

Toruń on August 7th, 2020

Applies to:

Test report no **TB/47,51/BIO/2020** of August 5th, 2020

With regard to the results of the determination tests: **antimicrobial properties and fungistatic properties of the polymer material**

according with: **ISO 22196:2011 and PN-EN ISO 846:2019**for samples: **47/BIO/2020 relative to a control sample 51/BIO/2020**

based on:

- information and data provided by the customer - **not applicable**^{*)}
- knowledge available in standards, monographs and scientific publications – **ISO 22196:2011 and PN-EN ISO 846:2019**^{*)}
- knowledge available in studies of research carried out as part of research and development activities at the Institute – **research card**^{*)}

the following opinion/interpretation is presented:

for the determination of antimicrobial properties:

The tested sample 47/BIO/2020 marked by the Principal as "AIRFLEX SPECTRA BAD 07-60" showed the antimicrobial activity expressed as a % reduction in relation to the control sample, the strongest against *S. aureus* and *S. enterica* (Red_% = 99.7), slightly weaker against *P. aeruginosa* (Red_% = 98.6) and *E. coli* (Red_% = 98.0) and the weakest against *L. pneumophila* (Red_% = 66.3). The reduction rate after 24 h contact time is shown graphically in the graph below.

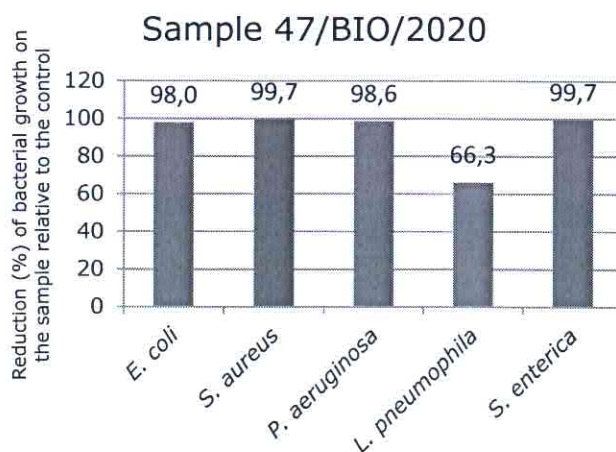


Fig. Reduction (%) of bacterial growth for sample 47/BIO/2020.

^{*)} If applicable, describe in detail the source of knowledge; if not applicable, write "not applicable"

for the determination of fungistatic properties

The tested sample 47/BIO/2020 marked by the Principal as "AIRFLEX SPECTRA BAD 07-60" showed a very strong fungistatic activity against each of the tested strains (*A. brasiliensis*, *P. expansum*, *C. albicans* and *S. cerevisiae*). The fungistatic properties during the test are assessed by evaluating the growth of the strains on the sample surface of 50 × 50 mm (± 1 mm) by applying a grid of 50 × 50 mm (± 0.5 mm) divided into 100 equal squares. The outer 36 squares are not taken into account in the evaluation to exclude an outer edge effect. If the growth is not observed with the naked eye, the sample is subjected to microscopic observation at a magnification of up to 50x. The fungistatic activity of sample 47/BIO/2020 compared to the control sample based on the visual assessment is shown graphically in the graph below.

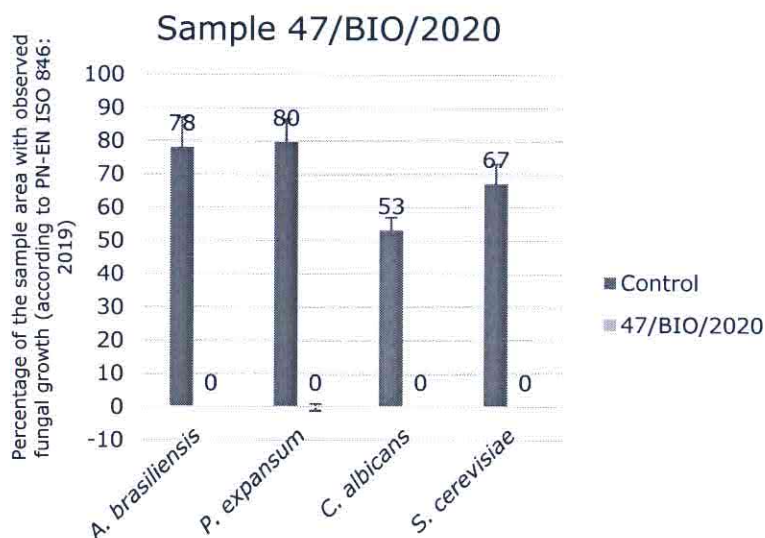


Fig. Growth of the fungus (visual evaluation) on the sample 47/BIO/2020, and a control sample.

SIEĆ BADAWCZA ŁUKASIEWICZ
 INSTYTUT INŻYNIERII MATERIAŁÓW
 POLIMEROWYCH I BARWNIKÓW
 ul. M. Skłodowskiej-Curie 55, 87-100 TORUŃ
 tel. 56/650-64 22; fax: 56/650-03-33
 e-mail: 879-017-06-91

Performed by:

Główny specjalista

dr Katarzyna Janczak

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