

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001
 DateRun: 11/27/2001
 Experimenters: Jason Marshall
 ClientType: Electronics Manufacturer
 ProjectNumber: Project #1
 Substrates: Steel
 PartType: Part
 Contaminants: Films, Salts
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Visual
 Purpose: To evaluate cleaners using longer times and elevated temperature

Experimental Procedure: Three products from the previous trial were diluted to 20% using DI water in 1000 ml beakers. A fourth solution was used a full strength. All four products were heated to 140 F on a hot plate. One part was immersed half way into the solutions and cleaned for 20 minutes. At the end of cleaning the parts were rinsed with tap water at 120 F for 5 minutes. Parts were allowed to air dry. Observations were made at the 10 and 20 minutes. Contaminant: White powders (SiO₂, NHCl, (NH₄)₂SiF₆, or NH₄HF₂)

Results: Three of the four products were moderately successful after the 20 minute soaking. The DS 108 was not very effective. The following table lists observations made at T = 0, 10 and 20 minutes.

Table 1. Cleaning Observations

Cleaner	T = 0	T = 10	T = 20
1	Instantly cloudy	Very dark and cloudy. Still white powder in holes	White and crusty. Holes mostly clean
2	Slowly clouding up	Cloudy grey. Flat sides look clean. Round edges white	White and flaky. Good hole cleaning
3	Slowly clouding up	Cloudy. White still on part	White and crusty. Good hole cleaning
4	Slowly clouding up	Not very cloudy. White still on part	Lots of white still on part. OK hole cleaning

Summary:

Substrates:		Steel				
Contaminants:		Films, Salts				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
Buckeye International	Shopmaster	20		<input checked="" type="checkbox"/>		
Innovative Organics Inc	Amberclean 527 L	20		<input checked="" type="checkbox"/>		
Today & Beyond	Beyond 2001	20		<input checked="" type="checkbox"/>		
Dysol	DS 108 Wipe Solvent	100		<input type="checkbox"/>		

Conclusion: The three successful products will be evaluated in the next trial using ultrasonic energy.