CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2023
DateRun:	10/13/2023
Experimenters:	Alexander Symko, Amelia Wagner
ClientType:	University
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Part
Contaminants:	Paints
Cleaning Methods:	High Pressure Spray
Analytical Methods:	Visual
Purpose:	Evaluating efficacy of HSPiP Solvent mixtures on cleaning wet paint from gun interior parts via siphoning.
Experimental Procedure:	This experiment focused on trying to replicate process conditions as closely as possible. As such, the supplied compressed air paint gun from the client was used as a coupon. Prior to testing, the feed tube for the paint gun was cleaned using in-house paint removers to ensure that there was as little dried paint present as possible. Pictures were taken of the interior prior to soiling. The interior of the feed tube was then soiled with the 1:1 mixture of primer and paint, and pictures were taken after soiling. The HSPiP calculated mixtures; (1) 16% Dimethyl Glutarate + 84% Methyl Acetate, (2) 38% Dimethyl Carbonate + 62% Ethyl Acetate, were prepared and then siphoned through the gun for 1 minute each. The interior of the feed tube was photographed after each solvent mixture was siphoned through to establish effectiveness. Cleanliness was then rated on the standard scale of 1 to 5, with 1 being completely clean and 5 being completely dirty.
Results:	The results of this test were as follows:

Solvent Mixture	Final		
(1) 16% Dimethyl Glutarate, 84% Methyl Acetate	5	5	4.5
(2) 38% Dimethyl Carbonate, 62% Ethyl Acetate	3	3.5	3

Summary:

Conclusion: In conclusion, the results of this test indicated that mixture 2 was more effective at removing the wet paint from the paint feed tube interior. However, given the difficulties of testing using the method of actually spraying solvent through the gun, it is the opinion of the experimenters that testing should be done with these mixtures on-site by the client in addition to in-house testing.