CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2017

DateRun: 06/18/2017

Experimenters: George Liang, Vinh Tran

ClientType:

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate the efficiency of various cleaners in the removal of motor oil from stainless steel coupons.

Experimental Procedure:

Soiling process:
A set of six stainless steel coupons were weighed on an analytical balance to determine their initial mass. Once this was completed the coupons were evenly soiled with half a gram of motor oil with a handheld swab. The coupons were reweighed to determine the mass of the coupons with the contaminant applied.

Cleaning process:
Dilutions were prepared for the two cleaners, SWR One and Suma Break-Up HD Degreaser as recommended by the vendor. Two 500 mL beaker solutions were made with 10% dilution of SWR One cleaner, and the other with 5% dilution of Suma Break-Up HD Degreaser. Three soiled coupons were placed on a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with a spray of cleaning solution. Each coupon was sprayed one time with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). The process was repeated for the remaining three soiled coupons with the second cleaner. The coupons were allowed to dry for an hour before being weighed. The coupons were also weighed a full day afterward to determine if there were any significant changes in mass. Final weights were recorded, efficiencies were calculated and recorded.

Results:

Cleaner	Initial wt	Final wt	% Removed
SWR One	0.5006	0.0134	97.32
	0.5025	0.0085	98.31
	0.5004	0.0117	97.66
Suma Break-Up HD Degreaser	0.5053	0.0144	97.15
	0.4938	0.0142	97.12
	0.5003	0.0198	96.04

Summary:

Substrates:	Stainless Steel				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
SWR Corporation	SWR One	10	97.76	☑	
Diversey Corporation	Suma Break-Up HD Degreaser	5	96.77	☑	

Conclusion: In terms of overall effectiveness, both cleaners were very effective at removing motor oil from the stainless steel surfaces. The SWR One cleaner was at 97.76 and the Suma Break-Up HD Degreaser was 96.77.