

# Rubber Fab

a Garlock Hygienic Technologies company

## Case Study: Craft Brewing FDA BOC Bromobutyl Hose



### INDUSTRY

Beverage – Beer Brewing

### CUSTOMER

A rapidly growing US Craft Brewer, producing lager and other light ales at their New England brewery.

### BACKGROUND

The customer was using standard Food & Beverage Hoses (with nitrile/PVC liner), to transfer both ambient wort and chilled carbonated beer at different stages of the brewing process. While initial performance of the hoses appeared satisfactory, the customer experienced leakages on all hoses after 4-8 weeks of service – typically occurring between hose collar and ferrule. The loss of product was relatively minor, but cleaning operations and hose replacement costs were becoming a significant issue.

### CHALLENGES FACED

With rapid market growth for craft beer in the USA this brewery continued to scale-up their production output, so the owners were increasingly focused on production efficiency to keep up with demand. Additionally, as they developed their business more styles of beer were introduced which demanded a flexible brewing program, involving rigorous cleaning - using Sodium Hydroxide (50%); Phosphoric & Nitric Acids (15-20%); Peracetic Acid (15-15.8%) - between batches in order to maintain authentic and high quality brews.

### OPERATING CONDITIONS

1. Size: 1.5" and 2.0" ID Hose / tri-clamp connections
2. Temperature: 32 - 50°F (0 - 10°C)
3. Application: Beer transfer
4. Media (process): Wort and Carbonated Beer
5. Media (cleaning): Alkaline and Acidic Cleaning Agents
6. Pressure: Max. 15 PSI (~1 Bar)

### SOLUTION AND BENEFITS

Rubber Fab's technical team concluded that the acidic cleaning agents were attacking the nitrile lining of the existing hose, leading to rapid degradation. Poor crimping quality during hose assembly also created weak spots around the collar and ferrule, hence the leakages at this failure point. The customer was advised to replace all existing hoses with Rubber Fab's new Food-Grade FDA Bromobutyl-Lined Hose. Bromobutyl has significantly better acid resistance when compared to Nitrile/PVC, and still offers the required flexibility and durability for long term service in all brewing applications.

The Bromobutyl-lined hose was successfully evaluated and approved for use following taste-testing of each brew, and upon replacement the new hoses were still performing without any issues after more than 10 months in continued service. The improved hose performance has not only reduced ongoing maintenance costs, but has allowed the customer to build a more flexible brewing program as they continue to grow their business.

For more information, please visit: [www.rubberfab.com](http://www.rubberfab.com)