CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 33

DateRun: 07/02/2024

Experimenters: Alexander Symko, Rachael Rososky

ClientType: Manufacturing

ProjectNumber: Project #1

Substrates: Laminate

PartType: Coupon

Contaminants: Adhesive

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: Evaluate the effectiveness of HSP solvent blends on removing jowat hot-melt adhesive from laminate substrate

Experimental Procedure: Initial weight of 12 laminate coupons was recorded. All 12 coupons were soiled with 4 beads of adhesive (about 0.25 grams) each with the use of a heat gun in the fume hood. Coupons were left to air dry and dirty weights were recorded. 4 HSPiP solvent blends were prepared in the fume hood, which included Cleaner A (58% Anisole, 42% Diethyl Carbonate), Cleaner B (52% Acetone, 48% Ethyl Acetate), Cleaner C (47% Ethyl Acetate, 53% Thiophene), and Cleaner D (23% Acetone, 77% Anisole). Each coupon was manually cleaned with a wypall and a cleaner for 30 seconds (3 coupons per cleaner). The coupons were left to dry in the fume hood. Clean weights were taken for all coupons.

Results:

Solvent Blend	Coupon #	Initial Weight	Dirty Weight	Clean Weight	% Removal	Average % Removal
A	1	5.9621	6.1903	6.1734	7.41	6.76
	2	5.7058	5.8983	5.8814	8.78	
	3	5.8759	6.1076	6.0981	4.10	
B	4	5.8526	6.0897	6.0788	4.60	4.08
	5	6.2696	6.4909	6.4803	4.79	
	6	5.5055	5.7231	5.7169	2.85	
C	7	5.6060	5.8409	5.8291	5.02	6.86
	8	5.6357	5.8812	5.8679	5.42	
	9	5.8505	6.0417	6.0223	10.15	
D	10	5.8740	6.1199	6.1070	5.25	4.51
	11	5.7596	6.0039	5.9939	4.09	
	12	5.8692	6.1175	6.1071	4.19	

Summary:

Conclusion: None of the solvent blends were effective in removing the adhesive in this application, a re-examination of the cleaning process is necessary and a retest is required.