

# 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: Ultrasonics  
 Analytical Methods: Visual

Purpose: To evaluate successful cleaners using ultrasonic energy

Experimental Procedure: The three cleaners were used at the same strength (20%) and temperature (140 F). Solutions were degassed in the Crest 40 kHz ultrasonic tank for 5 minutes prior to submersing parts. One part from the previous trial was cleaned in each of the solutions for 3 minutes. Parts were rinsed in a tap water spray for 1 minute at 120 F and dried with a heat gun at 500 F to decrease rusting. Observations were made after parts were dry.

Contaminant: White powders (SiO<sub>2</sub>, NHCl, (NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub>, or NH<sub>4</sub>HF<sub>2</sub>)

Results: The additional 3 minutes of ultrasonic energy was enough to remove nearly all of the white powders from the steel parts. The Amberclean 527 L was the most successful cleaner used. The other two products were equally to each other in their cleaning results.

Table 1. Ultrasonic Cleaning

Cleaner	Observations
Shopmaster	Good/excellent cleaning
Amberclean	Excellent Cleaning
Beyond 2001	Good/excellent cleaning

Summary:

<b>Substrates:</b>		Steel			
<b>Contaminants:</b>		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"/>	

Conclusion: A longer ultrasonic cleaning time would improve the results of removing the different white powders from the parts. Little of the green paint was removed during the immersion and ultrasonic cleaning.