

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 01/30/2014

Experimenters: Loc Nguyen, Francisco Abreau

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Glass/Quartz, Chrome

PartType: Coupon

Contaminants: Films, Soaps

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate supplied products for glass cleaning using manual cleaning

Experimental Procedure: Prewedged glass, mirror, and chrome coupons were coated with SSL #2 and Glass Soil using a hand held swab and were allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added and were subjected to a visual Streak/Film Test to see if it removed all of the soil. The visual Streak/Film Test ranked from 1-7; (1 is the best, 7 is the worst).

Results: The compared products had differing overall average removal efficiency. As the results show, the Windex product cleaned the best at an average cleaning efficiency of 91.35%. The Chrisal product trailed behind a little at a cleaning efficiency of 85.26%. As for the Film and streak test, the Windex product fared higher rating levels than the Chrisal product. The Windex product scored an average of 2.66 for Streak and 2.83 for Filming. The Chrisal product scored an average of 2.83 for Streaking and 3.16 for Filming. The product which most efficiently removed the soil was Windex, it also had more satisfactory levels for Filming and Streaking.

| Substrate | Cleaner | Initial wt | Cont. wt | Clean wt | %Removed | Streak | Film |
|-----------|---------|------------|----------|----------|----------|--------|------|
| Glass | Chrisal | 37.8694 | 37.9031 | 37.8739 | 86.65 | 3 | 3 |
| Glass | Chrisal | 37.6031 | 37.6368 | 37.6080 | 85.46 | 2 | 3 |
| Glass | Chrisal | 37.9762 | 38.0038 | 37.9805 | 84.42 | 2 | 3 |
| Mirror | Chrisal | 38.0481 | 38.1004 | 38.0538 | 89.10 | 3 | 3 |
| Mirror | Chrisal | 37.4532 | 37.4746 | 37.4569 | 82.71 | 4 | 3 |
| Mirror | Chrisal | 37.4271 | 37.4443 | 37.4301 | 82.56 | 3 | 5 |
| Chrome | Chrisal | 21.7001 | 21.7153 | 21.7027 | 82.89 | n/a | n/a |
| Chrome | Chrisal | 21.6368 | 21.6996 | 21.6427 | 90.61 | n/a | n/a |
| Chrome | Chrisal | 21.6673 | 21.7030 | 21.6734 | 82.91 | n/a | n/a |
| Glass | Windex | 37.6475 | 37.7040 | 37.6506 | 94.51 | 2 | 2 |
| Glass | Windex | 37.5274 | 37.5578 | 37.5313 | 87.17 | 2 | 2 |
| Glass | Windex | 37.8038 | 37.8222 | 37.8055 | 90.76 | 2 | 4 |
| Mirror | Windex | 37.5615 | 37.5805 | 37.5650 | 81.58 | 4 | 3 |
| Mirror | Windex | 37.1573 | 37.1804 | 37.1593 | 91.34 | 4 | 3 |
| Mirror | Windex | 38.0065 | 38.0366 | 38.0087 | 92.69 | 2 | 3 |
| Chrome | Windex | 22.0848 | 22.0871 | 22.0850 | 91.30 | n/a | n/a |
| Chrome | Windex | 22.0521 | 22.0700 | 22.0528 | 96.09 | n/a | n/a |
| Chrome | Windex | 21.6674 | 21.6946 | 21.6683 | 96.69 | n/a | n/a |

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|----------------------|-------------------------------------|---|--------------------|-------------------------------------|----------------------|--|
| Summary: | | Substrates: Glass/Quartz, Chrome | | | | |
| | | Contaminants: Films, Soaps | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: | |
| Chrisal USA Inc | Super CMF 240 | 1 | 85.26 | <input checked="" type="checkbox"/> | | |
| SC Johnson & Son Inc | Windex Glass & More Cleaner (Spray) | 100 | 91.35 | <input checked="" type="checkbox"/> | | |

Conclusion: