

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005  
 DateRun: 03/14/2005  
 Experimenters: Jason Marshall, Heidi Wilcox  
 ClientType: Wire & Cable Mfr  
 ProjectNumber: Project #1  
 Substrates: Aluminum  
 PartType: Coupon  
 Contaminants: Mold Releases, Resins/Rosins  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Visual  
 Purpose: To identify alternatives for first process with mold release agents and resin  
 Experimental Procedure: Ten cleaners were selected from the laboratories database of testing. One additional product were selected based on client input. Seven products were diluted to 5% by volume in 600 ml glass beakers using DI water. The remaining four products were used at full strength. Products were used at room temperature. Thirty-three preweighed coupons were first coated with Valspar MR 225 mold release (100-41-4, 1330-20-7, 8052-41-3, 67-63-0, 108-88-3, 110-82-7, 64742-89-8), followed by a second coating with Valspar MR 225 Aerosol (75-28-5, 74-98-6, 100-41-4, 75-09-2). Finally, the coupons were coated with ITW Philadelphia Resins Chockfast Orange Resin (25068-38-6). The coupons were placed into a convection oven at 150 F and allowed to cure overnight. After the coupons were cooled to room temperature, a second set of weights were recorded to determine the amount of contaminants were added. Three coupons were cleaned in each product for five minutes using stir-bar agitation. After cleaning the coupons were removed and dried using compressed air at room temperature. Final weights were to be recorded after coupons were dry. Observations were made and recorded.

Results: After running the trial for the aqueous based products, it was observed that surface of the resin/mold release agents were not affected. The semi-aqueous products had more success in removing the resin from the coupons. Final weights were not recorded after visual inspection of the aqueous cleaned coupons. The semi-aqueous products were found to be effective when the coupons were wiped with a paper towel after the soaking.

| Manufacturer          | Products                    | Observations              |
|-----------------------|-----------------------------|---------------------------|
| Bruhin Corp           | Aquavantage 1400            | No change                 |
| Buckeye International | Shopmaster LpH              | No change                 |
| Mangaflux             | Daraclean 282               | No change                 |
| Today & Beyond        | Beyond 2006                 | No change                 |
| Gemtek Products       | SC Aircraft-Metal           | No change                 |
| Innovative Organics   | Amberclean L12              | No change                 |
| Crest Ultrasonics     | Crest 211 (client supplied) | No change                 |
| SoySolv Industrial    | SoySolv II                  | Some removal after wiping |
| Kyzen Corp            | Ionox HC2                   | More removal              |
| Bio Chem Systems      | Bio T Max                   | Some removal              |
| Florida Chemical      | Citrus Burst 7              | Tacky with some removal   |

When the coupons were allowed to soak in the semi-aqueous products overnight, the resin peeled off the aluminum coupons in a single sheet.

Summary:

|                      |                              |               |                    |                   |                      |
|----------------------|------------------------------|---------------|--------------------|-------------------|----------------------|
| <b>Substrates:</b>   | Aluminum                     |               |                    |                   |                      |
| <b>Contaminants:</b> | Mold Releases, Resins/Rosins |               |                    |                   |                      |
| <b>Company Name:</b> | <b>Product Name:</b>         | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b> | <b>Observations:</b> |

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|                             |   |     |      |                                     |  |
|-----------------------------|---|-----|------|-------------------------------------|--|
| Brulin Corporation          | Aquavantage 1400                              | 5   | 0.00 | <input type="checkbox"/>            |  |
| Buckeye International       | Shopmaster LPH                                | 5   | 0.00 | <input type="checkbox"/>            |  |
| Magnaflux                   | Daraclean 282                                 | 5   | 0.00 | <input type="checkbox"/>            |  |
| Today & Beyond              | Beyond 2006                                   | 5   | 0.00 | <input type="checkbox"/>            |  |
| Gemtek Products             | SC Aircraft & Metal Cleaner Super Concentrate | 5   | 0.00 | <input type="checkbox"/>            |  |
| Innovative Organics Inc     | Amberclean L 12                               | 5   | 0.00 | <input type="checkbox"/>            |  |
| Soysolv Industrial Products | Soysolv II solvent                            | 100 | 0.00 | <input checked="" type="checkbox"/> |  |
| Kyzen Corporation           | Ionox HC 2                                    | 100 | 0.00 | <input checked="" type="checkbox"/> |  |
| Bio Chem Systems            | Bio T Max                                     | 100 | 0.00 | <input checked="" type="checkbox"/> |  |
| Florida Chemical Company    | Citrus Burst 7                                | 100 | 0.00 | <input checked="" type="checkbox"/> |  |

**Conclusion:**

The testing will be repeated for the aqueous products but no resin will be applied to the mold release agent on the coupons.