

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2015
DateRun: 09/17/2015
Experimenters: Alicia Melvin
ClientType: Cleaning Equipment Mfr
ProjectNumber: Project #1
Substrates: Stainless Steel
PartType: Coupon
Contaminants: Greases, Food
Cleaning Methods: Manual Wipe
Analytical Methods: Gravimetric
Purpose: Abrasion Testing of Series 2

Experimental Procedure: Initial weights of stainless steel coupons were recorded and then coated with 0.5 grams of DCC-17 soil. The coupons air dried overnight and dirty weights were recorded the next day. A clean 5 gallon bucket was filled to the 4 gallon marker 3 times with water from the lotus pro. In a clean 1000ml glass beaker, ozonated water was collected to the 800ml marker. Three dirty coupons were placed on the abrasion machine at a time per abrasion trial. Using a spray nozzle, the ozone water was sprayed once on each dirty coupon and then once on a Wypal towel. The machine ran for 20 cycles (30 seconds of cleaning), and then the clean coupons were removed to air dry overnight on a tray. This process was repeated for the 30min, 60min, 120min, 240min, and 1440min mark for Series 2 with the same sample of ozone water per trial. Clean weights were recorded for percentage removal the next day.

DCC-17-33% vegetable shortening; 33% lard; 33% vegetable oil; 1% carbon lampblack.

Results: Trial 1

| Cleaner | Coupon # | Initial wt | Final wt | % Removed |
|---------------|----------|------------|----------|-----------|
| 03 (0 Min) | 17 | 0.5014 | 0.0247 | 95.07 |
| 03 (0 Min) | 10 | 0.5042 | 0.0452 | 91.04 |
| 03 (0 Min) | 4 | 0.5048 | 0.0377 | 92.53 |
| 03 (60 Min) | 8 | 0.5084 | 0.0219 | 95.69 |
| 03 (60 Min) | 7 | 0.5018 | 0.0351 | 93.01 |
| 03 (60 Min) | 20 | 0.4970 | 0.0241 | 95.15 |
| 03 (120 Min) | 9 | 0.5038 | 0.0230 | 95.43 |
| 03 (120 Min) | 31 | 0.4482 | 0.0292 | 93.49 |
| 03 (120 Min) | 21 | 0.4966 | 0.0174 | 96.50 |
| 03 (240 Min) | 15 | 0.5083 | 0.0266 | 94.77 |
| 03 (240 Min) | 6 | 0.9964 | 0.5168 | 48.13 |
| 03 (240 Min) | 23 | 0.9416 | 0.0200 | 97.88 |
| 03 (1440 Min) | 18 | 0.4941 | 0.0286 | 94.21 |
| 03 (1440 Min) | 2 | 0.5035 | 0.0250 | 95.03 |
| 03 (1440 Min) | 3 | 0.5037 | 0.0310 | 93.85 |

Trial 2

| Cleaner | Coupon # | Initial wt | Final wt | % Removed |
|------------|----------|------------|----------|-----------|
| 03 (0 Min) | 17 | 0.4628 | 0.0474 | 89.76 |
| 03 (0 Min) | 22 | 0.5071 | 0.0429 | 91.54 |

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|---------------|----|--------|--------|-------|
| 03 (0 Min) | 21 | 0.5021 | 0.0383 | 92.37 |
| 03 (60 Min) | 7 | 0.5022 | 0.0365 | 92.73 |
| 03 (60 Min) | 4 | 0.4956 | 0.0466 | 90.60 |
| 03 (60 Min) | 11 | 0.4974 | 0.0493 | 90.09 |
| 03 (120 Min) | 1 | 0.4958 | 0.0372 | 92.50 |
| 03 (120 Min) | 6 | 0.5048 | 0.0347 | 93.13 |
| 03 (120 Min) | 4 | 0.4980 | 0.0304 | 93.90 |
| 03 (240 Min) | 13 | 0.4947 | 0.0338 | 93.17 |
| 03 (240 Min) | 16 | 0.5037 | 0.0343 | 93.19 |
| 03 (240 Min) | 7 | 0.4998 | 0.0292 | 94.16 |
| 03 (1440 Min) | 2 | 0.4827 | 0.0327 | 93.23 |
| 03 (1440 Min) | 3 | 0.5091 | 0.0303 | 94.05 |
| 03 (1440 Min) | 5 | 0.5035 | 0.0278 | 94.48 |

Trial 3

| Cleaner | Coupon # | Initial wt | Final wt | % Removed |
|---------------|----------|------------|----------|-----------|
| 03 (0 Min) | 28 | 0.4902 | 0.0249 | 94.92 |
| 03 (0 Min) | 26 | 0.5032 | 0.0321 | 93.62 |
| 03 (0 Min) | 38 | 0.4989 | 0.0229 | 95.41 |
| 03 (60 Min) | 19 | 0.5024 | 0.0282 | 94.39 |
| 03 (60 Min) | 20 | 0.5039 | 0.0323 | 93.59 |
| 03 (60 Min) | 28 | 0.5046 | 0.0358 | 92.91 |
| 03 (120 Min) | 12 | 0.5066 | 0.0191 | 96.23 |
| 03 (120 Min) | 41 | 0.5084 | 0.0101 | 98.01 |
| 03 (120 Min) | 26 | 0.5007 | 0.0122 | 97.56 |
| 03 (240 Min) | 1 | 0.4987 | 0.0293 | 94.12 |
| 03 (240 Min) | 27 | 0.5109 | 0.0221 | 95.67 |
| 03 (240 Min) | 11 | 0.5028 | 0.0251 | 95.01 |
| 03 (1440 Min) | 22 | 0.5061 | 0.0232 | 95.42 |
| 03 (1440 Min) | 24 | 0.4952 | 0.0183 | 96.30 |
| 03 (1440 Min) | 8 | 0.4982 | 0.0192 | 96.15 |

Summary:

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|----------------------|---------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Stainless Steel | | | | |
| Contaminants: | Greases, Food | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Lotus Pro Tersano | Ozonated water Stabilized | 100 | 93.11 | <input checked="" type="checkbox"/> | Stablizer 2 |

Conclusion:

Cleaning remained fairly constant over the 24 hour period.