

## Viscosity / pH Control

### Viscosity:

The viscosity of an ink will affect many aspects of printability including print strength, print sharpness, ink lay and color, drying speed, foaming ... Viscosity is one of the easiest variables to change on press, and along with pH has the most significant effect on the resulting print quality and ink performance. Specific applications call for varied specific viscosity ranges given the variables within that application. What's most important is that a running viscosity range is established, and maintained in order to achieve the highest consistent quality you can achieve from your ink systems.

All water based inks can have a tendency to be thixotropic, which means the liquid will show a moderate drop in viscosity when agitated. Given this variable, follow the steps below in starting up jobs with water based inks, as well as maintaining their viscosity during the run to achieve optimal performance from your inks.

- Put ink on press, allow circulation on the unit for 2-5 minutes, checking pH, and then check viscosity. First adjust the pH to the appropriate level using pH adjuster, see pH details below. If viscosity is high after pH adjustment, cut using water or whatever viscosity cutting solution your print shop offers. If ink is too low in viscosity, add fresh ink to bring it back up. If ink is over saturated with water, it may not be possible to bring ink back to suggested printing viscosity and ink may have to be discarded and fresh ink put on press.
  - 1 % water cut as a general rule will lower viscosity 2-3 seconds in a 2/z cup, and 1-2 seconds in a 3/z cup.
- The viscosity of ink on press should be checked once an hour, and adjusted accordingly to keep within spec.

For further details and information on Viscosity please consult any of our Technical Representatives.

### pH:

Controlling pH on press is perhaps the most essential element of water based inks and their performance. All water based ink systems are designed to run within specific pH ranges and if not maintained will cause major problems in the printing process (thick ink, drying too fast, drying too slow, foaming...). Specific applications call for varied specific pH ranges given the variables within that application. What's most important is that a running pH range is established, and maintained in order to achieve the highest consistent quality you can achieve from your ink systems.

Follow the steps below in starting up jobs with water based inks, as well as maintaining their pH during the run to achieve optimal performance from you inks

- Put ink on press; allow to circulate on the unit for 2-5 minutes, check pH. If the pH is low, adjust by adding ph adjuster, if the pH is high; add fresh ink to bring it down. If the pH is above 9.9 it may be impossible to bring back into spec and ink may have to be discarded and replaced with fresh.
  - Hot summer months pH will flash off quicker and require more pH adjuster to maintain suggested printing pH. However, in cooler less humid months inks will maintain their pH longer, and require less adjustment.
- The pH of ink on press should be checked once an hour, and adjusted accordingly to keep within spec.

For further details and information on pH please consult any of our Technical Representatives.