



Antifungal and Antibacterial Properties of Korogard Thermoplastic Sheet

TB - 132

Introduction

Korogard sheet resists bacteriological and fungal development which makes it ideal for use in hospitals, food industry, etc. It does not readily provide a source of nutrients for bacteria and fungi. One source of these nutrients come from an additive known as a plasticizer, which in most cases will support microbial growth. Since it does not contain plasticizers, the main source of nutrients is removed and it performs very well when tested for bacterial and fungal growth.

Korogard sheet was subjected to fungus resistance testing in accordance with ASTM G-21 and bacteria resistance testing in accordance with ASTM G-22, Procedure B. Testing was performed by Truesdail Laboratories, Inc., located in Tustin, California. The Korogard sheet samples did not allow any fungus or bacteria growth.

The following test results show that Korogard sheet performs exceptionally when exposed to bacteria and fungus, without the addition of an antimicrobial additive.

I) Fungus Resistance Testing, ASTM G-21:

Eighteen day cultures of the following pure culture fungi were harvested, washed and their spore counts adjusted to 1,000,000 ($\pm 200,000$ per ml).

| Organism | ATCC Number |
|-------------------------|-------------|
| Aspergillus niger | 9642 |
| Penicillium pinophilum | 11797 |
| Gliocladium virans | 9645 |
| Aureobasidium pullulans | 15233 |
| Chaetomium globosum | 6205 |

The spore suspensions were combined and sprayed on the samples and controls which were placed on mineral salts agar and placed in the test chamber. The samples, along with controls were incubated for 28 days and examined weekly.

| Sample Designation | Observations (Rating*) | | | |
|-----------------------------|------------------------|---------|---------|---------|
| | 7 Days | 14 Days | 21 Days | 28 Days |
| Thermoplastic Sheet: | | | | |
| # 1 | 0 | 0 | 0 | 0 |
| # 2 | 0 | 0 | 0 | 0 |
| # 3 | 0 | 0 | 0 | 0 |
| # 4 | 0 | 0 | 0 | 0 |
| Controls: | | | | |
| Filter Paper | 4 | 4 | 4 | 4 |
| Glass Slides | 0 | 0 | 0 | 0 |

*Rating: 0=no growth, 1=traces, 2=light, 3=moderate, 4=heavy growth

Conclusion of Fungus Resistance Testing:

The Korogard sheet samples did not allow any fungus growth (rating of 0).

Korogard

ISO 9001 and ISO 14001 Certified
Customer Service
Phone: 800.628.0449
Fax: 330.668.7703
Email: korogard@rjfnet.com



Antifungal and Antibacterial Properties of Korogard Thermoplastic Sheet TB - 132

II) Bacteria Resistance Testing, ASTM G-22:

A twenty-four hour culture of *Pseudomonas aeruginosa* (ATCC 13388) was harvested and washed three times by centrifugation using sterile distilled water. The bacterial suspension was added to sterile, melted minerals salts agar, mixed and plates poured. A sample of the inoculated agar was taken and a plate count to determine the number of viable *pseudomonas* present.

| Sample Designation | Observations (Rating*) | | |
|-----------------------------|------------------------|---------|---------|
| | 7 Days | 14 Days | 21 Days |
| Thermoplastic Sheet: | | | |
| # 1 | 0 | 0 | 0 |
| # 2 | 0 | 0 | 0 |
| # 3 | 0 | 0 | 0 |
| # 4 | 0 | 0 | 0 |
| Controls: | | | |
| Inoculated Agar | 0 | 0 | 0 |
| Glass Slides | 0 | 0 | 0 |
| Plate Count Agar | 1 | 1 | 1 |

*Rating: 0=no growth, 1=growth

Conclusion of Bacteria Resistance Testing:

The Korogard sheet samples did not allow any bacterial growth (rating of 0).

Korogard

ISO 9001 and ISO 14001 Certified
Customer Service
Phone: 800.628.0449
Fax: 330.668.7703
Email: korogard@rjfn.com

Because we cannot anticipate or control the many different conditions under which this information and our products may be used, we do not we do not guarantee the applicability of the accuracy of this information or the suitability of our products in any given situation. Users should conduct their own tests to determine the suitability of each product for their particular purposes. Data in the physical property table represents typical values and are to serve only as a guide for engineering design. Results are obtained from specimens under ideal laboratory conditions. Right to change physical properties as a result of technical progress is reserved. THE PRODUCTS DISCUSSED ARE SOLD WITHOUT WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, EITHER EXPRESSED OR IMPLIED, EXCEPT AS PROVIDED IN OUR STANDARD TERMS AND CONDITIONS OF SALE. Buyer assumes all responsibility for loss or damage arising from the handling and use of our products, whether done in accordance with directions or not. In no event shall the supplier or the manufacturer be liable for incidental or consequential damages. Also, statements concerning the possible use of our products are not intended as recommendations to use our products in the infringement of any patent. Consult local code and regulatory agencies for specific requirements regarding code compliance, transporting, processing, recycling and disposal of our products. Product not intended for use as a heat resistant surface. Texture, product grade and other conditions may cause variations in appearance.

This information supersedes all previously published data.