

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1995  
 DateRun: 12/27/1995  
 Experimenters: Jay Jankauskas  
 ClientType: Adhesive Manufacturer  
 ProjectNumber: Project #1  
 Substrates: Stainless Steel  
 PartType: Coupon  
 Contaminants: Adhesive  
 Cleaning Methods: Manual Wipe  
 Analytical Methods: Visual  
 Purpose: Mixtures of best terpenes & aqueous cleaners

**Experimental Procedure:** The purpose of this experiment is to find a cleaner for Adhesive Manufacturer that will replace their current 4:1 heptane-toluene mixture. As of today, no aqueous or terpene chemistries have been effective. The alkene hydrocarbons from CSA (Bio-Safe 1023 & 1024) are the best performing chemistries to date. Today's test will be to try mixtures of the best terpenes and aqueous cleaners. A combination of the dissolving effects and the lifting effects of each of these cleaners might be good. The best solvents tested to date were Solvent Kleene D-Greeze 500, Oakite Inproclean 4000 T and the CSA chemicals. The best aqueous chemistries tested to-date are the AW Chesterton 803 Marine Solvent, MacDermid ND-17 and Brulin Compliance. Each chemistry was mixed up at a 50:50 ratio, one aqueous cleaner with a terpene solvent. Duro-Tac adhesive was allowed to sit on the coupons for 10 to 15 minutes. Cleaning solution was allowed to set on the contaminated coupons for thirty seconds.  
**SUBSTRATE MATERIAL:** 316 Stainless Steel Coupons  
**CONTAMINANTS:** Duro-Tac toluene-heptane based adhesive  
**CONTAMINATING PROCESS USED:** Adhesives applied on with swab and allowed to sit for 10 minutes to 15 minutes

**Results:**

Mixture	Time of Removal
AW Chest & D-greeze 500	35 seconds
AW Chest & Oakite 4000T	65 seconds
AW Chest & CSA 1023	50 seconds
ND 17 & D-greeze 500	35 seconds
ND 17 & 4000-T	50 seconds
ND 17 & CSA 1023	50 seconds
Brulin & D-greeze 500	55 seconds
Brulin & Oakite 4000T	65 seconds
Brulin & CSA 1023	55 seconds

**Summary:**

<b>Substrates:</b>		Stainless Steel				
<b>Contaminants:</b>		Adhesive				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>	
AW Chesterton	803 Industrial & Marine Solvent II	50		<input checked="" type="checkbox"/>	mix with D Greeze 500	
AW Chesterton	803 Industrial & Marine Solvent II	50		<input type="checkbox"/>	mix with Inproclean 4000 T	
AW Chesterton	803 Industrial & Marine Solvent II	50		<input type="checkbox"/>	mix with Bio Safe 1023	
MacDermid Industrial Products	ND 17	50		<input checked="" type="checkbox"/>	mix with D Greeze 500	
MacDermid Industrial Products	ND 17	50		<input type="checkbox"/>	mix with Inproclean 4000 T	
MacDermid Industrial Products	ND 17	50		<input type="checkbox"/>	mix with Bio Safe 1023	
Brulin Corporation	Compliance	50		<input type="checkbox"/>	mix with D Greeze 500	
Brulin Corporation	Compliance	50		<input type="checkbox"/>	mix with Inproclean 4000 T	
Brulin Corporation	Compliance	50		<input type="checkbox"/>	mix with Bio Safe 1023	

**Conclusion:**

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Either a mixture of AW Chesterton & D-Greeze 500 or the ND 17 & D-Greeze 500. One final test will be performed on larger stainless steel parts to find appropriate sit times of the cleaning chemistries.