CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 02/09/2020

Experimenters: Aditi Patel, Tatyanna Moreland Junior

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Calcium/lime, Food

Cleaning Methods: Low Pressure Spray

Analytical Methods: Timing

Purpose: To evaluate K-cup cleaners on the effectiveness of their descaling performance.

Experimental Procedure: To test the descaling performance, two k-cup cleaners (Clean N' Brew Cleaning Cup and Urnex K-cup cleaning cup) and water were run through different Keurig coffee machines to determine the flow rate. The flow rate was determined by measuring the volume of liquid dispensed in a graduated cylinder over the time it took for the liquid to decant. The flow rate was determined before cleaning using water, while cleaning using the cleaning pod, and after cleaning using water. During this process, visual observations were recorded. A second run was done looking at just the cleaners and their flow rate.

Results: Test of cleaners

	Flow Rate mL/sec					
Product/ Machine	Before	Visual	Clean	Visual	After	Visual
Clean N' Brew/ Machine 2	7.87	Clear water	7.09	Transparent light brown water	8.07	Clear water
K-Cup Brewer Urnex/ Machine 3	7.5	Clear water	7.19	Transparent light blue water	7.5	Clear water
Water/ Machine 4	7.69	Clear water	7.5	Clear water	7.5	Clear water

Gravimetric Results

	Flow Rate mL/sec			
Product/Machine	1	2	3	Average
Clean N' Brew/Machine 2	6.25	6.11	6.32	6.23
K-Cup Brewer Urnex/ Machine 3	6.53	6.50	6.82	6.62
Water/Machine 4	7.71	7.74	7.81	7.75

Summary:

Substrates:	Stainless Steel				
Contaminants:	Calcium/lime, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Clean 'n Brew	Clean'n Brew Cleaning Cup	100	0.00	☑	
Urnex	Urnex K-Cup Cleaning Cup	100	0.00	☑	

Conclusion: Clean N' Brew seemed to clean just as well as Urnex and water. Clean N' Brew K-Cups use apple cider vinegar and a small cotton ball to soak whatever residue is left in the Keurig. K-Cup Brewer Urnex used sodium bicarbonate and sodium percarbonate, which decants a blue liquid that bubbles up a lot. These things should be taken into account when choosing one to use.