

SAINT-GOBAIN SOLAR GARD LLC TEST REPORT

SCOPE OF WORK

JIS Z 2801/ISO 22196:2011 - Measurement of antibacterial activity on plastics and other non-porous surfaces

PRODUCT:

4mil Antimicrobial Film TL3-AM PET Lot# 5404071

REPORT NUMBER

104448801COL-003

ISSUE DATE

16-DECEMBER-2020

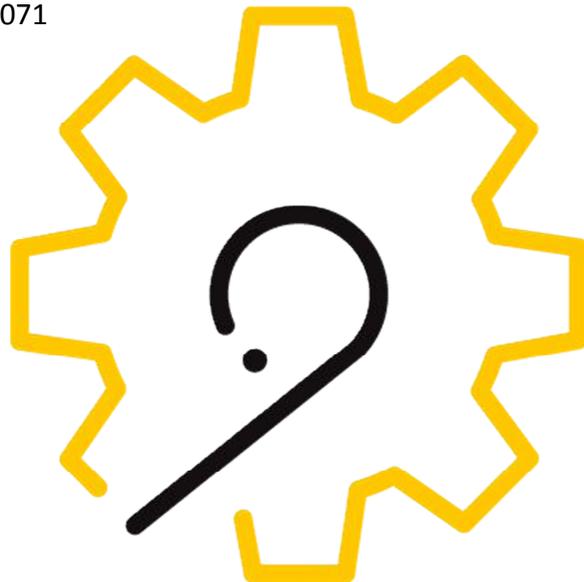
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DOCUMENT CONTROL NUMBER

GFT-OP-10h (6-July-2017)

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MICROBIOLOGICAL PERFORMANCE TEST REPORT

| | | |
|--------------------|---|---|
| Client | | Saint-Gobain Solar Gard LLC 4540 View ridge Avenue San Diego, CA 92123 |
| Project No. | | G104448801 |
| Sample | Product | 4mil Antimicrobial Film |
| | Model | TL3-AM PET Lot# 5404071 |
| | Identification No. | COL2008311016-001 |
| | Date Received | August 31, 2020 |
| | Condition | Good |
| | Production or Prototype | Production |
| Procedural | Tested By | Allison Coyle |
| | Reviewer | Nicholas Unger |
| | Dates Tested | November 30, 2020 – December 4, 2020 |
| | Report Date | December 16, 2020 |
| Standard | JIS Z 2801/ISO 22196:2011 - Measurement of antibacterial activity on plastics and other non-porous surfaces | |

Test Parameters:

| Organism | ATCC No | Initial Concentration |
|-----------------------|----------------|------------------------------|
| Escherichia Coli | 8739 | 5.30x10 ⁵ cfu/mL |
| Staphylococcus aureus | 6538 | 9.44x10 ⁵ cfu/mL |

| Test Inoculum Volume | Viable E. coli in Inoculum | Viable S. aureus in Inoculum | Polymer Type | Polymer Thickness |
|-----------------------------|-----------------------------------|-------------------------------------|---------------------|--------------------------|
| 0.4 mL | 5.30x10 ⁵ cfu/mL | 9.44x10 ⁵ cfu/mL | Para Film | 0.127mm |

| Test Parameter | Definition of Term |
|-------------------------------------|--|
| U_0 | Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the untreated test specimens immediately after inoculation. |
| U_t | Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the untreated test specimens after 24 h. |
| A_t | Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the treated test specimens after 24 h. |
| Antibacterial Activity Value | Is calculated utilizing the following equation: $= (U_t - U_0) - (A_t - U_0) = U_t - A_t$ |

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MICROBIOLOGICAL PERFORMANCE TEST REPORT

1. 4mil Antimicrobial Film – TL3-AM PET Lot# 5404071

| S. aureus Results | | E. coli Results | |
|------------------------------|--------|------------------------------|--------|
| Test Parameter | Result | Test Parameter | Result |
| <i>Initial U₀</i> | 5.97 | <i>Initial U₀</i> | 5.72 |
| <i>24 Hr U_t</i> | 3.19 | <i>24 Hr U_t</i> | 4.11 |
| <i>24 Hr A_t</i> | 1.00 | <i>24 Hr A_t</i> | 1.00 |
| Antibacterial Activity Value | 2.19 | Antibacterial Activity Value | 3.11 |
| Percent Reduction | 99.4% | Percent Reduction | 99.9% |

Note: Antibacterial Activity Values are presented in Log form as per standard requirements. A value of 1.00 would equate to a 90% reduction. A 2 would be 99%, a 3 99.9% and so forth.

Test Performed by:



Allison Coyle
Chemist
Columbus Office

Report Approved by:



Nicholas Unger
Staff Engineer
Columbus Office