CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 08/12/2020

Experimenters: Hayley Byra

ClientType:

ProjectNumber: Project #1

Substrates:

PartType: Part

Contaminants: Paints

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of alternative solvents at the removal of acrylic paint from metal paint cans.

Experimental Procedure: Initial weights were taken for three paint cans. Yellow acrylic topcoat paint was poured into each can and swirled around to sufficiently coat the walls of the can. Any excess paint was poured back into the original can. The paint was allowed to dry for approximately twenty minutes before the cans were weighed again for a contaminated weight. Three hundred milliliters of solvent were poured into the paint can and scrubbed using a brush for fifteen minutes. When the cleaner was saturated, it was poured out and a fresh two hundred milliliters of cleaner was added and continued to be scrubbed for the remaining time. The paint cans were allowed to dry for twenty minutes before obtaining final weights.

Results:

Cleaner	Paint Can	Initial wt of cont.	Final wt of cont.	%Cont Removed
Propylene Carbonate	A	10.8200	2.0200	81.33
Dimethyl Glutarate	B	11.1600	1.7700	84.14
Toluene	C	12.9700	0.0900	99.31

Summary:

Substrates:					
Contaminants:	Paints				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fisher Scientific	Propylene carbonate 99.5% (CAS: 108-32-7)	99.5%	81.33	☑	
Fisher Scientific	Dimethyl glutarate (CAS:1119-40-0)	99.5%	84.14	☑	
EM Science	Toluene	99.5%	99.31	☑	

Conclusion: Toluene was the most effective at removing acrylic paint from the metal paint cans with a percent removal rate of 99.31%. Dimethyl glutarate and propylene carbonate were both effective with percent removal rates of 84.14% and 81.33% respectively.