CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 03/03/2008

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Aluminum Anodizing Job Shop

ProjectNumber: Project #2

Substrates: Aluminum

PartType: Coupon

Contaminants: Coatings

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate top two performing products using extended immersion cleaning

Experimental Procedure: Two products selected from the previous trials based on performance used at full strength and room temperature to simulate current cleaning practice.
Six preweighed 5052 Aluminum coupons were coated with the Stan Chem Inc Red Stop Off (78-93-3, 108-88-3) lacquer using a handheld swab. The coating was allowed to dry for about an hour. Once dry, the coupons were coated a second and third time to more closely match the amount of lacquer applied supplied parts. Once the coating color matched the supplied parts, coupons were weighed a second time to determine the amount of Red Stop Off applied.
Three coupons were immersed into each solution and cleaned for 1200 minutes without agitation. Observations were made at 60, 120 and 1200 minutes. Rinsing was performed for 15 seconds using tap water heated to 120 F and followed by 30 seconds of air blow off with dry compressed air at room temperature. Final weights were recorded after the 1200 minutes (20 hours) and efficiencies were calculated for each coupon cleaned.

Results: After 60 minutes both products showed good removal of the coating. The table below lists the observations made at 60 minutes, 120 minutes and 1200 minutes.

Cleaner	Initial wt	Final wt	% Removed
Shopmaster RC	0.6339	0.5216	17.72
	0.5547	0.1827	67.06
	0.6915	0.7289	-5.41
SC Actisolv	0.6383	1.1382	-78.32
	0.4960	0.8404	-69.44
	0.5625	0.9896	-75.93

Cleaning efficiencies for each coupon after 2 and 20 hours of room temperature immersion.

Cleaner	Initial wt	Final wt	% Removed
Shopmaster RC 20 hrs	0.6339	0.0065	98.97
	0.5547	0.0041	99.26
	0.6915	0.0026	99.62
SC Actisolv 20 hrs	0.6383	0.0185	97.10
	0.4960	0.0018	99.64
	0.5625	0.0006	99.89

Summary:

Substrates:	Aluminum				
Contaminants:	Coatings				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Buckeye International	Shopmaster RC	100	99.29	☑	
Gemtek Products	SC Actisolv Safety Solvent	100	98.88	☑	

Conclusion: Both products were very effective in removing the multiple coats of the lacquer using immersion soaking at room temperature. The next step will be to clean supplied parts using both ultrasonic cleaning and the extended immersion soaking.