



3) After gypsum has set up, Vaseline all gypsum areas. (Figure 4)



4) Attach top half of flask and tighten all bolts. (Figure 5)



5) Mix up type 3 gypsum and vibrate into flask, filling entire flask. (Figure 6)



6) After gypsum is set, remove bolts and insert flask in microwave and set timer for 1 minute and 30 seconds. (Figure 7)



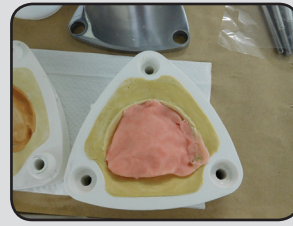
7) Open flask, remove the bulk of the wax and boil out the remaining wax. Clean all waxy residue off teeth and prepare teeth by roughening ridge lap of teeth or if desired make diatoric holes for added retention. (Figure 8)



8) Paint on Diamond D separator (2 coats works well). (Figure 9)



9) Mix Diamond D heat cure acrylic and 20 minute monomer according to manufacturer's guidelines. (Figure 10)



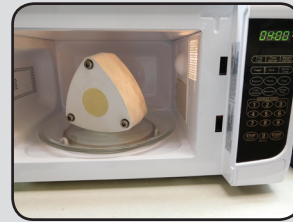
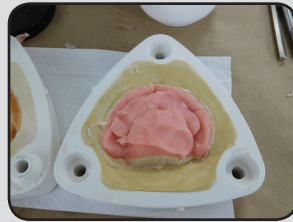
10) When material is ready to pack (comes away from jar without sticking but not at snap stage), pack into flask and trial pack. (Figure 11)



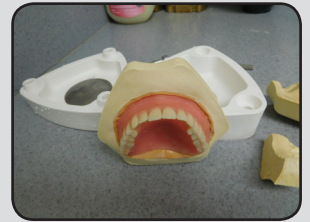
11) Make sure metal protector is placed on top of flask when packing. This will ensure longevity and protection for the Tecnoflask. (Figure 12)



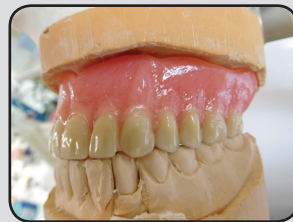
12) Open flask, remove excess and add more acrylic. After pressing, remove excess again, paint model with Diamond D® separator, close flask and tighten bolts. (Figure 13 and 14)



13) Place in Microwave and cure for 4 minutes. (Please note, if using heat cure monomer, cure denture for 3 minutes at 40% power, 3 minutes at 60% power and 3 minutes at 90% power. Microwave can easily be programmed for all three power levels). (Figure 15)



14) Take flask out of microwave and bench cool for 20 minutes. Immerse in cold water for 5 minutes and de-flask. (Note how clean the denture came out after de-flasking). (Figure 16)



15) Check occlusion (Figure 17) and finish and polish denture (Figure 18 and 19).

Denture technology has been making some significant advances in materials and technique's including more natural looking and wear efficient denture teeth. With the recent introduction of digital technology, we are likely to see even more changes in the way we approach removable technology. Keep in mind that even with digital technology, a denture base resin is still being utilized whatever the method the digital denture is being made.

All in all, utilize materials and methods which are consistent in producing quality. Show off your technical talents by bypassing methods which will sacrifice doctor and patient expectations. Keep in mind the ultimate goal-Patient Satisfaction.