CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2019

DateRun: 08/14/2019

Experimenters: Othon Pagounes

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate an all-purpose degreasing cleaner on the removal of baked-on oil from stainless steel coupons.

Experimental Procedure: Two contaminants, maintenance soil (10 g carbon black, 10 g iron oxide, 100 ml WD-40, 100 ml hydraulic oil, and 100 ml gear oil) and production soil (200 ml Quench oil, 200 ml cutting oil) were each prepared by mixing for 20 minutes at room temperature (68˚F) using a magnetic stirrer.

Approximately 100 mg of each soil was applied to a pre-weighed clean stainless-steel coupon on one side using a handheld swab. The maintenance soil contaminated coupons were baked in an oven for 30 minutes at a temperature of 40° C (105° F). Production soil contaminated coupons were baked in an oven for 30 minutes at 105° C (220 ° F). Coupons cooled at room temperature (68˚F) before taking dirty weights.

Three coupons with the same contaminant were immersed in the unheated, ready-to-use cleaner for 30 minutes. Coupons were rinsed in an unheated DI water bath for 20 minutes before drying in the oven at 105° C for 30 minutes. Coupons cooled to room temperature (68˚F) before final weights were recorded.

Results: Comp ORW showed efficient removal visually and gravimetrically of the production soil. Alternatively, the cleaner was not effective in removing the maintenance soil.

Substrate	Soil	Initial Wt. Cont.	Final Wt. Cont.	% Cont. Removed	% Overall Removed
Stainless Steel	M - Soil	0.0783	0.0652	16.73	18.12
		0.1020	0.0826	19.02	
		0.1069	0.0870	18.62	
	P - Soil	0.1097	0.0122	88.88	80.31
		0.0597	0.0145	75.71	
		0.0723	0.0171	76.35	

Summary:

Substrates:	Stainless Steel				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Pro Action Fluid Company	Comp ORW	100	85.69	☑	Production fluid

Conclusion: Comp ORW was not effective at removing maintenance soil, but it was effective at removing production soil on stainless steel coupons.