

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2011
 DateRun: 03/07/2011
 Experimenters: Heidi Wilcox, Junhee Cho
 ClientType:
 ProjectNumber: Project #1
 Substrates: Ceramics, Stainless Steel
 PartType: Coupon
 Contaminants: Adhesive
 Cleaning Methods: Immersion/Soak
 Analytical Methods:

Purpose: To find a substitution for M.E.K. as a cleaning agent to remove adhesive

Experimental Procedure: Four products were selected from the lab's on-line database, www.cleansolutions.org, based on past testing results matching client supplied information. Two products were used at full strength as recommended by the vendor and two products were diluted to 5% in 600 ml beakers. Four sets of twelve pre-weight ceramic and stainless steel coupons were coated with the supplied adhesive soil using a hand held swab. The coating was allowed to dry for one day at room temperature. Once dry, the coupons were weighed a second time to determine the amount of soil applied. Three coupons were immersed into each solution and cleaned for 15 minutes using stir-bar agitation. All four products were used at room temperature. After cleaning process, each coupon was wiped with paper towel manually. Final weights were recorded and efficiencies were calculated for each coupon cleaned.

Results: In this study, visual analysis was conducted for the ceramic coupons instead of gravimetric analysis because these coupons may absorb the cleaner excessively. This makes gravimetric results inconclusive. However, for stainless steel coupons, gravimetric analysis was conducted.

Visual Table			
Cleaner	Observation		
Bio T Max	5~10% removed		
Biosolv	80~85% removed		
ND LF Supreme	70~75% removed		
Amberclean SC11	5~10% removed		
Gravimetric Table			
Cleaner	Initial wt	Final wt	% Removed
Bio T Max			
	0.3018	0.2367	21.57
	0.1972	0.1804	8.52
	0.4045	0.3226	20.25
Bio- Solv			
	0.2169	0.0039	98.2
	0.253	0.0137	94.58
	0.2501	0.0174	93.04
ND Supreme			
	0.3551	0.2969	16.39
	0.2874	0.2411	16.11
	0.1979	0.1734	12.38
Amberclean sc11			
	0.363	0.2716	25.18
	0.2446	0.2055	15.99
	0.2046	0.1715	16.18

Summary:

Substrates:	Ceramics, Stainless Steel					
Contaminants:	Adhesive					
Company Name:		Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems		Bio T Max	100	16.78	<input type="checkbox"/>	
Phoenix Resins Inc		BioSolv	100	95.28	<input checked="" type="checkbox"/>	

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MacDermid Industrial Products	ND Supreme	5	14.96	<input type="checkbox"/>	
Innovative Organics Inc	Amberclean SC 11	5	19.11	<input type="checkbox"/>	

Conclusion:

Bio Solv were effective to remove the adhesive soil on ceramic and stainless steel coupon with immersion cleaning. It may be possible substitute for M.E.K in current cleaning process.