

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2011

DateRun: 07/28/2011

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ClientType: Microelectronics Mfr

ProjectNumber: Project #2

Substrates: Electronics

PartType: Coupon

Contaminants: Solder

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To evaluate cleaners for their effectiveness in removing lead and lead free solder on electronic parts with low odor.

Experimental Procedure: Six cleaning products were chosen from the labs database, [www.cleansolutions.org](http://www.cleansolutions.org) to be used in the trial. Six parts were chosen from those supplied by the client to be cleaned by room temperature ultrasonics. Each part was cleaned in the smallest Branson unit that could handle each part. The parts were cleaned for 10 minutes and then rinses in tap water at the sink and dried by compressed air blow off. Both rinse and drying were done for approximately 30 seconds. The parts were then bagged for transport back to the client.

Results: Parts will be sent back to the client to determine which cleaners worked if any.

| Mfr              | Product       | Observations  |
|------------------|---------------|---|
| MAS Products     | Bio Solv      | Solder joints have corroded, dull look, no odor             |
| Buckeye Int      | Shopmaster RC | Residue on board, joints look better. No odor               |
| Gentek           | SC Soyester   | Nasty residual odor, lots of flux left                      |
| AG Environ. Prod | Soygold 2000  | Nasty odor. Residue on board, not fully cleaned             |
| Bio Chem Systems | Solsafe 245   | Better, one component on board not clean. Joints lost shine |
| Gemtek           | EZ Solv       | Not too bad. Joints lost some shine                         |

Summary:

| <b>Substrates:</b>        | Electronics               |        |             |                                     |                       |
|---------------------------|---------------------------|--------|-------------|-------------------------------------|-----------------------|
| <b>Contaminants:</b>      | Solder                    |        |             |                                     |                       |
| Company Name:             | Product Name:             | Conc.: | Efficiency: | Effective:                          | Observations:         |
| Phoenix Resins Inc        | BioSolv                   | 100    |             | <input type="checkbox"/>            |                       |
| Buckeye International     | Shopmaster RC             | 5      |             | <input checked="" type="checkbox"/> | better rinsing needed |
| Gemtek Products           | SC Soyester               | 100    |             | <input type="checkbox"/>            |                       |
| AG Environmental Products | Soy Gold 2000             | 100    |             | <input type="checkbox"/>            |                       |
| Bio Chem Systems          | Solsafe 245               | 100    |             | <input checked="" type="checkbox"/> |                       |
| Gemtek Products           | SC EZ Solv Safety Solvent | 100    |             | <input checked="" type="checkbox"/> |                       |

Conclusion: Parts are being sent back for the client to check for cleanliness in their facility. They will notify the lab which products cleaned then we will screen the cleaners that were effective for performance for odor and test those cleaners at the facility to see how the worker effected by the cleaner smell feels.