



Technical Overview for Green Line, Draught Beer Line Cleaner

According to United States Occupational Safety and Health Administration regulations, materials containing high levels of caustic chemicals must comply with the Hazard Communication Program requirements listed in Title 29 of the Code of Federal Regulations, section 1910.1200.

In addition, many materials currently used in the beer line cleaning industry meet the United States Department of Transportation (USDOT) definition of corrosives as stated in Title 49 of the Code of Federal Regulations, Section 173.136. This requires that individuals transporting these materials over public roads comply with all of the USDOT hazardous materials transportation regulations including the Emergency Response Information (49 CFR 172.704) and Training (49 CFR 172.700) requirements.

In comparison, Green Line contains minimal levels of caustic, is noncorrosive, and completely biodegradable.

Green Line is a sophisticated formulation of nonionic and anionic detergents, chelating agents, and defoamers which are approved for food contact applications. Green Line complies with the U.S. Department of Agriculture's guidelines for compounds that may be used on food contact surfaces in Federally regulated food-processing facilities (Title 7, chapter 3, of the Code of Federal Regulations).

Green Line also meets the U.S. Environmental Protection Agency's guidelines for biodegradability, that require a product to biodegrade 50% within 8 days, 100% within 21 days and not contain or release any restricted inorganic compounds.

Nonionic detergents provide effective cleaning action under both acidic and alkaline conditions, while anionic detergents increase the speed at which Green Line dislodges deposits of crust and proteinaceous matter.

Chelating agents act on calcium and magnesium deposits to make them soluble in water, so they are simply flushed away.

The less than 0.5% alkaline detergents are used to quickly break the organic shells of yeast laden bacteria found in beer line residues. This low level of caustic ingredients does not suppress surfactant activity and provides maximum reduction of surface tension.

The less than 0.5% concentration of food grade silicon defoamer reduces foaming during flushing procedures and acts to lubricate moving parts such as valves and pumps.

Even with a high 20% active ingredient level, Green Line is completely free rinsing and leaves no residue in cleaned lines.

Green Line's combination of FDA food grade dyes is completely solubilized and will not precipitate out. Even at less than 0.5%, the resulting bright green fluorescent color clearly indicates when Green Line has reached an active concentration, and also when it has been completely flushed from lines.

Green Line will not cause hardening or degradation of transfer lines, or harm fittings.

Green Line has been laboratory and field tested extensively on degenerated yeast (cocci and rods), and has proven to be extremely effective at removing Lactobacillus, Pediococcus, and denatured protein (trub), all commonly identified as draught beer sediment, thus improving sanitation and flavor consistency.

Cleaning efficiency of Green Line in comparison with standard cleaning solution using the test specifications of ASTM D-4488.

Efficiency tests were performed on 5/16" and 1/2" beer line, 50 psi pressure rated tubing, in service for over 1 year without cleaning. Deposits completely covered and encrusted the inside surface of the tubing.

The deposit consisted of proteinaceous matter, dextrin, mold fragments, and oxalate crystals in skin, flake and granular form. Cleaning efficiency comparisons between a commercially available caustic line cleaning compound and Green Line was determined using an average percentage removal rate after using a 2% solution concentration @ 25° C, a 2 hour immersion, and a 2 minute clean water rinse at 50° C .

	Caustic Line Cleaner	Green Line
% of deposit removed from 5/16" tubing	55	90
% of deposit removed from 1/2" tubing	40	82