

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 01/24/2020

Experimenters: Duc Vu

ClientType: Chemical Company

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Thickener

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: Determine the effectiveness of various cleaners for removing a thickener from stainless steel using unheated and heated immersion.

Experimental Procedure: Dirty weights for pre-coated stainless-steel coupons, three for each cleaner, were immersed in unheated cleaners at their recommended low concentrations; DI water was heated for this trial at 150F. The coupons were immersed for 15 minutes before air blowing dry and taking final weights.

Results:

Cleaner	Initial Weight of Contaminant	Final Weight of Contaminant	% Contaminant Removed	Average % Removal
1	0.7283g	0.7232g	0.70%	-1.08%
	0.6188g	0.6373g	-2.98%	
	0.5853g	0.5908g	-0.94%	
2	0.5945g	0.6062	-1.97%	-1.79%
	0.4535g	0.4598	-1.39%	
	0.2638g	0.2691	-2.01%	
3	0.6830g	0.6855	-0.37%	-4.52%
	0.5160g	0.5530	-7.17%	
	0.6095g	0.6463	-6.04%	
4	0.3009g	0.4217	-40.15%	-24.57%
	0.5477g	0.6580	-20.14%	
	0.3509g	0.3980	-13.42%	
5	0.5520g	0.5268	4.57%	0.38%
	0.2362g	0.2280	3.47%	
	0.5634g	0.6022	-6.89%	
6	0.6861g	0.7128	-3.89%	-2.32%
	0.1910g	0.1929	-0.99%	
	0.3755g	0.3833	-2.08%	

Observations:

During the testing of the DI Water, it seemed that it was relatively most effective in removing the soil from the coupons. However, the DI Water did not dissolve the thickener visually compared to the other cleaners. Instead, the DI Water began to peel the thickener from the stainless-steel coupons much more than the other cleaners did.

Summary:

Substrates:		Stainless Steel			
Contaminants:		Thickener			
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	20%	-1.08	<input type="checkbox"/>	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5%	-1.79	<input type="checkbox"/>	

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International Products Corporation	LF 2100 (Liquid Foam Cleaner)	2%	-4.52	<input type="checkbox"/>	
Alfa Aesar	Dimethyl Sulfoxide, 99+%	100%	-24.57	<input type="checkbox"/>	
Water	DI Water	100%	0.38	<input checked="" type="checkbox"/>	DI Water was able to loosen the thickener from the substrate. It needed agitation though to come off.
Alconox Inc	Alconox	2g/ 200ml	-2.32	<input type="checkbox"/>	

Conclusion:

None of the cleaners were effective at removing the thickener using unheated immersion, however, heated DI water (150F) loosened the thickener from the surface with agitation.