

# Marlite Inc.

# MICROBIOLOGICAL TEST REPORT

**SCOPE OF WORK**

ASTM G21-15(2021) E1 – STANDARD PRACTICE FOR DETERMINING RESISTANCE OF SYNTHETIC POLYMERIC MATERIALS TO FUNGI

**PRODUCT**

FIBER REINFORCED PLASTIC. MODEL(S): ARTIZAN MAX

**LABORATORY REPORT NUMBER**

106070436COL-001

**ISSUE DATE**

11-Feb-2025

**TESTING FACILITY**

Intertek Columbus Microbiology Laboratory  
1717 Arlingate Ln.  
Columbus, OH 43228

**DOCUMENT CONTROL NUMBER**

RTTDS-L-AMER-Test-8074  
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## MICROBIOLOGICAL TEST REPORT

### SECTION 1 REPORT

TEST METHOD	<b>ASTM G21-15(2021) e1 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi</b>
CLIENT	Marlite Inc. 202 Harger St Dover, OH 44622-2304 USA
LABORATORY PROJECT No.	G106070436
LABORATORY REPORT No.	106070436COL-001
DATES TESTED	01/07/2025 –02/04/2025
REPORT DATE	02/07/2025

### SECTION 2 TEST SAMPLE

DESCRIPTION	Fiber Reinforced Plastic
MODEL(S)	Artizan Max
ACQUISITION METHOD	Sample shipped by the client to test facility
ARRIVAL DATE	01/06/2025
SAMPLE ID	COL2501061202-001
CONDITION	New
DEVELOPMENT LEVEL	Production

### SECTION 3 CHALLENGE MICROORGANISMS

Organism	ATCC Number	Source
<i>Aspergillus brasiliensis</i> (historically <i>Aspergillus niger</i> )	9642	ATCC
<i>Talaromyces pinophilus</i> (historically <i>Penicillium pinophilum</i> )	11797	ATCC
<i>Chaetomium globosum</i>	6205	ATCC
<i>Trichoderma virens</i> (historically <i>Gliocadium virens</i> )	9645	ATCC
<i>Aureobasidium pullulans</i>	15233	ATCC

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**MICROBIOLOGICAL TEST REPORT**

**SECTION 4 TEST SUMMARY**

This test method evaluates the ability of synthetic polymerics to resist fungal growth under favorable environmental growth conditions. Test specimens are sprayed with a solution containing mixed fungal spores from the challenge microorganisms and then incubated for a period of 28 days. The test specimens then undergo visual evaluation for fungal growth and are rated using the Description and Rating Key in Section 5 below.

A viability control consisting of sterile filter paper is inoculated and incubated in parallel. To consider the test valid, copious growth must be present on the surface of the viability control after 14 days of incubation.

**SECTION 5 TEST RESULTS**

Sample Incubation: 01/07/2025 10:00 – 02/04/2025 11:00

The two sides of the sample were different; however, testing was conducted only on the printed side, as per the client's request.

Sample	Replicate Number	Description of Fungus Growth	Rating
Artizan Max	1	No fungal growth was observed on face of material	0
	2	No fungal growth was observed on face of material	0
	3	No fungal growth was observed on face of material	0

**Description and Rating Key**

Observed Growth on Specimens (Sporulating or Non-Sporulating, or Both)	Rating
None	0
Traces of growth (less than 10%)	1
Light growth (10 to 30%)*	2
Medium growth (30 to 60%)	3
Heavy growth (60% to complete coverage)	4

\* Per ASTM G21, continuous cobwebby growth extending over the entire specimen, even though not obscuring the specimen, should be rated as two.

Progressive change in specific physical, optical, or electrical properties not evaluated.

## MICROBIOLOGICAL TEST REPORT

### SECTION 6 PHOTOS

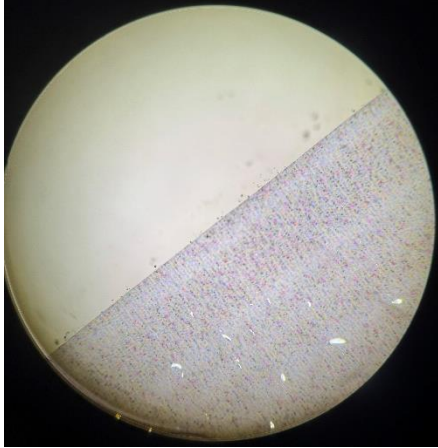


Photo 1. Artizan Max – 10x Magnification, after Incubation period.

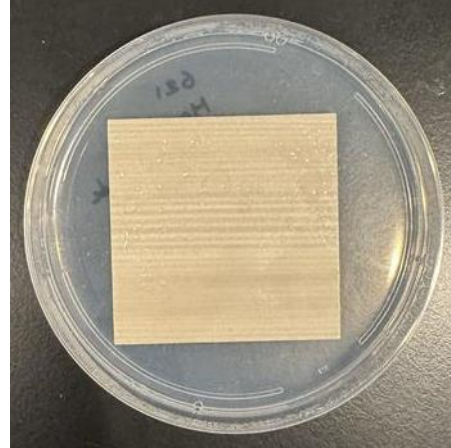


Photo 2. Artizan Max – After incubation period.



Photo 3. Control after incubation period – 10x Magnification

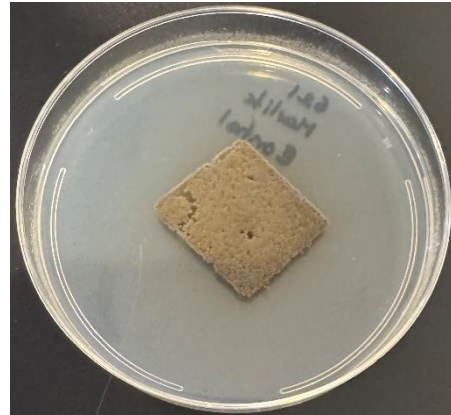


Photo 4. Control after incubation period.

Test Performed by:



Gerardo Cortés  
Microbiologist



Christopher Spencer  
Microbiology Laboratory  
Technician

Reviewed by:



Rafael Menchu  
Senior Microbiologist

# Marlite Inc.

# MICROBIOLOGICAL TEST REPORT

**SCOPE OF WORK**

ASTM G22 –2023: STANDARD PRACTICE FOR DETERMINING RESISTANCE OF PLASTICS TO BACTERIA (PROCEDURE A)

**PRODUCT**

FIBER REINFORCED PLASTIC MODEL(S): ARTIZAN MAX

**LABORATORY REPORT NUMBER**

106070436COL-002

**ISSUE DATE**

01/30/2025

**TESTING FACILITY**

Intertek Columbus Microbiology Laboratory  
1717 Arlingate Ln.  
Columbus, OH 43228

**DOCUMENT CONTROL NUMBER**

Micro-RTTDS-AMER-Test-1105  
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## MICROBIOLOGICAL TEST REPORT

### SECTION 1 REPORT

TEST METHOD	<b>ASTM G22 –2023: Standard Practice for Determining Resistance of Plastics to Bacteria (Procedure A)</b>
CLIENT	Marlite Inc. 202 Harger St Dover, OH 44622-2304 USA
LABORATORY PROJECT No.	G106070436
LABORATORY REPORT No.	106070436COL-002
DATES TESTED	01/09/2025- 01/30/2025
REPORT DATE	01/30/2025

### SECTION 2 TEST SAMPLE

DESCRIPTION	Fiber Reinforced Plastic
MODEL(S)	Artizan Max
ACQUISITION METHOD	Sample shipped by the client to test facility
ARRIVAL DATE	01/06/2025
SAMPLE ID	COL2501061202-001
CONDITION	Good, new

SAMPLE PHOTO



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**MICROBIOLOGICAL TEST REPORT**

**SECTION 3 CHALLENGE MICROORGANISMS**

Organism	ATCC Number	Source
<i>Pseudomonas aeruginosa</i>	13388	ATCC

**SECTION 4 TEST SUMMARY**

The purpose of this test method is to evaluate the resistance of the plastics and additives, such as plasticizers, lubricants, and colorants, to microbial attack. The test specimens are inoculated with bacteria and then incubated under favorable microbial growth conditions. The test specimens are examined and rated for visual growth once the incubation period is complete.

For Procedure A, growth will occur beneath susceptible samples on the agar surface. This is the surface that is evaluated and provided with a growth rating in the results section below.

The effects on physical, optical, and electrical properties were not evaluated.

No deviations to the standardized method.

**SECTION 5 TEST RESULTS**

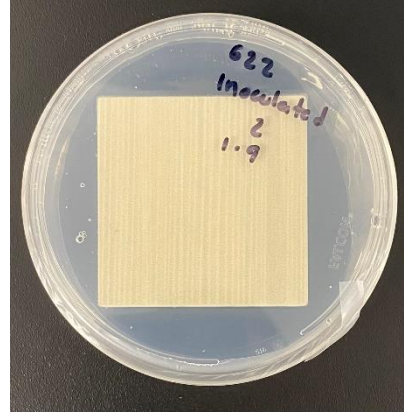
Test specimen	Replicate Number	Description of Bacterial Growth
Artizan Max	1	No bacterial growth under or around the test specimen.
	2	No bacterial growth under or around the test specimen.
	3	No bacterial growth under or around the test specimen.

## MICROBIOLOGICAL TEST REPORT

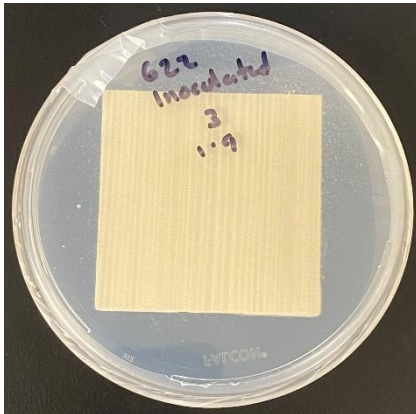
### SECTION 6 PHOTOS



Picture 1. Artizan Max (replicate 1) after 21 days of incubation.



Picture 2. Artizan Max (replicate 2) after 21 days of incubation.



Picture 3. Artizan Max (replicate 3) after 21 days of incubation.

Test Performed by:

Gerardo Cortés  
Microbiologist

Reviewed by:

Rafael Menchu Rosal  
Senior Microbiologist