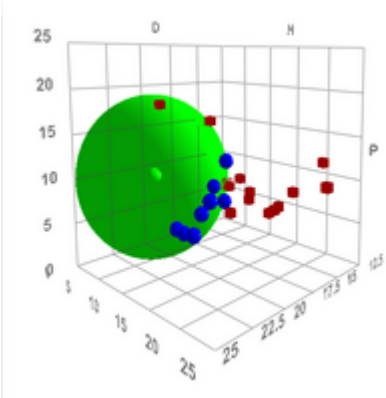
CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	33
DateRun:	06/27/2024
Experimenters:	Alexander Symko
ClientType:	Manufacturing
ProjectNumber:	Project #1
Substrates:	Laminate
PartType:	Coupon
Contaminants:	Adhesive
Cleaning Methods:	Immersion/Soak
Analytical Methods:	HSPiP
Purpose:	Determining an effective solvent for removing hot-melt adhesive from laminate substrate
Experimental Procedure:	24 strips of laminate were cut such that they were of equal size and were able to fit through the neck of a scintillation vial. Each of these laminate strips were then soiled by melting a single bead of jowatherm 288.60 hot-melt adhesive onto the surface. The coupons were then allowed to soak for 3 hours, with observations being taken every hour. A 1 rating denotes most or complete de-adhesion of the adhesive from the substrate, while a 0 rating means some of or none of the adhesive was de-adhered from the substrate. Once these values were obtained, a HSPiP Solvency sphere was generated to further examine the solubility of the target adhesive.

Results:

Solvent	1 Hr	2 Hrs	3 Hrs
Toluene	1	1	1
Dimethyl Carbonate	0	0	0
Xylenes	1	1	1
Benzyl Alcohol	0	0	0
Ethylene Glycol	0	0	0
Methyl Acetate	0	0	0
Undecane	0	0	0
Ethyl Lactate	0	0	0
Acetone	0	1	1
Ethyl Acetate	0	1	1
Methanol	0	0	0
Ethanol	0	0	0
1,3-Dioxolane	1	1	1
Diethyl Carbonate	0	0	1
1-Propanol	0	0	0
Isopropanol	0	0	0
Propylene Carbonate	0	0	0
Thiophene	1	1	1
1-methoxy-2-propanol	0	0	0
Dimethyl Sulfoxide	0	0	0
1-Butanol	0	0	0
Dimethyl Glutarate	0	0	0
Anisole	1	1	1
2-butoxyethyl acetate	0	0	0

CLEANING LABORATORY EVALUATION SUMMARY



Conklin HSP Sphere

Summary:

Conclusion: Toluene, Xylenes, 1,3-Dioxolane, Thiophene, and Anisole were effective at or before the 1 hour mark for de-adhering the adhesive from the laminate. Acetone and Ethyl Acetate were effective at the 2 hour mark, and Diethyl Carbonate was effective at the 3 hour mark. Based on these results, a sphere was generated and the next experiment will utilize solvent blends generated through the solvent optimizer.