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**Fungus Resistance Testing of Monoglass  
sample according to ASTM G-21 (Standard  
Practice for Determining Resistance of  
Synthetic Polymeric Materials to Fungi)**

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Report to: **Monoglass Incorporated**  
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Attention:

Client Reference: **Signed Authorization for Services Form**

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**ORTECH**

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## SUMMARY

The testing of a sample of Monoglass (ORTECH samples 94-T35-B0007) was conducted according to ASTM G-21, 1990. This is a 21 day test to determine susceptibility of materials to fungal attack. The fibreglass sample showed no growth after 21 days incubation under controlled conditions.

## METHOD

The testing of Monoglass (ORTECH sample 94-T35-B0007) for fungal resistance was conducted according to ASTM G-21, 1990. For ASTM G-21, five fungal cultures are used; Aspergillus niger (American Type Culture Collection 9642), Penicillium pinophilum (ATCC 11797), Gliocladium virens (ATCC 9645), Aureobasidium pullulans (ATCC 15233), and Chaetomium globosum (ATCC 6205). The cultures were harvested with a mineral salts solution to prepare a mixed spore suspension.

The stock cultures were less than four months old. The viability of each fungal culture was confirmed. Sterilized filter paper controls were prepared as described in ASTM G-21 and inoculated and incubated with the test specimens. Subsamples (four subsamples of 2.0 grams each) of the Monoglass were aseptically transferred to the surface of the agar plates. Inoculation with the mixed five fungal spore suspension was accomplished by spraying the suspension in the form of a fine mist from an atomizer. The test material was sprayed until the initiation of droplet coalescence. Incubation was at 30°C, 95% relative humidity for a maximum of 21 days (Incubator measuring instrument inventory number A04129 equipped with recording thermometer MII # B01075).

The filter paper controls were observed at 14 days incubation to confirm the viability of the spore suspension. The sample was visually evaluated on the 7th, 13th and 21st day of testing using a binocular stereoscopic microscope (MII # 4816) at 160 times magnification.

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## RESULTS

The results of the fungal resistance testing on the Monoglass sample showed no fungal growth on the material after 21 days incubation. This is recorded as none with a rating of zero for "observed growth on specimens" according to ASTM G-21. The controls incubated with the fibreglass samples showed abundant growth under the incubation conditions. This verifies that the fungal cultures were viable and that the conditions for growth were acceptable for the test organisms.

## CONCLUSIONS

The Monoglass sample of fibreglass insulation was tested according to ASTM G-21. The sample of fibreglass did not support fungal growth when tested under the specified conditions. The sample receives a rating of zero according to ASTM G-21, 1990.



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