Microban Europe Ltd

Synres Almoco bv

Test Report

Background

The following sample references have been tested under MBE reference N° 406C and were supplied by Synres Almoco bv.

Sample Ref :	Microban Additive	% Addition
PiMC – Control – 1271A 411		
PiMC – 0.75% IB14 – 1271A CM1009B	IB14 (R75,000-025)	0.75
PiMC – 1.0% IB14 – 1271A CM1009B	IB14 (R75,000-025)	1.0

Test Protocol

Antibacterial activity has been measured by quantifying the survival of bacterial cells which have been held in intimate contact to the test sample surface for 24 hours at 35°C with a relative humidity > 95%.

The antibacterial effect is measured by comparing the survival of bacteria on a treated material with that achieved on an untreated. Prior to testing, samples were static leached in distilled water for 24hrs following by 24hrs ambient drying to remove any volatiles present in the samples after processing.

Antimicrobial activity in this case was determined using the test method ISO 22196. Sample materials were placed onto the surface of agar plates and then inoculated, separately, with a suspension populated by the organisms *Escherichia coli* (gram negative) and *Staphylococcus aureus* (gram positive). The nutrient level used during this test series was 1:250.

Results

Relative to Control

Sample Ref :	**Log Reduction**	**% Reduction**
PiMC – Control – 1271A 411		
PiMC – 0.75% IB14 – 1271A CM1009B – E.coli	5.3	> 99.99
PiMC – 0.75% IB14 – 1271A CM1009B – S.aureus	≥ 3.39	≥ 99.96
PiMC – 1.0% IB14 – 1271A CM1009B – E.coli	≥ 5.77	≥ 99.99
PiMC – 1.0% IB14 – 1271A CM1009B – S.aureus	≥ 3.39	≥ 99.96

Summary

Based on the obtained results, the following interpretation is given, Microban Europe Ltd consider results ≥ 90% Reduction (1 Log kill) to indicate a satisfactory antimicrobial effect. Results ≥ 99% Reduction (> 2 Log kill) are very good with 99.9% + reduction excellent.

In addition to this, the following comments are also made :

- In line with previous test submissions (MBE 406 / 406A) ,a modification to the sample preparation to include a period of 24hrs static leaching in distilled water was carried out to remove any volatiles present in the PiMC samples after processing.
    - This was carried out to reduce the likelihood of residual efficacy from volatile compounds and process aids affecting the untreated control (primarily for S.aureus), which was witnessed under MBE 406 test series.
- 1 : 250 nutrient level was used during the testing to help maintain the viability of S.aureus.
    - As a result, the untreated control exhibited less residual activity than previously observed under MBE 406 and could be considered a good viable control.

In summary, 0.75% Additive IB14 (R75,000-025) would be the minimum recommended additive level for treatment of PiMC from Synres Almoco.