



Iron Cleanup at New York-Based Beverage Company

BACKGROUND

A New York beverage plant constructed to produce milk-based coffee products was preparing for production. With seven million dollars in orders for their product, they had six reconditioned Stock (Rotomat) cookers containing a significant amount of iron deposition. During trial production runs many of the bottles had noticeable iron smudges on the white lids. Production could not proceed because of the inferior-looking product packaging and potential damage to brand value.

SOLUTION

ChemTreat submitted a proposal to clean and passivate the cookers using ChemTreat CT38. CT38 is used at 7–15 percent to clean and provide a protective magnetite layer on the metal surfaces. It can also be used as a pre-operational cleaner for boilers, chillers, and other heat exchange equipment.

Cooker #2 was cleaned to define the process and assess performance before committing to cleaning the balance of the cookers.

A 7 percent solution of CT38 was utilized in the cooker with the temperature maintained

at 130°–135°F. Throughout the five-hour procedure, circulation from the bottom drum to the top drum was effected. After five hours, the vessel was opened and the results were superb. The plant manager and production manager were ecstatic. Throughout the procedure, the ORP was held negative at -40 mV and the pH stabilized around 6.5.

RESULTS

As a result of the outstanding results, the remaining five cookers were charged with the chemical in the early afternoon. The plant personnel leave at 5 p.m., and only provided a three-hour cleaning time so the cookers were allowed to soak overnight. The last three retorts possessed the most severe corrosion and deposition, so additional ChemTreat BL1240 was added to ensure a negative ORP. Overnight the ORP dropped to -240 mV. The steam system is shut down daily when the personnel leave so no steam was available to maintain temperature. The units remained warm throughout the night.

Upon inspection, these vessels looked even better than the first cooker as evidenced by a black-gray passivated metal surface. No deposit was visible throughout the cookers. Plant personnel were grateful and the results were “much better than expected.” Subsequently, the plant was started up and the product appearance was superb.

Some takeaways when performing this procedure:

- Maintain a negative ORP. If fouling is heavy, or if the cleaning time is extended, have additional BL1240 will be necessary.
- Maintain pH below 7.5.
- Maintaining a temperature of 130°F improves product performance.
- Performance improves with exposure time.
- Circulation improves performance.
- Monitor the conductivity throughout the process. If it drops significantly, makeup water is leaking into the system. At this facility conductivity was maintained at 2,500–3,000 µmhos.

CT38 is a unique, effective product that can produce dramatic results when used correctly. The nature of water treatment is generally gradual improvements over the course of several months to a year. Utilization of CT38 allows us to provide a unique and immediate solution to a common problem in the food industry.

BEFORE



AFTER

