

Tool Tips by Terry

When Painted Glass Doesn't Play Well with the Kiln

by Terry Mominee

Sooner or later, when you do a lot of glass painting, you end up needing to fire a piece of white opalescent glass, and you find out – the hard way – that it can do nasty little things during the firing. Not all white opals misbehave, and not all misbehaving white opals misbehave every time, so firing white opal can be a crap shoot.

You have, to your dismay, encountered a matte scum on the kiln-shelf side of that one piece you spent hours slaving over. Every other piece, particularly the cathedrals, seems to be nothing short of perfect. You are a victim of *devitrification*.

Put simply, the side which was in contact with the kiln shelf could not rapid-cool quickly enough for that specific glass. The molecular structure of its outer surface had time to rearrange itself into a new crystalline form: hence, scum. (For a highly technical explanation, read *Conservation of Glass* by Roy Newton and Sandra Davison, published by Butterworth & Co. Ltd., London, 1989.)

If you notice regular patterns formed in the offending scum, you are seeing “tractor marks” left from imperfectly timed phases of the manufacturing of the rolled sheet glass itself. These marks can be virtually invisible on the sheet, but quite noticeable after being re-fired, and can actually add to a glass’s tendency to devitrify.

The more opaque white the glass, the more likely devitrification is to occur. Antique-style semi-transparent “whites” do not tend to have this problem. However, if you are into restoring North American art glass, you will inevitably run into white opals, which means you will need to match that particular glass type and deal with its idiosyncrasies.

Short of tossing your injured masterpiece, there are a few tricks to be tried in an attempt to salvage it. *N.B.: if it appears heavily devitrified, it is better to simply start over because you will waste far more time trying to salvage it.*

Always clean the piece exactly as you would in preparation for glass painting. If the scum layer seems thin enough, you may be able to polish it out, using the same compounds that are used for polishing beveled glass. *N.B. No. 2: this is very hard on your beveling equipment, so it would be wise to purchase attachments for your electric drill and use those instead.*



Opalescent whites can tend to devitrify during the firing process, especially on the kiln shelf side.

Another option is to use a mild acid to polish the surface, but using strong chemicals has distinct risks to both you and your work. Do not attempt this unless you are very familiar with acid-etching and can fully mask off the painted side of the piece.

Occasionally, devitrification will appear on the painted side. Your best bet here is to apply a clear fusing over-spray and re-fire. When in serious doubt, re-do, but leave yourself open to experiment with the ruined piece and find solutions for future “challenges.”

Two adages to take to heart: 1) You’re never too old to learn; and 2) There are no stupid questions – if you’re making a serious attempt to learn something. By sharing tidbits of wisdom and experience, i.e., accumulated knowledge, we all help to preserve the art of working with glass and to make that life a bit easier for us all.

