

Cleaning Butyrate tubing:

Cellulose Acetate Butyrate, as any transparent tubing can accumulate grime, oils, and get scratched by abrasives. Also it will weather and age due to UV light and oxidizers. When the latter occurs, the tubing cannot be cleaned by traditional plastics cleaners or detergents.

1. Aging and yellowing:

If the tubing has yellowed, UV light is the culprit, and the tubing has yellowed throughout; it is not a surface-cleaning issue. Transparent CAB, as most transparent plastics is amber-colored by nature. The “water clear” color of a newly extruded tube has a blue tint from the resin manufacturer.

Busada tubing, unless specified, is derived from resin with UV stabilizers. **Over time, exposure to UV radiation in sunlight or artificial light will degrade the Polymer.** UV light consists is non visible short wave lengths that break down the polymer chains. This process deteriorates physical properties such as loss of impact strength, yellowing, crazing, loss of elongation and tensile strength or chalking of the surface. The UV stabilizers in Busada tubing absorb UV radiation, but they eventually break down. Just as a color photograph will fade, the plastics tubing’s blue die will fade, and the natural yellow color appears. This cannot be corrected, only delayed by reducing the tubing to UV light.

2. Oil and Grime.

Industrial processes can leave behind all sorts of contaminates. Generally, in butyrate tubing, we recommend a simple procedure. Wet the interior of the tubing and make a cotton-rag ball on a rope. Saturate the rag ball in common household detergent (Eastman has tested products such as Mr. Clean, Spic and Span, Joy detergent, and others to find no degradation through short-term use. Thus, periodical cleaning using this method is advisable.

One might also consider using a chimney-sweep rod kit for the cleaning. The extension rods are flexible and can usually navigate through bends as well as tubing. Others have been successful with Music wire machine augers and related products.

If necessary, concentrated isopropyl or ethyl (denatured) alcohols can be used for cleaning, but this should only be used for short-term cleaning. Tests show that Isopropyl will soften the tubing with two-day exposures.

Here is a recommended mix:

Measure three gallons of hot water into a bucket. Add 1 cup of mild detergent and ½ cup bleach OR isopropyl (or denatured ethyl) alcohol. Completely flush out the tubing and allow it to dry.

3. Dust accumulation.

Dust accumulating on the interior and exterior walls in pneumatic tubing is the result of static charge. We recommend cleaning the tubing (using the cotton-rag ball in point 2) with an anti-static wash. We recommend Staticide products with the rag saturated in water and 15% isopropyl alcohol. Use this method as much as needed, but keep in mind that if the tubing gets wet, new Staticide must be applied. Staticides are available through the ACL Staticide website.

4. Caustic wash.

This old technology, (patents going back to 1930’s) is to rinse with 10% caustic (10% sodium hydroxide in water) for 2 to 5 minutes. Warmer solutions work better (40C for a faster reaction. This will strip off surface acetyls and butyrls. After cleaning, it should also leave a much more water adsorbing surface on the CAB. This, in turn, should increase static dissipation. Special care needs to be used for this procedure.