CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2007
DateRun:	11/18/2007
Experimenters:	Heidi Wilcox
ClientType:	Wire & Cable Mfr
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Part
Contaminants:	Paints, Resins/Rosins
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Visual
Purpose:	To screen potential cleaning products for removing paint/resin from steel parts
Experimental Procedure:	Seven products from the previous trial and 7 new products were identified using the labs online database, www.cleanersolutions.org, based on supplied information. One hundred milliliters of each full-strength product was placed in a 200 ml beaker, except Micro 90, where 10 and 20 % solutions were used. A small piece of cured paint taken from a supplied part was placed in the beaker and they were put in a basket and lowered into a large immersion tank and heated to 120 F. The paint was allowed to sit in the solution to determine what effect the cleaning products would have. Observations were made at 15, 30, 60 and 120 minute intervals. Any signs of interaction between paint and cleaner were recorded. The solutions with the resin in them were then cooled and let to sit overnight. Observations were recorded next morning.

Results:

Product	Initial Appearance and observations
Micro 90 10%	Clear
15 min	Fizzing
30 min	Resin slightly softened
60 min	NC
120 min	NC, soln slightly tinted amber
overnight	NC
Micro 90 20%	Clear
15 min	Fizzing, soln cloudy
30 min	Resin slightly softened, less than 10% soln
60 min	NC
120 min	NC
overnight	NC
Improclean 3800	Clear
15 min	Streaks of brown in soln
30 min	Resin slightly softened, soln darker brown in color
60 min	Clear gel forming in soln. Resin softened. Soln turning darker in color
120 min	More gel formation and color of soln darkening (more dissolving)
overnight	More gel
Super Stripper	Purple
15 min	Soln separated in to light and dark layers
30 min	

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	Resin softening. Soln separated still & slightly darker
60 min	Soln still separated and resin slight softened but still hard
120 min	Soln darker and not separated. Resin same
Overnight	NC
Cycle Strip	Clear slight yellow
15 min	Started to dissolve paint, very aggressive fizzing
30 min	Foaming and fizzing, turning brown
60 min	Still dissolving paint
120min	Same
Overnight	No fizzing
EnviroCare Floor	Clear
Stripper	
10 min	Some dissolving
20 min	Darker and some fizzing
30 min	Some fizzing
45 min	Little fizzing
60 min	No fizzing
Green Solutions	Clear
10 min	Started to dissolve paint
20 min	Moderate fizzing
30 min	Some fizzing
45 min	Little fizzing
60 min	No fizzing, paint softer
AK 225	Clear
15 min	No Change
30 min	Resin slightly softened
60 min	No change
120 min	No change
Overnight	No change
Vertrel XP 10	Clear
15 min	Softened resin slightly
30 min	No change
60 min	NO change
120 min	Resin soft, easy to pull apart
Overnight	No change
Isopropyl alcohol	Clear
15 min	No change
30 min	Resin softened slightly
60 min	No change
120 min	No change
Overnight	No change
HFE 7100	Clear
15 min	Resin slightly softened
30 min	No change
60 min	No change

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120 min	No change
Overnight	No change
OS 30	Clear
15 min	Resin slightly softened
30 min	No change
60 min	No change
120 min	No change
Overnight	No change
Microcare MCA	Clear
15 min	Resin slightly softened
30 min	No change
60 min	No change
120 min	No change
Overnight	No change
Ensolve	Clear
15 min	Resin softened slightly
30 min	No change
60 min	Resin bubble is 3x starting size
120 min	Softer, can squeeze bubble with hands
Overnight	bubble is brittle, can break with hands

Summary:

Substrates:	Steel
Contaminants:	Paints, Resins/Rosins

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
International Products Corporation	Micro 90 Conc.	10	0.00	☑	
International Products Corporation	Micro 90 Conc.	20	0.00	☑	
Oakite Products	Inproclean 3800	100	0.00	☑	
Bi-O-Kleen Industries	Super Stripper - Floor Wax Remover	100	0.00	☑	
The Clean Environment Co	C-8 Cycle Strip	100	0.00	☑	
Rochester Midland Corporation	EnviroCare Floor Stripper	100	0.00	☑	
Spartan Chemical Company	Green Solutions Floor Stripper	100	0.00	☑	
AGA Chemical	AK 225	100	0.00	☑	
DuPont	Vertrel XP 10	100	0.00	☑	
Fisher Scientific	Isopropanol a459-4 70% VV (CAS:67-63-0)	100	0.00	☑	
3M	HFE 7100	100	0.00	☑	
Dow Chemical Company	OS 30	100	0.00	☑	
DuPont	Vertrel MCA	100	0.00	☑	
Enviro Tech International Inc	Ensolv	100	0.00	☑	

Conclusion: All products showed some promise. Ultrasonics did no better overall on the resin pieces then immersion. Six will be chosen for further, more extensive testing based on performance, EH&S and potential costs to the customer.