

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009
 DateRun: 06/05/2009
 Experimenters: Jason Marshall, Junhee Cho, Timothy Weil
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #1
 Substrates: Glass/Quartz
 PartType: Coupon
 Contaminants: None
 Cleaning Methods:
 Analytical Methods: Timing
 Purpose: To evaluate aerosol glass/surface cleaners for vertical adhesion to glass surface

Experimental Procedure: A large glass window was cleaned using Green Works Glass Cleaner from Clorox to ensure uniform clean surface. Once dry each of the test aerosol products were sprayed for 1-2 seconds onto the surface. A timer was started to determine the time the cleaner took to travel 1 foot (30 cm). A second observation was made to see how much movement was achieved for the products for a total of 2 minute. At the end of 2 minutes the distance traveled by the product was recorded.

For products that need more than 1 minute to travel the 30 cm, time will be recorded as greater than 2 minutes and receive a score of excellent. For products that run down the entire length of the window (4 feet) in less than the 2 minutes, the distance will be recorded as greater than 4 feet and will receive a score of poor.

| | |
|-----------------|-----------|
| Time rating | |
| 120 | Excellent |
| 60 | Good |
| 30 | Okay |
| 15 | Fair |
| <15 | Poor |
| | |
| Distance rating | |
| <1 | Excellent |
| 1 | Good |
| 2 | Okay |
| 3 | Fair |
| 4 | Poor |

Results: All but one product (Windex), had good to excellent vertical cling as determined by the length of time needed to travel one foot and how far the sprayed product traveled in 2 minutes. The table lists the time and distances for each product.

| Product Class | Product | Time for 1 foot | Rating | Distance in 2 minutes | Rating |
|---------------|-----------------|-----------------|--------|-----------------------|--------|
| Glass | A00122 | 2 min | 1 | 12 | 2 |
| | | > 2 min | 1 | 7 | 1 |
| | | > 2 min | 1 | 4.5 | 1 |
| | Product Average | | 1 | | 1.3 |
| | A00124 | | | | |
| | | | | | |
| | | | | | |
| | Product Average | | | | |

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| | | | | | |
|--|-----------------------------|-----------------------|---|------|-----|
| | 3M GLASS CLEANER | 1 min 36 sec | 1 | 19.5 | 2 |
| | | 1 min 29 sec | 1 | 20 | 2 |
| | | 1 min 37 sec | 1 | 16 | 2 |
| | Product Average | | 1 | | 2.0 |
| | SPARTAN GLASS CLEANER | >2 min | 1 | 9 | 1 |
| | | >2 min | 1 | 3 | 1 |
| | | 2 min | 1 | 12 | 2 |
| | Product Average | | 1 | | 1.3 |
| | CLAIRE GLEME | >2 min | 1 | 10.5 | 2 |
| | | >2 min | 1 | 10.5 | 2 |
| | | 1 min 55 sec | 1 | 14 | 2 |
| | Product Average | | 1 | | 2.0 |

Summary:

| | | | | | | |
|--------------------------|---|---------------|--------------------|-------------------------------------|----------------------|--|
| Substrates: | | Glass/Quartz | | | | |
| Contaminants: | | None | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: | |
| Amrep Inc | Aspire Glass & Surface Cleaner A00122 Aerosol | 100 | | <input checked="" type="checkbox"/> | Rank = 1 | |
| Amrep Inc | Misty Heavy Duty Glass Cleaner Aerosol | 100 | | <input type="checkbox"/> | Rank = 5 | |
| 3M | 3M Glass Cleaner Aerosol | 100 | | <input checked="" type="checkbox"/> | Rank = 3 | |
| Spartan Chemical Company | Glass Cleaner - Aerosol | 100 | | <input checked="" type="checkbox"/> | Rank = 1 | |
| Claire Manufacturing | Gleme Glass Cleaner Aerosol | 100 | | <input checked="" type="checkbox"/> | Rank = 3 | |
| SC Johnson & Son Inc | Windex Glass & More Cleaner (Spray) | 100 | | <input type="checkbox"/> | Rank = 6 | |

Conclusion:

Amrep Aspire and Spartan had the top performing products for glass cling testing.