CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 12/09/2007

Experimenters: Heidi Wilcox

ClientType: Wire & Cable Mfr

ProjectNumber: Project #1

Substrates: Steel

PartType: Part

Contaminants: Paints, Resins/Rosins

Cleaning Methods: Ultrasonics

Analytical Methods: Tactile, Visual

Purpose: To screen potential cleaning products for removing paint/resin from steel parts

Experimental Procedure: The two products from the previous trial are being further testing on client supplied parts using heated ultrasonics. Circular steel parts approximately 6 inches in diameter with resin on them were immersed in the two solutions of 100% concentration at 120 F and cleaned with 40 kHz ultrasonics using Branson 1510 & 2510 units. The parts were allowed to clean with the ultrasonics at 60 minute intervals to determine what effect the cleaning products would have on the resin. Observations were made at 60, 120, 180 and 240 minute intervals. Any signs of interaction between paint/resin and cleaner were recorded.

Results: Parts were cleaners using heated ultrasonics to determine if the added mechanical energy would significantly decrease. The overall cleaning time. Overall the process was the same, but the cleaning time seemed to be cut in half using ultrasonics and heat compared to room temperature immersion. Again, bath life due to the dissolving resin will be the issue.

Product	Initial Appearance and observations
EnviroCare Floor	Clear
Stripper	
60 min	Solution was dark brown almost black after 1st hr. Resin seemed to be softening very quickly and parts were peeling off already.
120 min	Solution black. Thinner areas of resin, 1/8 inch are now almost clean to metal.
180 min	Same
240 min	Thicker areas of resin softening and are able to be peeled, scraped and wiped off. If watched every half hour instead of hour may remover even more
Green Solutions	Clear, fizzed and saw streaks of color
60 min	Soln black. Resin softening quickly.
120 min	Areas with thin resin were almost clean to metal.
180 min	Same
240 min	Thinner areas clean, thicker resin softening and can be wiped, scraped a and peeled.

Summary:

Substrates:	Steel
Contaminants:	Paints, Resins/Rosins

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Rochester Midland Corporation	EnviroCare Floor Stripper	100	0.00	☑	
Spartan Chemical Company	Green Solutions Floor Stripper	100	0.00	☑	

Conclusion:

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Both the Rochester Midland and Spartan products worked. The cleaners soften the resin on the top which allows it to be wiped or scraped off in incremental layers. Using the heated ultrasonics seemed to reduce cleaning time approximately 50%. The resin dissolved in the solutions so the bath life may be decreased over time. Thinner areas of resin were able to be clean to the metal in approximately 2 hrs.

Recommendations would be to pull parts out and check coating. Parts should then be wiped every half hour with the added heat and energy in order to expedite the process by to removing thicker layers of the resin/paint. Next steps will be to supply the company with samples of the products and let them test them to see which they prefer and what arrangements they came make for routine cleaning that will work for them.