

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2000

DateRun: 07/06/2000

Experimenters: Jason Marshall

ClientType: Electrical Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Inks, Paints

Cleaning Methods:

Analytical Methods:

Purpose: Information request

Experimental Procedure: SUBSTRATE MATERIAL: Stainless steel coating equipment  
REQUEST: Looking for a list potential replacement cleaners for methylene chloride. Would like to be able to distill or recycle cleaning solution reducing the disposal costs.

Results: Using the laboratories database of effective testing, a list of products that have proven to remove paint/ink was generated and are listed in Table 1. Table 2 was generated from vendor supplied information.

Table 1. General Test Results

| SCL #       | Substrate | Cont  | Process     | Manufacturer     | Product           | Classification      |
|-------------|-----------|-------|-------------|------------------|-------------------|---------------------|
| 97-538-02-2 | SS        | INK   | MANUAL      | T-SQUARE         | HTF 60            | S-A Terpene         |
| 97-538-02-2 | SS        | INK   | MANUAL      | T-SQUARE         | HTF 50            | S-A Terpene         |
| 98-559-01-1 | AL-OXIDE  | INK   | IMMERSION   | US POLYCHEM      | DE-OX 007         | Alkaline            |
| 98-559-01-1 | AL-OXIDE  | PAINT | IMMERSION   | US POLYCHEM      | DE-OX 007         | Alkaline            |
| 98-559-01-1 | AL-OXIDE  | INK   | IMMERSION   | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 98-559-01-1 | AL-OXIDE  | PAINT | IMMERSION   | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 98-559-03-2 | AL-OXIDE  | INK   | ULTRASONICS | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 98-559-03-2 | AL-OXIDE  | PAINT | ULTRASONICS | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 96-423-02-2 | PLASTIC   | INK   | IMMERSION   | MACDERMID        | ND 17             | Alkaline            |
| 96-423-02-2 | PLASTIC   | INK   | IMMERSION   | MIRACHEM         | MIRACHEM 500      | Alkaline            |
| 98-559-04-2 | PLASTIC   | INK   | IMMERSION   | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 98-559-04-2 | PLASTIC   | PAINT | IMMERSION   | Oakite Products  | INPROCLEAN 3800   | Alkaline            |
| 98-559-04-2 | PLASTIC   | INK   | IMMERSION   | CHRISAL USA      | SUPER CMF 240     | Alkaline            |
| 98-559-04-2 | PLASTIC   | PAINT | IMMERSION   | CHRISAL USA      | SUPER CMF 240     | Alkaline            |
| 98-559-05-2 | ZrO2      | PAINT | IMMERSION   | Oakite Products  | INPROCLEAN 4000 T | S-A Terpene         |
| 98-571-02-2 | AL        | INK   | MANUAL      | AG ENVIRONMENTAL | SOY GOLD 1000     | Soy Methyl Ester    |
| 98-571-02-2 | AL        | INK   | MANUAL      | Oakite Products  | INPROCLEAN 4000 T | S-A Terpene         |
| 98-571-02-2 | AL        | INK   | MANUAL      | BUCKEYE          | SHOPMASTER        | Alkaline            |
| 98-571-03-2 | AL        | INK   | MANUAL      | T-SQUARE         | HTF 50            | S-A Terpene         |
| 98-571-03-2 | AL        | INK   | MANUAL      | Oakite Products  | INPROCLEAN 4000 T | S-A Terpene         |
| 98-676-01-2 | AL        | PAINT | IMMERSION   | SOLVENT KLEENE   | D-GREEZE 500      | Hydrocarbon Solvent |
| 98-676-01-2 | AL        | PAINT | IMMERSION   | SOLVENT KLEENE   | D-GREEZE 500      | Hydrocarbon Solvent |

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|              |         |       |           |                       |                       |                  |
|--------------|---------|-------|-----------|-----------------------|-----------------------|------------------|
| 98-676-02-4  | AL      | PAINT | IMMERSION | CHRISAL USA           | SUPER CMF 240         | Alkaline         |
| 98-676-02-4  | AL      | PAINT | IMMERSION | AG ENVIRONMENTAL      | SOY GOLD 1000         | Soy Methyl Ester |
| 98-676-07-2  | AL      | PAINT | IMMERSION | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 98-682-01-2  | SS      | INK   | MANUAL    | EXXON                 | AROMATIC 100          | SOLVENT          |
| 98-682-01-2  | SS      | INK   | MANUAL    | AG ENVIRONMENTAL      | SOY GOLD 1000         | Soy Methyl Ester |
| 98-682-01-2  | SS      | INK   | MANUAL    | ENVIROSOLUTIONS       | BIO-T MAX             | S-A Terpene      |
| 98-682-01-2  | SS      | INK   | MANUAL    | FINGER LAKES          | 1/1/02                | Terpene          |
| 98-682-01-2  | SS      | INK   | MANUAL    | INLAND TECHNOLOGIES   | EP 921                | Terpene          |
| 98-682-01-2  | SS      | INK   | MANUAL    | T-SQUARE              | HTF 60                | S-A Terpene      |
| 98-676-08-2  | AL      | PAINT | SPRAY     | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 98-676-08-2  | AL      | PAINT | SPRAY     | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 98-676-10-4  | AL      | PAINT | IMMERSION | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 98-676-10-4  | AL      | PAINT | IMMERSION | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 98-682-03-4  | SS      | INK   | MANUAL    | ENVIROSOLUTIONS       | BIO-T MAX             | S-A Terpene      |
| 98-676-09-4  | AL      | PAINT | SPRAY     | AG ENVIRONMENTAL      | SOY GOLD 2000         | Soy Methyl Ester |
| 00-7123-01-2 | PLASTIC | INK   | IMMERSION | Envirosolutions, Inc. | BIO T MAX             | S-A              |
| 00-7123-01-2 | PLASTIC | INK   | IMMERSION | Oakite Products       | Inproclean 4000 T     | S-A Terpene      |
| 00-7123-01-2 | PLASTIC | INK   | IMMERSION | Valtech Corporation   | Valtron SP 2250-2LF   | Alkaline         |
| 00-7123-07-4 | SS      | INK   | IMMERSION | SWR CORP              | SWR ONE               | Alkaline         |
| 00-7123-08-4 | SS      | INK   | WIPE      | Oakite Products       | Inproclean 4000 T S-A | Terpene          |
| 00-7123-08-4 | SS      | INK   | WIPE      | Envirosolutions, Inc. | BIO T MAX             | S-A              |
| 00-7123-07-4 | SS      | INK   | WIPE      | SWR CORP              | SWR ONE               | Alkaline         |

Table 2. Vendor Suggested Products for Paint/Ink Cleaning

| Company Name            | Product Name                                 |
|-------------------------|--|
| AW Chesterton           | 278 Super Solv                               |
| Buckeye International   | Shopmaster                                   |
| Buckeye International   | Shopmaster LPH                               |
| Dynamold Solvents, Inc. | DS-801                                       |
| Envirosolutions, Inc.   | SOLSAFE 245                                  |
| Gemtek Products         | SC Supersolve                                |
| Hazwell International   | Biosolve                                     |
| Hotsy Cleaning Systems  | Hotsy Detergents Tub & Pressure Wash         |
| New Pig Corporation     | New Pig Degreaser                            |
| Oakite Products         | Inproclean 4000 T                            |
| Purac America, Inc.     | Purasolv Els                                 |
| Safe Science            | Safe Science Concrete/ Graffiti (Industrial) |
| Safe Science            | Safe Science Engine Degreaser (Industrial)   |
| Savogran                | HD-34 Cleaner Degreaser                      |

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|                      |                            |
|----------------------|----------------------------|
| Savogran             | Safety-Solve               |
| Savogran             | SI #3 Coating Remover      |
| Soy Environmental    | Soy Clean                  |
| Tarksol, Inc.        | Tarksol NPB                |
| Today & Beyond       | Beyond-2001                |
| Today & Beyond       | Beyond-2002                |
| Today & Beyond       | Beyond-2003                |
| Today & Beyond       | Beyond-2004                |
| Today & Beyond       | Beyond-2005                |
| Today & Beyond       | Beyond-2006                |
| Today & Beyond       | Beyond-2008                |
| U.S. Polychem Corp.  | Hydropurge 36              |
| U.S. Polychem Corp.  | Polychem 2000 P            |
| U.S. Polychem Corp.  | Polychem A 2000 XS         |
| U.S. Polychem Corp.  | Polychem Acra Strip 600    |
| U.S. Polychem Corp.  | Polychem DE-144            |
| U.S. Polychem Corp.  | Polychem DEOX - 007        |
| U.S. Polychem Corp.  | Polychem Hydropurge 21     |
| U.S. Polychem Corp.  | Polychem Hydropurge 36 XS  |
| U.S. Polychem Corp.  | Polychem Hydropurge XS-790 |
| U.S. Polychem Corp.  | Polychem QS-85 LO          |
| U.S. Polychem Corp.  | Polychem RCC-25            |
| U.S. Polychem Corp.  | Polyspray Jet 790 C        |
| U.S. Polychem Corp.  | Polyspray Jet 790 P        |
| U.S. Polychem Corp.  | Polyspray Jet 790 XS       |
| U.S. Polychem Corp.  | Polyspray Jet ST-21        |
| Warren Chemical Co   | Sea-Wash Cleaner           |
| Westford Chemical Co | Biosolve                   |

The following Table lists 6 suggested products to be evaluated.

Table 3. Suggested Replacements

| Company Name          | Product Name            |
|-----------------------|-------------------------|
| Envirosolutions, Inc. | Bio T Max               |
| Oakite Products       | Inproclean 3800         |
| Oakite Products       | Inproclean 4000 T       |
| Savogran              | HD-34 Cleaner Degreaser |
| Solvent Kleene, Inc.  | D-Greeze 500 LO         |
| U.S. Polychem Corp.   | Polyspray Jet 790 P     |

Summary:

Conclusion:

Cleaning projects vary from case-to-case. To obtain more detailed information about any of the listed trials, have the SCL # ready when contacting the lab at (978)934-3133.