

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 36
 DateRun: 12/05/2024
 Experimenters: Alexander Symko
 ClientType: Manufacturing
 ProjectNumber: Project #1
 Substrates: Laminate
 PartType: Coupon
 Contaminants: Adhesive
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric, Tactile
 Purpose: Evaluate HSP mixture options for removing both the Jowat hot-melt adhesive and wilsonart adhesive from laminate coupons

Experimental Procedure: Two sets of 9 coupons were weighed and soiled with the Jowat Hot-melt adhesive and wilsonart banding adhesive and then weighed again. The coupons were then scrubbed for 30 seconds with a rag that had been soaked in one of the three solvent mixtures. The first being a mixture (by weight) of Acetone (34%) and Ethyl Acetate (66%), the second being anisole (21%) and 1,3-dioxolane (79%), and the last being acetone (20%) and anisole (80%). After being wiped, the coupons were allowed to air dry overnight and weighed a final time to evaluate how much of the soil was removed.

Results:	Cleaner	Adhesive	Coupon #	Initial	Dirty	Clean	%Cont. Removed	Average % Removal	
1	Jowat Hot-Melt Adhesive	1	4.135	4.5492	4.4950	13.09	66.75		
		2	4.7450	4.7887	4.7382	115.56			
		3	4.7172	4.7623	4.7300	71.62			
		2	Jowat Hot-Melt Adhesive	4	4.6853	4.7348	4.6922	86.06	86.07
				5	4.8106	7.8404	4.8139	99.89	
				6	4.5663	4.6117	4.5789	72.25	
		3	Jowat Hot-Melt Adhesive	7	4.6290	4.6712	4.6267	105.45	135.73
				8	4.8045	4.8485	4.7847	145.00	
				9	4.6141	4.6423	4.5981	156.74	
1	Wilsonart 3000	10	4.3508	4.3841	4.3458	115.02	115.36		
		11	4.9470	4.9759	4.9449	107.27			
		12	4.7400	4.7652	4.7340	123.81			
		2	Wilsonart 3000	13	5.0428	5.0749	5.0432	98.75	67.69
				14	4.9769	5.0441	5.0035	60.42	
				15	4.8471	4.9020	4.8779	43.90	
		3	Wilsonart 3000	16	4.1546	4.1920	4.1586	89.30	76.44
				17	4.5026	4.5514	4.5153	73.98	
				18	4.4584	4.5014	4.4730	66.05	

Summary:

Conclusion: The results of this test were less than promising, the range of percent removal was incredibly broad, with 7 of the 18 trial coupons reporting removal percentages significantly over 100%. This could be due to a variety of factors, it could be due to the solvent mixtures attacking the substrate, inaccuracies in analytical equipment, or some other confounding variable. A re-test is necessary.