

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 03/05/2020

Experimenters: Othon Pagounes, Harry Rankin

ClientType: Adhesive Manufacturer

ProjectNumber: Project #3

Substrates: Stainless Steel

PartType: Part

Contaminants: Adhesive

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate the effectiveness of spot cleaning a stainless steel surface with a solvent to remove acrylic and silicone adhesives.

Experimental Procedure: Four pre-weighed stainless steel coupons, two for each adhesive, were soiled for each contaminant tested. Approximately 0.25 g of the soil was applied using a hand held swab. Each set of coupons were manually wiped with a cloth of the same material, dipped into heated (100° F) and unheated Sta-Sol® ESS 160. During this process, any noticeable soil removal was observed and recorded. Coupons were allowed were wiped with a paper towel to ensure no residue of the cleaner, and afterwards final weights were recorded. The efficiency of removal was calculated for each coupon cleaned.

Results:

Cleaner	Soil and Temp.	Initial wt. of cont. (g)	Final wt. of cont. (g)	% Cont. Removed	% Average
Sta-Sol® ESS 160	Acrylic Heated	0.4296	0.0028	99.35	98.31
	Acrylic Unheated	0.3395	0.0093	97.26	
	Silicone Heated	0.3980	0.004	98.99	96.74
	Silicone Unheated	0.3535	0.0195	94.48	

The cleaner evaluated overall performed better when heated compared to room temperature, but not a noticeable deference gravimetrically. The removal force exerted for the heated cleaner was less in contrast to the room temperature coupons. The acrylic in comparison to the silicone adhesive required more effort in the process. The acrylic adhesive needed more force during the manual wipe, with more pressure applied with the thumb in the spot clean. Some areas of the room temperature coupon were spot cleaned with the addition of even more applied pressure.

Summary:

Substrates:		Stainless Steel			
Contaminants:		Adhesive			
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
JR Hess & Co., Inc.	Sta-Sol ESS 160	100%	95.87	<input checked="" type="checkbox"/>	Acrylic and Silicone Average Removal Combined
JR Hess & Co., Inc.	Sta-Sol ESS 160	100%	99.17	<input checked="" type="checkbox"/>	Acrylic and Silicone Adhesive.

Conclusion: Sta Sol ESS 160 was effective with removing both heated and unheated of acrylic and silicone adhesives using a spot cleaning method. A comparison to toluene will be made during the next round of testing.