CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2009
DateRun:	08/02/2009
Experimenters:	Jason Marshall, Junhee Cho, Timothy Weil
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Greases, Oil, Food
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric, Visual
Purpose:	To evaluate supplied product for fryer grease cleaning.

Experimental Procedure:

Preweighed stainless steel coupons were coated with a mixture of used cooking oil and grease as prepared from the UML food services. Oil was taken from the fryer operation and applied to the stainless steel coupons using a hand held swab. Coupons sat over night to allow the oil/grease to cool/harden onto the surfaces (if possible). After sitting, a second weighing was performed to determine the amount of oil/grease that was added to each coupon. Three coupons were immersed into cleaning solutions at room temperature and cleaned for 5 minutes. At the end of the cleaning, coupons were rinsed, dried and weighed a final time. Efficiency was calculated for each coupon cleaned.

One product could only be used to clean the oil/grease coated coupons by using spray applications. This was due to the cleaning product being active for 30-40 seconds. The surface of the coupons cleaned with this product was sprayed at 30 second intervals during the 5 minutes of cleaning. Several spray deliveries were attempted to determine the optimum performance. The product was compared directly to water in each delivery option to rule out the cleaning performed via the spray cleaning action.

In addition to the gravimetric analysis, visual observations were made.

Results:

The Sysco product removed nearly all of the grease within five minutes of immersion cleaning. Both the water and Activelon had limited removal of grease via immersion/spray combinations. The Non Caustic Fryer Cleaner removed just under 80% of the grease. The table below lists the amount of soil added, the amount remaining, the removal efficiency and observations made.

Cleaner	Initial wt	Final wt	% Removed	Observations
Non Caustic Fryer Cleaner	0.2015	0.0451	77.62	slight film on coupon
	0.1653	0.0453	72.60	slight film on coupon
	0.2638	0.0416	84.23	slight film on coupon
Fryer & Grill Cleaner	0.3099	0.0152	95.10	minor water droplet
	0.4896	0.0065	98.67	
	0.3856	0.0067	98.26	
Activeion	0.3406	0.0807	76.31	residue below the surface
	0.1714	0.1153	32.73	residue below the surface
	0.1421	0.0897	36.88	residue below the surface
Water-immersion	0.2472	0.1772	28.32	
	0.2159	0.0644	70.17	
	0.2267	0.2013	11.20	
Water-spray	0.1280	0.0559	56.33	residue below

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				surface-droplets
	0.2086	0.1066	48.90	residue below surface-droplets
	0.4335	0.1322	69.50	residue below surface-droplets

Summary:

Substrates:	Stainless Steel
Contaminants:	Greases, Oil, Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Alpha Chemical Services	Non Caustic Fryer Cleaner	3.1	78.15	☐	
Sysco Corporation	Fryer & Grill Cleaner	0.3	97.34	☑	
Activeion Cleaning Solutions LLC	Activeion Pro	100	48.64	☐	
Water	Water	100	36.56	☐	immersion
Water	Water	100	58.24	☐	spray

Conclusion:

The supplied product removed under 85% of the grease following the basic testing procedure at room temperature. The traditional product removed more than 95% under the same conditions. A follow up test at an elevated temperature or increased concentration may improve the supplied cleaner's performance.