CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 04/02/2008

Experimenters: Jason Marshall

ClientType: Electro-Optical Devices

ProjectNumber: Project #1

Substrates: Tin, Liquid

PartType: Part

Contaminants: None

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate compatibility of top cleaning alternatives with the tin metal strips used in the manufacture of solar cells.

Experimental Procedure: Equal length strips of the supplied tin wire were cut to place in a 10 ml glass vial containing full strength products at room temperatures. Each strip was weighed to establish a baseline weight. Strips were immersed in a solution for 24 hours. The pieces were then removed and wiped to remove any residual cleaning product. Final weights were measured, and weight loss was determined. Observations were made during the 24-hour period.

Results: During the compatibility test, no visual signs of damage were noted for any of the four products. Only one product, DS 144, had a weight change greater than 0.1%. One product, Ionox HC 2, had a slight increase in weight. Initial weights, final weights, weight change and percent change are listed in the table below.

Product	Initial Wt	Final Wt	Change	% Change
SC Actisolv	0.0981	0.0980	0.0001	0.10
Ionox HC 2	0.1058	0.1059	-0.0001	-0.09
DS 144	0.0970	0.0966	0.0004	0.41
IPA	0.0904	0.0903	0.0001	0.11

Summary:

Substrates:	Tin, Liquid
Contaminants:	None

Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Gemtek Products	SC Actisolv Safety Solvent	100	0.00	☑	
Kyzen Corporation	Ionox HC 2	100	0.00	☑	
Dysol	DS 144S Wipe Solvent	100	0.00	☑	
Fisher Scientific	Isopropanol a459-4 70% VV (CAS: 67-63-0)	100	0.00	☑	

Conclusion: No significant change in weight was noted for any of the four products over a 24-hour period of immersion.