

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 12/13/2005

Experimenters: Jason Marshall

ClientType: Church

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods:

Analytical Methods:

Purpose: To generate a list of alternatives to TCE for aircraft and automotive part cleaning.

Experimental Procedure: Using the laboratory's database for solvent cleaning substitution, the lab generated a list of products that have been used to replace TCE in various cleaning applications.

Results: The Table contains products that have tested successfully for TCE replacement. In addition, testing information for Client Number 28 (Aircraft Parts Manufacturer) was provided.

| Company                   | Product            |
|---------------------------|--------------------|
| 3M                        | HFE 71 De          |
| 3M                        | HFE 7100           |
| 3M                        | HFE 7200           |
| AG Environmental Products | Canola Gold CE110  |
| AGA Chemical              | AK 225             |
| Alconox Inc               | Alcojet            |
| Amax Corporation          | Safety First       |
| Ardrox Inc                | 6333               |
| AW Chesterton             | 278 Super Solv     |
| AW Chesterton             | KPC 820 N          |
| Bio Chem Systems          | Bio T 200 A        |
| Bio Chem Systems          | Bio T 300 B        |
| Bio Chem Systems          | Bio T Max          |
| Bio Chem Systems          | Green Stuff (6325) |
| Brulin Corporation        | Aquavantage 1400   |
| Brulin Corporation        | Compliance         |
| Brulin Corporation        | Formula 815 GD     |
| Calgon Corporation        | Geo Guard 2215     |
| Calgon Corporation        | Geo Guard 3015     |
| Chrisal USA Inc           | Super CMF 240      |
| Church & Dwight Co Inc    | Armaklean E 2002   |
| Cleaning Systems          | Release            |
| Crest Ultrasonics         | Crest 14           |
| Dow Chemical Company      | OS 10              |
| Dow Chemical Company      | OS 20              |
| Dow Chemical Company      | OS 30              |
| DuPont                    | DBE 5              |
| DuPont                    | Vertrel CCA        |
| DuPont                    | Vertrel MCA        |
| Dynamold Solvents Inc     | DS 104             |
| Dynamold Solvents Inc     | DS 108             |
| Ecolink                   | Vortex             |

## CLEANING LABORATORY EVALUATION SUMMARY

|                             |                             |
|-----------------------------|-----------------------------|
| Emkay Chemical Company      | Safety Wash CRC             |
| Enviro Tech International   | Ensolv                      |
| Enviro Tech International   | Ensolv A                    |
| Fine Organic Corporation    | FO 2085 M                   |
| Florida Chemical Company    | Citrus Burst 7              |
| Gemtek Products             | Maxi Solv                   |
| Gemtek Products             | SC Aircraft & Metal Cleaner |
| Hubbard Hall Inc            | Ultrasoak 127               |
| Innovative Organics Inc     | Amberclean L 12             |
| International Products Corp | Micro 90                    |
| International Products Corp | Surface Cleanse 930         |
| Kyzen Corporation           | Ionox HC 2                  |
| Kyzen Corporation           | Metalnox M6314              |
| Kyzen Corporation           | Metalnox M6960              |
| Lifetime Solutins Ltd       | Commercial All Purpose      |
| LPS Laboratories            | LPS Precision Clean         |
| MacDermid Industrial        | ND 17                       |
| Magnaflux                   | Daraclean 232               |
| Magnaflux                   | Daraclean 282               |
| Magnaflux                   | Daraclean 282 GF            |
| Magnaflux                   | Daraclean 283               |
| Magnaflux                   | Daraguard 416               |
| Matchless Metal Polish Co   | MC 132                      |
| Metabolix Inc               | Metabolix E3HB              |
| Micro Care                  | Flux Remover C              |
| Micro Care                  | Heavy Duty Degreaser C      |
| National Diagnostic         | Opti Clear                  |
| Oakite Products             | Inproclean 2000             |
| Oakite Products             | Inproclean 3800             |
| Oakite Products             | Inproclean 4000 T           |
| PCI of America              | Hurrisafe 9450              |
| Pentone Corporation         | Citrikleen XPC              |
| Petroferm Inc               | Lenium ES                   |
| Petroferm Inc               | Lenium GS                   |
| Poly Systems USA Inc        | Solvon IP                   |
| Poly Systems USA Inc        | Solvon PB                   |
| Sky Products Company Inc    | Cleaner #10                 |
| Solvent Kleene Inc          | D Greeze 1000               |
| Solvent Kleene Inc          | D Greeze 500 LO             |
| Soysolv Industrial Products | Soysolv II                  |
| Texo Corporation            | Texolite 1734 XL            |
| Today & Beyond              | Beyond 2001                 |
| Today & Beyond              | Beyond 2003                 |
| Today & Beyond              | Beyond 2008                 |
| Twin Rivers Technologies    | Methyl Ester 1618           |
| US Polychem Corporation     | Polychem DEOX 007           |

## CLEANING LABORATORY EVALUATION SUMMARY

|                         |                      |
|-------------------------|----------------------|
| US Polychem Corporation | Polyspray Jet 790 P  |
| US Polychem Corporation | Polyspray Jet 790 XS |
| Warren Chemical Company | Sea Wash 8 New       |

Summary:

Conclusion:

Cleaning varies from case to case. The SSL recommends process specific testing on potential replacement cleaning chemicals. If more information is needed on a particular product, or you are interested in conducting cleaning trials, please contact the lab at (978)934-3133.