

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020
 DateRun: 07/08/2020
 Experimenters: Alicia McCarthy, Hayley Byra
 ClientType: Metal
 ProjectNumber: Project #1
 Substrates: Glass/Quartz
 PartType: Coupon
 Contaminants: Resins/Rosins
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric

Purpose: The purpose of this experiment was to determine the effectiveness of four cleaners; Propylene carbonate, SC Aircraft & Metal Cleaner, Ozzy Juice SW-3 and Dimethyl glutarate in removing a water rosin based coating from glass coupons using heated immersion at 120F for 15 minutes.

Experimental Procedure: Three glass coupons were obtained and weighed for each of the four cleaners to be tested; Propylene carbonate (100% concentration), SC Aircraft and Metal Cleaner (20% concentration), Ozzy Juice SW-3 (20% concentration), and Dimethyl glutarate (100% concentration). The coupons were soiled with the water rosin based coating and an additional weight measurement was taken. Cleaning solutions were allowed to heat to a temperature of 120 degrees Fahrenheit. Once solutions reached the temperature, the coupons were placed inside the solutions for 15 minutes. Once the 15 minutes had passed, coupons were allowed to air dry and a clean weight was taken. Coupons were then wiped once with a paper towel and a final clean weight measurement was obtained.

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
Propylene Carbonate	0.0818	0.0825	-0.86	0.33
	0.0747	0.0740	0.94	
	0.0769	0.0762	0.91	
SC Aircraft & Metal Cleaner	0.0887	0.0776	12.51	6.08
	0.0775	0.0758	2.19	
	0.0824	0.0795	3.52	
Ozzy Juice	0.0870	0.0882	-1.38	-0.47
	0.0827	0.0817	1.21	
	0.0816	0.0826	-1.23	
Dimethyl Glutarate	0.0894	0.0000	100.00	99.38
	0.0793	0.0000	100.00	
	0.0810	0.0015	98.15	

Substrates:		Glass/Quartz				
Contaminants:		Resins/Rosins				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
Fisher Scientific	Propylene carbonate 99.5% (CAS: 108-32-7)	100%	0.33	<input type="checkbox"/>		
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	20%	6.08	<input type="checkbox"/>		
Fisher Scientific	Dimethyl glutarate (CAS:1119-40-0)	100%	99.38	<input checked="" type="checkbox"/>		
Chem Free Corporation	SW-3 Ozzy Juice (Improved Low Odor)	20%	-0.47	<input type="checkbox"/>		

Conclusion: Dimethyl glutarate was the most effective cleaner removing on average 99.38% of the water rosin based coating from glass substrates using heated immersion at 120 degrees Fahrenheit for 15 minutes and a single wipe with a paper towel.