CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 04/30/2024

Experimenters: Amelia Wagner

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel, Steel, Chrome

PartType: Coupon

Contaminants: Inks, Lubricating/Lapping Oils, Oil

Cleaning Methods:

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. Rerun of previous test using a higher concentration of GeoPro X to see if the higher concentration leads to a higher efficacy.

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 chemistry). 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	Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	AVG % Removed	Overall % Removed
GeoPro X 3%	Chrome	0.1559	0.0046	97.05	95.52	96.25
		0.0767	0.0019	97.52		
		0.0250	0.0020	92.00		
	Stainless Steel	0.0656	0.0025	96.19	96.95	
		0.0735	0.0024	96.73		
		0.1935	0.0040	97.93		
	General Steel	0.2593	0.0048	98.15	96.26	
		0.1623	0.0039	97.60		
		0.0646	0.0045	93.03		
Formula 409 RTU	Chrome	0.0526	0.0026	95.06	97.12	97.32
		0.1080	0.0020	98.15		
		0.0546	0.0010	98.17		
	Stainless Steel	0.1732	0.0039	97.75	97.12	
		0.0705	0.0038	94.61		
		0.1710	0.0017	99.01		
	General Steel	0.1167	0.0018	98.46	97.70	
		0.1803	0.0020	98.89		
		0.1130	0.0048	95.75		
Polychem Deox 007 1:7	Chrome	0.0426	0.0011	97.42	96.27	97.92
		0.1805	0.0014	99.22		
		0.1317	0.0103	92.18		
	Stainless Steel	0.1492	0.0014	99.06	98.66	
		0.0856	0.0005	99.42		
		0.1046	0.0026	97.51		
	General Steel	0.0831	0.0010	98.80	98.81	
		0.1564	0.0017	98.91		
		0.2040	0.0026	98.73		

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	3%	96.25	☑	
Clorox Company	Formula 409 All Purpose Cleaner	RTU	97.32	☑	
US Polychem Corporation	Polychem DEOX 007	12.5%	97.92	☑	

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