CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 04/25/2024

Experimenters: Amelia Wagner

ClientType: Environmental Sustainability Company

ProjectNumber: Project #1

Substrates: Stainless Steel, Steel, Chrome

PartType: Coupon

Contaminants: Inks, Lubricating/Lapping Oils, Oil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: All-purpose test to determine the efficacy of the GeoPro X product in removing GS 34 standard maintenance soil from a variety of substrates compared to other janitorial and industrial degreasing products.

Experimental Procedure: Three coupons of each substrate were used per cleaning product, for a total of 24 coupons. Each coupon was weighed using a gravimetric balance and had their weights recorded. Each coupon was then soiled with about 0.5 grams of GS 34 maintenance soil by using a swab to administer the contaminant down the center of the coupons. The contaminated coupons were then left to dry for 24 hours. After the 24 hour drying period, each coupon was weighed again, and had their 'dirty weights' recorded. The coupons were then cleaned with their respective cleaning product using the Straight Line Washability Unit (or SLW) to ensure a standard pressure is applied to each coupon while being manually wiped. Two sprays of the correct cleaner was applied to a wypall that is attached to the cleaning sled of the SLW to wipe the soil away and two sprays were applied directly to each coupon (meaning each coupon was cleaned with about 2.5 ml of cleaning chemisty). The SLW unit was run for 20 cycles (20 back and forth motions) for each coupon. Once cleaned, the coupons were allowed to air dry before having their final weights recorded.

Results:

Cleaner	Coupon Type	Initial wt of cont.	Final wt of cont.	%Cont Removed	AVG percent removal	AVG Overall Removal
GeoPro X 1.5%	Chrome	0.0867	0.0097	88.81	92.83	93.51
		0.1525	0.0057	96.26		
		0.1076	0.0071	93.40		
	Stainless Steel	0.2139	0.0051	97.62	95.02	
		0.1020	0.0059	94.22		
		0.0813	0.0055	93.23		
	Steel	0.0967	0.0060	93.80	92.67	
		0.0596	0.0032	94.68		
		0.0545	0.0057	89.54		
Formula 409 RTU	Chrome	0.1551	0.0055	96.45	97.48	95.57
		0.1320	0.0005	99.62		
		0.1182	0.0043	96.36		
	Stainless Steel	0.0828	0.0030	96.38	96.65	
		0.0706	0.0033	95.33		
		0.2123	0.0037	98.26		
	Steel	0.0412	0.0034	91.75	92.58	
		0.0334	0.0041	87.72		
		0.1568	0.0027	98.28		
Polychem Deox 007 1:7	Chrome	0.1442	0.0055	96.19	94.48	94.64
		0.0756	0.0059	92.20		
		0.0952	0.0047	95.06		
	Stainless Steel	0.1109	0.0043	96.12	93.88	
		0.0830	0.0049	94.10		
		0.0547	0.0047	91.41		
	Steel	0.0665	0.0036	94.59	95.57	
		0.0488	0.0026	94.67		
		0.1255	0.0032	97.45		

Summary:

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Substrates:	Stainless Steel, Steel, Chrome				
Contaminants:	Inks, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
AquOm Inc	GeoProX	1.5%	93.51	☑	
Clorox Company	Formula 409 All Purpose Cleaner	RTU	95.57	☑	
US Polychem Corporation	Polychem DEOX 007	12.5%	94.64	☑	

Conclusion: All products tested performed comparatively and are highly effective in removing GS34 maintenance soil from Chrome, Stainless Steel, and General Steel.