

# THICK AS A BRICK

By Mick Orr  
Applications Training Specialist

An example of an emulsion that may seem thin but is really thick. Chroma/Tech® PL is our “thickest” emulsion with a solids content of approximately 50%. However, its viscosity at 25oF is 4600 centipoise which is regarded as a low viscosity. It was designed to act thinner so that it flows easily into and around the mesh. You still have the highest solids content available. As you know, the higher the solids the fewer the coats needed to achieve a specific thickness (as in distance from one side to the opposite side). Typically, coating one on one with Chroma/Tech® PL will equal up to four coats wet on wet with a diazo based emulsion.

Our industry is “thick” (as in: lots of) with emulsions from high viscosities to low viscosities. What you have to do is decide which one will work for you the best. Get thick with it. Learn the differences of how it acts during application. The viscosity of Chroma/Tech® PL has been determined by Chromaline so that you can be sure of the coating quality you demand every time.

“There is also the misperception that the viscosity of the emulsion is directly related to the solids content.”

What you see is what you get. Emulsion is emulsion. I’m sure all of you have read, or said, these phrases once in your lifetime.

Sometimes things are not as they appear. Sometimes it’s the object being observed that is different; sometimes it’s the observer.

The perception that a particular emulsion is thicker than another emulsion may be true, yet it may not be. There is also the misperception that the viscosity of the emulsion is directly related to the solids content. I think that part of the problem is the word “thick.” What does thick mean? If you put a spatula into a bucket of emulsion and it stays vertical does that prove it is a thick emulsion? Maybe the emulsion you tested was near freezing which would change its viscosity. Maybe the emulsion has very high solids. Maybe it is both viscous and high in solids.

### *The Thick of It All*

I looked up the meaning of thick in my dictionary. It can be used in at least nine different contexts. If it can have so many different meanings it can only cause confusion. In the case of emulsion, many screen makers equate solids and viscosity with thickness.

### *Viscosity Truths*

Viscosity is influenced by temperature. As the temperature increases, the viscosity also changes. You can make a thin emulsion thick (more viscous) just by cooling it. Manufacturers give a specific temperature along with viscosity simply for this reason. For example, say that you have two emulsions that were exactly the same in solids content with different viscosity levels. The one with the higher viscosity would deposit more emulsion onto the screen. Because more emulsion will be used, it won’t go as far as a bucket of low viscosity emulsion. So, beware. Just because an emulsion is thick doesn’t mean you will coat more screens. You will if it is high in solids. You might if it is high in viscosity.



*Looking for insight on the wonderful world of screen making? Consult the writings of Chromaline’s Technical Guru, Mick Orr, Applications Training Specialist.*

*Mick has been in the screen printing industry since 1970 with printing experience in a wide range of applications from membrane switches, to textiles, specialty graphics to faceplates and more. His hands-on seminars have been appreciated by screen makers around the world.*



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