CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2023
DateRun:	09/20/2023
Experimenters:	Amelia Wagner
ClientType:	Coatings Manufacturer
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Part
Contaminants:	Adhesive
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To test the efficacy of a solvent in removing two types of glue adhesives from stainless steel coupons using unheated immersion methods.
Experimental Procedure:	Three pre weighed stainless steel coupons were used per each soil for a total of 6 coupons. The coupons were then soiled with their respective adhesives, half being soiled with adhesive 5017 and half being soiled with adhesive 5024. The soils were heated to 245 degrees F in order to melt the adhesives to a degree that would allow for a small amount of adhesive to be picked up using a spatula. The adhesive on the spatula was then reheated using a heat gun in order for the adhesive to be able to spread on bottom third of the coupons. The dirty weights of the coupons were then recorded. The coupons were then subjected to 45 minutes of unheated immersion with a stir bar set at 200 rpm in their respective cleaners. Once the coupons were removed from the cleaners, a manual wipe step was utilized (a singular wipe with a paper towel). All coupons were allowed to air dry for 30 minutes before final weights were recorded.

Results:

Cleaner	Soil	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
sec butyl acetate	adhesive 5017	0.7897	0.5266	33.32	68.13	69.49
		0.4604	0.0484	89.49		
		0.3959	0.0729	81.59		
	adhesive 5024	0.3413	0.1086	68.18	70.84	
		0.6658	0.1470	77.92		
		0.4161	0.1397	66.43		

Coupons were still wet from the sec butyl acetate after post manual wipe step. The weight of the cleaner left on the coupon was included in the final recorded weights.

Summary:

Conclusion: Sec butyl acetate is not effective in removing either adhesive from stainless steel.