CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 05/28/1998

Experimenters: Jason Marshall

ClientType: Vessel Cleaning Company

ProjectNumber: Project #2

Substrates: Liquid

PartType: Part

Contaminants: Carbon Deposits, Mold Releases

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual

Purpose: To find a substitute for methyl chloride

Experimental Procedure: Ten chemistries were selected for testing based on the following: compatible with Aluminum and Stainless Steel, able to remove carbon deposits, able to be used in high pressure or immersion cleaning. Past laboratory experiments with similar conditions were examined to aid in selecting possible cleaning chemistries.
Twenty-five milliliters of each cleaner were poured into a 30 mL beaker. A 0.5 gram of the contaminant was weighed and placed into each beaker. Each cleaner was stirred for 30 seconds with a glass rod. Observations were recorded. The stirring and observation cycle was repeated.
The chemistries were then allowed to sit for 3 hours and then overnight. Stirring and observations took place after each interval.
SUBSTRATE MATERIAL: N/A
CONTAMINANTS: Carbon Black/ethyl acetate/silica mixture

Results: Table 1 lists the observations after each stirring.

Table 1 Observations of Cleaning Chemistries

Chemistry	Weight Added (g)	30 Seconds Observation	60 Seconds Observation	3HR Observation	24HR Observation
1	0.5007	No mixing	Same	Same	Same
2	0.5007	Some mixing	Same	Same	Same
3	0.5014	Some mixing	Same	Same	Same
4	0.5005	Blue/grey cloudy	Black	Same	Blue/grey settling out
5	0.5009	Some mixing	Same	Same	Same
6	0.4998	Little mixing	Same	Same	Same
7	0.5003	No mixing	Same	Same	Same
8	0.5008	No mixing	Same	Same	Same
9	0.5003	Some Mixing	Same	Same	Same
10	0.4998	Mixing	Lots of mixing	Black	Same

Two of the chemistries proved to be effective in cleaning the contaminate. The number 4 and 10 cleaners showed immediate signs of dissolving the carbon black mixture after the first stirring. The number 4 cleaner appeared to dissolve more of the contaminant then the number 10 did. Both improved after the second mixing, again 4 more so than 10. After the third mixing both were about the same. After the final mixing, most of the contaminant was dissolved into solution for number 10. The carbon black started to settle out of cleaner number 4.

Summary:

Substrates:	Liquid				
Contaminants:	Carbon Deposits, Mold Releases				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Simple Green	Concentrated Industrial Strength Cleaner and Degreaser	100	1.00	☐	

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By Pas and Star Products	Star Cleaning Miracle # 50	100	2.00	☐	
Chrisal USA Inc	Super CMF 240	100	3.00	☐	
Buckeye International	Shopmaster	100	4.00	☑	
Magnaflux	Daraclean 232	100	5.00	☐	
Delta Omega Technologies Ltd	DOT 111/113	100	6.00	☐	
Turco Products Inc	Turco 5948 DPM	100	7.00	☐	
Emkay Chemical Company	Safety Wash CRC	100	9.00	☐	
Safe CleanUp Solutions	Super Neutral	100	10.00	☑	

Conclusion: Two cleaners, 4-Buckeye Shopmaster and 10-Safe Cleanup Super Neutral, were effective in dissolving the carbon black mixture. MSDSs and Technical data sheets for both have been included with this report. The next test will be to find chemistries which can clean the supplied adhesive. The initial testing will be the same as this experiment.