CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 09/01/1998

Experimenters: Jason Marshall

ClientType: Name Plate Mfg-Etching

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Part

Contaminants: None

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual

Purpose: To determine if aqueous cleaner from previous trial will remove the paint.

Experimental Procedure: Initial weights of 6 customer supplied coupons were recorded. Two cleaning solutions were made from one product. One solution was a 5% solution made with DI water in a 600 mL beaker and heated to 130 F. The other was a 100% solution at room temperature. Three coupons were placed in each cleaning chemistry. The coupons in the 5% solution were weighed at 15, 30, 45, 60, 120 and 240 minutes. At each interval coupons were rinsed in tap water at room temperature for 20 seconds and air dried. The 100% solution was only weighed after 24 hours.

SUBSTRATE MATERIAL: Aluminum 3003 with paint (not to be removed)
CONTAMINANTS: None

Results: The 5% solution turned from a clear solution to slightly orange after the first interval, which would indicate paint removal. The 100% solution changed color after 4 hours. It was noted that all the coupons gained weight during their soaking periods. In conjunction with the color change, the weight gains may indicate the paint is absorbing the cleaning solution, causing swelling of the paint. After the coupons were removed form the solutions, the soaked coupons were compared to non-soaked coupons. There was a definite color change between the coupons. Also, the 100%-soaked coupons had a gritty texture to them after the 24 hour soaking. Table 1 list the weight changes for the 5% solution and Figure 1 shows a graphical representation of the weight gain versus time. Table 2 contains the data for the 100% solution which is graphically represented in Figure 2.

Table 1. Weight Gains for 5% at 130 F

	Time (min)						
Coupon #	0	15	30	45	60	120	240
1	11.3724	11.3801	11.3895	11.394	11.3992	11.4168	11.3942
2	11.2766	11.2831	11.2918	11.2953	11.2993	11.31	11.3118
3	11.4864	11.4921	11.5035	11.5082	11.5095	11.5133	11.5057

Table 2. Weight Gains for 100% at RT

Coupon #	4	5	6
Initial Wt	11.3470	11.3616	11.3393
Final Wt	11.4232	11.4592	11.4120

Summary:

Substrates:	Aluminum				
Contaminants:	None				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Chrisal USA Inc	Super CMF 240	5	0.00	☐	
Chrisal USA Inc	Super CMF 240	100	0.00	☐	

Conclusion: The Chrisal product was determined to cause removal of the paint form the aluminum surface. The next test will be conducted using the AG Environmental Soy Gold 1000 product. Additional testing will be performed to find other possible cleaners.