

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 08/26/2002

Experimenters: Jason Marshall

ClientType: Lab

ProjectNumber: Project #1

Substrates: Electronics

PartType: Coupon

Contaminants: Fluxes, Solder, Films

Cleaning Methods:

Analytical Methods:

Purpose: To find a new process that will not leave white film behind

Experimental Procedure: Using SSL's database of test results, several products were found that have been used successfully to remove flux and solder. The are listed below.

Results: Table 1. Flux Trials

| CompanyName | ProductName | Classification | Total | Number of Trials: Contaminant Cleaned | Number of Trials: Contaminant Cleaned | Number of Trials: Contaminant Cleaned |
|-----------------------|-----------------------|----------------------|-------|--|---|---|
| Alconox, Inc. | Detergent 8 | Alkaline Aqueous | 5 | 5: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | | |
| Bio Chem Systems | Bio T Max | Terpene-Semi-Aqueous | 4 | 2: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | 2: Flux - Wave Flux, RMA Flux (7440-31-5, 7439-92-1, 7740-69-9, 6597-06-0, 6852-86-3, 98-55-5, 8009-03-8) | |
| Bio Chem Systems | Bio T Parts Washer NR | Terpene | 6 | 6: Flux | | |
| Bio Chem Systems | Green Stuff (6325) | Alkaline Aqueous | 6 | 6: Flux | | |
| Buckeye International | Shopmaster RC | Ester | 8 | 4: Flux | 4: Flux (67-63-0, 67-56-1, 8050-09-7) | |
| Calgon Corporation | Geo Guard 2215 | Alkaline Aqueous | 1 | 1: Flux - Rosin Solder Flux | | |
| Church & Dwight | Armaklean E 2001 | Alkaline Aqueous | 2 | 2: Flux | | |
| Church & Dwight | Armaklean E 2002 | Alkaline Aqueous | 6 | 4: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | 2: Flux - RMA flux | |

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|-----------------------------|-------------------------|----------------------|----|---|---------------------------------------|--|
| Dynamold Solvents, Inc. | DS-104 | Petroleum Distillate | 10 | 5: Flux | 5: Flux (67-63-0, 67-56-1, 8050-09-7) | |
| Dynamold Solvents, Inc. | DS-108 | Petroleum Distillate | 10 | 5: Flux | 5: Flux (67-63-0, 67-56-1, 8050-09-7) | |
| EMKAY Chemical Co | Safety Wash CRC | Alkaline Aqueous | 3 | 3: Flux | | |
| International Products Corp | LF 2100 | Alkaline Aqueous | 5 | 5: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | | |
| Kyzen Corporation | Ionox HC 2 | Alcohol | 3 | 3: Flux - Wave Flux, RMA Flux (7440-31-5, 7439-92-1, 7740-69-9, 6597-06-0, 6852-86-3, 98-55-5, 8009-03-8) | | |
| Magnum Research | Aluminum Aerowash | Alkaline Aqueous | 3 | 3: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | | |
| Oakite Products | Inproclean 4000 T | Terpene-Organic | 3 | 3: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | | |
| Safe Science | Engine Degreaser | Terpene | 11 | 3: Flux | 8: Flux - RMA Alpha | |
| Savogran | Dirtex Prepaint Cleaner | Alkaline Aqueous | 1 | 1: Flux | | |
| Solvent Kleene, Inc. | D-Greeze 1000 | Petroleum Distillate | 8 | 4: Flux | 4: Flux (67-63-0, 67-56-1, 8050-09-7) | |
| SWR Corp | SWR One | Alkaline Aqueous | 3 | 3: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | | |
| Today & Beyond | Beyond-2001 | Alkaline Aqueous | 20 | 14: Flux | 6: Flux - Ersin 5381 RMA Flux | |
| Today & Beyond | Beyond-2002 | Alkaline Aqueous | 18 | 12: Flux | 6: Flux - Ersin 5381 RMA Flux | |
| Today & Beyond | Beyond-2003 | Alkaline Aqueous | 12 | 12: Flux | | |

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|---------------------|--------------------|------------------|----|----------|-------------------------------|---------------------------------------|
| Today & Beyond | Beyond-2004 | Alkaline Aqueous | 18 | 12: Flux | 6: Flux - Ersin 5381 RMA Flux | |
| Today & Beyond | Beyond-2005 | Alkaline Aqueous | 18 | 6: Flux | 6: Flux - Ersin 5381 RMA Flux | 6: Flux (67-63-0, 67-56-1, 8050-09-7) |
| Today & Beyond | Beyond-2009 | Organic | 3 | 1: Flux | 1: Flux - Ersin 5381 RMA Flux | 1: Flux (67-63-0, 67-56-1, 8050-09-7) |
| U.S. Polychem Corp. | Hydropurge HPL 790 | Caustic | 1 | 1: Flux | | |

Table 2. Solder Trials

| CompanyName | ProductName | Classification | Total | Number of Trials: Contaminant Cleaned | Number of Trials: Contaminant Cleaned |
|-------------------------|------------------|----------------------|-------|--|---|
| Bio Chem Systems | Bio T Max | Terpene-Semi-Aqueous | 4 | 2: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | 2: Solder |
| Bio Chem Systems | SOLSAFE 245 | Petroleum Distillate | 1 | 1: Solder - Emerson & Cuming Eccobons Solder 59C (7440-22-4, 108-88-3, Silicone Resin) | |
| Calgon Corporation | Geo Guard 2215 | Alkaline Aqueous | 1 | 1: Flux - Rosin Solder Flux | |
| Church & Dwight | Armaklean E 2002 | Alkaline Aqueous | 4 | 4: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | |
| Dynamold Solvents, Inc. | DS-104 | Petroleum Distillate | 1 | 1: Solder - Emerson & Cuming Eccobons Solder 59C (7440-22-4, 108-88-3, Silicone Resin) | |
| Dynamold Solvents, Inc. | DS-108 | Petroleum Distillate | 1 | 1: Solder - Emerson & Cuming Eccobons Solder 59C (7440-22-4, 108-88-3, Silicone Resin) | |

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|-----------------|-------------------|------------------|---|--|-----------|
| Oakite Products | Inproclean 4000 T | Terpene-Organic | 3 | 3: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | |
| SWR Corp | SWR One | Alkaline Aqueous | 6 | 3: Flux - Kester Solder 1544 Rosin Solder flux (64-17-5, 78-92-2, 8050-09-7) | 3: Solder |

Summary:

| | | | | | |
|----------------------|----------------------------|---------------|--------------------|--------------------------|----------------------|
| Substrates: | Electronics | | | | |
| Contaminants: | Fluxes, Solder, Films | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| No Specific Vendor | Supplied alternatives list | | | <input type="checkbox"/> | |

Conclusion:

Cleaning projects vary from case-to-case. To obtain more detailed information about any of the products listed, contact the lab at (978)934-3133.