# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 09/29/1999

Experimenters: Jason Marshall, Nicole Vayo

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum, Copper, Nickel, Stainless Steel

PartType: Coupon

Contaminants: Adhesive, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate client supplied cleaning solution on all listed contaminants and substrates.

Experimental Procedure: The cleaning solution was diluted to 5% using DI water in a 600 mL beaker. The solution was used at room temperature. Coupons were cleaned for five minutes. Rinsing was performed for two minutes using tap water at 120 F and air dried for about two hours also at room temperature. After drying was complete, final weights were recorded and efficiencies were calculated.

SUBSTRATE MATERIAL: 1-Nickel/Copper (202-715); 2-Stainless Steel (202-410 B-85); 3-Aluminum (202-2024 T-3); 4-Ceramic; 5-Steel (202-1010 B-79)
CONTAMINANTS: Table 1 lists the contaminants and the related CAS#s for this trial.
Table 1. Contaminants Cleaned

Contaminant CAS #
Oil 64741-89-5
Lubricant 64742-47-8, 9003-29-6
Ink 67-63-0, 108-88-3, 9004-70-0, 141-78-6, 64-17-5, 109-60-4
Grease 64742-47-8
Adhesive 9010-98-4, 65997-13-9, 68083-03-4, 67-56-1, 1314-13-2, 119-47-1, 108-88-3, 8052-10-6

Results: BioSolve was successful in removing the oil, lubricant, and grease from the coupons' surfaces. The cleaner was not very successful in removing ink. Most of the adhesive was cleaned from the surface. Some foaming
was observed during the make up procedure of the solutions. Table 2 lists the percent removal for each contaminant.

Table 2. Cleaning Efficiencies

| Contaminant | BioSolve |
|---|---|
| Oil | 100 |
| Lubricant | 99 |
| Ink | 1 |
| Grease | 94 |
| Adhesive | 77 |

Summary:

| **Substrates:** | Aluminum, Copper, Nickel, Stainless Steel |
|---|---|
| **Contaminants:** | Adhesive, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil |

| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
|---|---|---|---|---|---|
| Westford Chemical Corporation | Biosolve | 5 | 100.00 | ☑ | oil |
| Westford Chemical Corporation | Biosolve | 5 | 99.00 | ☑ | lubricant |
| Westford Chemical Corporation | Biosolve | 5 | 1.00 | ☐ | ink |
| Westford Chemical Corporation | Biosolve | 5 | 94.00 | ☑ | grease |
| Westford Chemical Corporation | Biosolve | 5 | 77.00 | ☐ | adhesive |

Conclusion: The cleaner evaluated had success in removing the contaminants recommended by the manufacturer. Higher temperatures and more agitation could improve the results overall and especially for removing the adhesive. The dried ink has been consistently hard to remove in other trials. A different ink may be easier to remove.