CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 36

DateRun: 08/20/2025

Experimenters: Tatyanna Moreland Junior, Alexander Symko

ClientType: Textile Mfr

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Abrasive

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: Test previously identified alternatives of Benzyl Alcohol, Anisole, Thiophene, and 1-methoxy-2-propanol in a cleaning application that matches actual in-situ cleaning done at the client's facility.

Experimental Procedure: 15 stainless steel coupons were prepared for this experiment, with weights prior to soiling be taken and recorded. For soiling procedure each of the coupons were soiled with approximately 1/10 of a gram of cross-linker+polymer mixture, prepared in a 4:100 mixture. After soiling, the coupons were put into a laboratory convection oven and baked at 300 degrees Fahrenheit for 30 minutes. Following this, the coupons were allowed to cool to room temperature for 1 hour and then dirty weights were taken. The chosen solvents were then applied to a cotton rag and the coupons were vigorously manually wiped for 30 seconds each with the chosen solvent. These were then allowed time to air dry overnight before final weights were taken.

Results:

Solvent	Coupon #	Initial wt.	Cont. wt	Clean wt.
Methyl Ethyl Ketone	12	60.7306	60.8434	60.7383
	17	60.4121	60.5171	60.4257
	36	60.9888	61.1045	61.0194
Thiophene	33	60.7854	60.8734	60.7973
	1	60.6177	60.7234	60.6272
	28	60.7652	60.8688	60.7809
Anisole	21	61.0115	61.1092	61.0281
	2	60.9375	61.0308	60.9687
	13	60.6042	60.6706	60.6170
1-methoxy-2-propanol	29	60.9335	61.0272	60.9813
	5	61.0058	61.1173	61.0801
	32	60.9818	61.0896	61.0548
benzyl alcohol	20	61.0607	61.1907	61.1373
	8	60.9664	61.0739	61.0316
	7	60.8798	60.9915	60.9462

Summary:

Substrates:	Stainless Steel				
Contaminants:	Abrasive				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fisher Scientific	Anisole (CAS: 100-66-3)	100%	76.76	☑	
Alfa Aesar	1-Methoxy 2-Propanol	100%	38.21	☐	
Alfa Aesar	Thiophene	100%	87.45	☑	
No Specific Vendor	Benzyl Alcohol	100%	40.33	☐	
No Specific Vendor	Methyl Ethyl Ketone (MEK)	100%	84.59	☑	

Conclusion: Based on the results of this test, Thiophene proved to be very effective at removing the client's soil from the stainless steel coupons averaging 87.45% removal. This was closely followed in effectiveness by Methyl Ethyl Ketone with an average removal of 84.59%. Third most effective was Anisole with 76.76% average removal. Neither 1-methoxy-2-propanol or Benzyl Alcohol were considered effective in this cleaning application.