



## Consequences of Dispense Tip Reuse

A significant amount of time, effort, testing, and expense is applied to selection of the proper adhesive for an application. Specifications are carefully written, shelf-life schedules are established, and stock rotation plans created.

Once specifications are established, many other factors contribute to the success and/or failure of the adhesive. Substrate surface contamination, degradation of a curing lamp, or a change in temperature of the work area can all negatively impact the process.

A frequently overlooked source of adhesive failure is the dispense tip. Many operators reuse dispense tips in the mistaken belief that it will save money for their employer. Costs frequently rise due to product failure and loss of control of the process.

A fresh tip should be used with each new syringe or change of adhesive in a fluid reservoir. Any reuse equates to the re-blending of adhesive and will provide unpredictable results. Manufacturers are unlikely to warranty any re-blended material.

### Consequences of Dispense Tip Reuse:

<b>A.</b>	The “reblend” effect. Engineered-adhesive manufacturers go to extreme lengths to consistently control the quality of an adhesive. Attachment of a dispense tip or fluid feed line provides an outside contact that can start the transfer of a contaminate, extractable, particulates, or any foreign matter to the adhesive. Tips that are reused automatically contaminate a process due to cross-contamination from different lots of material or partially cured adhesive from prior use.
<b>B.</b>	Cleaning introduces unwanted materials or contaminants. Solvents used in an attempt to clean the tip will result in surface residue on the tip hub or inside of the tip tubing.  Water leaves moisture or contaminants from the “bathing” water. (Consider the contamination from a submersion bath. One would not wish to bath in previously used bathing water in a tub)
<b>C.</b>	Partial blockage of a dispense tip changes flow properties. During changeovers, a small amount of cured material can form inside the dispense tip when adhesive inside the tip is exposed to light when removed from a syringe/valve. While a tiny spot or thin coating of 50 microns or less may not be visible to the naked eye, it will cause a significant reduction in fluid flow through a tip with an orifice of .033" or less.
<b>D.</b>	Tip position varies when reused. Adhesive on the thread of a tip hub can often act as a lubricant with frequently pulsing time-pressure dispensers. This leads to variation of tip position or even complete detachment during a dispense cycle.
<b>E.</b>	The chance of operator contact with the adhesive rises when removing and reusing a dispense tip.

Any of these factors can cause failure in a manufacturing process. All fall into the category of a random variable and can be very hard to track as a root cause. The best practice is to eliminate uncontrollable variables and the above risks by changing dispense tip.