

	Blirt S.A. 80-172 Gdansk, ul. Trzy Lipy 3/1.38
	Test Report DNA-Gdansk Department
No:	234/Z/20120303/D/IZLA; 156/Z/20130312/D/IZLA

NAME AND ADDRESS OF THE CUSTOMER	Zakłady Tworzyw Sztucznych „Gamrat” S.A. ul. Mickiewicza 108 38-200 Jasło
Testing method: PN-EN ISO 846:2002 Tworzywa sztuczne. Ocena działania mikroorganizmów („Plastics -- Evaluation of the action of microorganisms”) Method A, B, B' and C.	
Samples: Centra 43, Gamrat Ultra 43, Intera 43, Norma 43, Elektra 43 with BIO SILVER protection, thickness of about 2 mm, samples in the form of square with dimensions 50 x 50 mm and Modus with BIO SILVER protection, thickness of about 1.2 mm, samples in the form of square with dimensions 50 x 50 mm	

Method A			
Method	Lots name	Evaluation of growth	
		The surface of samples	Nutrient agar
A	S – sterile samples	no mold growth, growth intensity – 0	no mold growth
	I – inoculated samples	no mold growth, growth intensity – 0	almost no growth around samples
Method B and B'			
B and B'	S – sterile samples	no mold growth, growth intensity – 0	no mold growth
B	I – inoculated samples	no mold growth, growth intensity – 0	the inhibition zone appears around samples, weak sporulation beyond inhibition zone
B'	I – samples placed on an overgrown mycelium	no mold growth, growth intensity – 0	the inhibition zone appears around samples, weak growth and sporulation beyond inhibition zone, no sporulation near the sample
Method C			
C	S – sterile samples	without growth, the surface unchanged in relations to the lot „0”	no visible growth
	I – samples inoculated with <i>E. coli</i>	without growth, the surface unchanged in relations to the lot „0”	no visible growth in the whole medium
	I – samples inoculated with <i>S. aureus</i> MRSA	without growth, the surface unchanged in relations to the lot „0”	no visible growth in the whole medium
Testing organism: <i>Aspergillus niger</i> ATCC 6275 (A, B and B'), <i>Escherichia coli</i> ATCC 8739 and <i>Staphylococcus aureus</i> MRSA 6kN ₁ (C)			
Incubation conditions: 29°C ± 1°C, 4 weeks			
Test end date: 01.02.2013, 22.04.2013			

Evaluation of the samples:

The results indicate the strong fungistatic effect of the biocide-treated samples, covering the area around the sample by diffusion. Tests involving bacteria showed that the samples do not contain any nutrients.

Summary:

Tests performed according to PN-EN ISO 846:2002 "Plastics -- Evaluation of the action of microorganisms" showed that samples of Centra 43, Gamrat Ultra 43, Intera 43, Norma 43, Elektra 43 and Modus with BIO SILVER protection are resistant to the tested microorganisms (bacteria and fungi) and microbial growth does not cause sample damage.


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