

## CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006  
 DateRun: 11/29/2006  
 Experimenters: Jason Marshall, Heidi Wilcox  
 ClientType: Metal Working  
 ProjectNumber: Project #1  
 Substrates: Steel  
 PartType: Part  
 Contaminants: Oil  
 Cleaning Methods: Ultrasonics  
 Analytical Methods: Visual, Wipe  
 Purpose: To evaluate selected product on supplied parts.

Experimental Procedure: One product was selected from the on-site visit. The product was diluted to 5% using DI water in 2000 ml beaker and heated to 130 F in a Branson 3510 ultrasonic tank filled with water. The solution was degassed for 5 minutes. A small, slotted basket was filled with dirty parts and immersed into the beaker. Parts were cleaned for 2 minutes using 40 kHz ultrasonic energy. Following cleaning, the parts in the basket were immersed into a two-stage heated tap water rinsing process. Parts were agitated for 15 seconds in each of the two rinse beakers. The cleaned and rinsed parts were then emptied into a large basket with slots to dry. In addition, excess water was removed by both shaking the larger basket of parts and through compressed-dry air at room temperature for 1 minute. Observations were made. Parts were sent back to client for final evaluations.

Results: The parts looked very clean after two minutes of cleaning. No visible signs of oil were present. Likewise, following wipe testing with a white swab no oil was present. Photographs were also taken of each stage of the cleaning process.

Summary:

<b>Substrates:</b>	Steel					
<b>Contaminants:</b>	Oil					
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
Warren Chemical Company	Sea Wash Blue	5		<input checked="" type="checkbox"/>		

Conclusion: Sea Wash Blue at 5% for two minutes removed most of the oil that was on the parts. Parts were sent back for client approval.