CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 03/24/2008

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Electro-Optical Devices

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Fluxes

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate top performing products on second supplied contaminant.

Experimental Procedure: Three products plus the current product were all used at full strength and room temperature for removing the supplied flux. Twelve preweighed aluminum coupons were coated with two layers of the RMA flux using a handheld swab. Once dry, coupons were weighed a second time to determine the amount of flux added. Three coupons were manually wiped using the same method as previous trials, soaking the rag and wiping the surface. Coupons were wiped briefly with a dry wipe to remove any residual cleaner. Final weights were recorded, and efficiencies calculated for each coupon cleaned.

Results: All four products removed the flux from the aluminum coupons in under five minutes of manual wiping. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned. The efficiencies that are over 100% can typically be due to residual soils that were on the surface prior to the initial weights or due to the solvents damaging the surface. In this case, there was no apparent visual damage to the aluminum coupons.

Cleaner	Initial wt	Final wt	% Removed
SC Actisolv	0.0228	-0.0002	100.88
	0.0311	-0.0005	101.61
	0.0245	0.0005	97.96
Ionox HC 2	0.0234	0.0010	95.73
	0.0197	-0.0003	101.52
	0.0189	0.0008	95.77
DS 144	0.0263	-0.0004	101.52
	0.0232	-0.0002	100.86
	0.0182	-0.0002	101.1
IPA	0.0258	-0.0005	101.94
	0.0315	-0.0006	101.9
	0.0367	-0.0009	102.45

Summary:

Substrates:	Aluminum				
Contaminants:	Fluxes				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Gemtek Products	SC Actisolv Safety Solvent	100	100.15	☑	
Kyzen Corporation	Ionox HC 2	100	97.67	☑	
Dysol	DS 144S Wipe Solvent	100	101.16	☑	
Fisher Scientific	Isopropanol a459-4 70% VV (CAS: 67-63-0)	100	102.10	☑	

Conclusion: All three of the alternatives removed over 97% of the flux from the aluminum coupons and were closely matched to the current cleaning product.