CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 06/15/2020

Experimenters: Alicia McCarthy

ClientType: Aircraft Parts Manufacturer

ProjectNumber: Project #1

Substrates: Glass/Quartz

PartType: Coupon

Contaminants: Resins/Rosins

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate the effectiveness and performance of various cleaners on the removal of rosin #4 from glass coupons.

Experimental Procedure: A total of seven pre-weighted glass coupons were soiled, all with the given containment, Rosin #4. The bottom one third of the coupon was soiled on one side using a handheld swab. Each coupon was placed into a beaker and immersed for a total of 60 minutes. During this process, any noticeable soil removal was observed at 5,15,30 and 60 minutes. Coupons were allowed to dry for five minutes, and afterwards final weights were recorded as well as efficiency of removal was calculated for each coupon cleaned.

Results:

Time	Cleaner	Initial wt	Dirty wt	Clean wt.	Initial wt of cont.	Final wt of cont.	%Cont Removed
30 Minutes	Ozzy Juice SW 3	15.7476	17.5817	17.6538	1.8341	1.9062	-3.93
	SC Actisolv	15.4629	18.7466	18.7958	3.2837	3.3329	-1.50
	SC Maxisolv	15.4258	17.3284	17.0804	1.9026	1.6546	13.03
	Method Detergent	n/a	n/a	n/a	n/a	n/a	n/a
	7th Generation	15.6309	17.2871	17.2634	1.6562	1.6325	1.43
	Dimethyl glutarate	15.9413	18.1324	18.0100	2.1911	2.0687	5.59
	Propylene carbonate	15.4282	17.7850	17.8396	2.3568	2.4114	-2.32
	Smartsolv 605	15.8378	18.0651	17.7137	2.2273	1.8759	15.78
Time	Cleaner	Initial wt	Dirty wt	Clean wt.	Initial wt of cont.	Final wt of cont.	%Cont Removed
60 Minutes	Ozzy Juice SW 3	15.7476	17.5817	18.8092	1.8341	3.0616	-66.93
	SC Actisolv	15.4629	18.7466	17.6775	3.2837	2.2146	32.56
	SC Maxisolv	15.4258	17.3284	16.9170	1.9026	1.4912	21.62
	7th Generation	15.6309	17.2871	17.2814	1.6562	1.6505	0.34
	Dimethyl glutarate	15.9413	18.1324	17.724	2.1911	1.7827	18.64
	Propylene carbonate	15.4282	17.7850	17.7864	2.3568	2.3582	-0.06
	Smartsolv 605	15.8378	18.0651	17.2678	2.2273	1.4300	35.80

Summary: SC Maxisolv, Dimethyl glutarate, and SmartSolv 605 showed visual removal and change in cleaner color at 5min, 15min, 30min, and 1 hour, and increased in effectives with additional immersion time. The remaining cleaners showed some swelling (such as Ozzy Juice SW 3 shown in attached images), which could be contributed to the contaminant absorbing the cleaner, additionally no major removal visually or change in cleaner color were observed.

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Conclusion: The subsequent testing will include the introduction of heat and agitation in the form of ultrasonics, to further investigate the effectiveness of these evaluated cleaners.