

EVALUATION OF ISCAGUARD VIR

Objective

Iscaguard VIR is used in the manufacture of **FLAMETECT NX2** to impart anti-microbial properties from the product when applied to textile substrates. The objective of this report is to provide technical details of liquid Iscaguard VIR, which when impregnated into a non-woven textile will provide antibacterial, fungicidal, sporicidal and virucidal activities.

Methodology

The declared ingredient list complies with the requirements of the EU and ASEANIC Biocidal Directives. It is also recommended that the following cautions are highlighted "For external use only", "Avoid contact with eyes" and "In case of contact with eyes rinse immediately with plenty of water".

Biocidal Activity of a Solution Containing 1% Iscaguard VIR:

When the bactericidal activity of the liquid was evaluated according to Disinfection procedure EN1276:2009 under clean conditions and with a contact time of one minute against a number of organisms it yielded the log reductions as follows:

E. coli	>6.14
S. aureus	>6.30
Enterococcus hirae	>6.26
P. aeruginosa	>5.73

These log reductions (kills of >99.999%) fully comply with the requirements of the test, i.e. log reductions of >5, and substantiated an "Antibacterial" claim.

The liquid has also been subjected to the Hygienic procedure EN 12054 bacteriocidal suspension test but with a reduced contact time of 10 seconds against Methicillin Resistant Staphylococcus aureus. The log reduction obtained was 2.38 (a kill of 99.6%) showing a very rapid "Antibacterial" action.

The sporicidal activity of the liquid was evaluated against Clostridium difficile spores according to a modified EN 13704:2002 Sporicidal Suspension Test under clean conditions with a contact time of 60 minutes. This test yielded a log reduction of >5.95 (a kill of >99.999%). Hence the liquid had fully complied with the requirement of the test, namely a log reduction of >3.0, and substantiated a "Sporicidal" claim. When this test was repeated with a reduced contact time of 15 minutes the liquid yielded a log reduction of 2.96 (a kill of 99.89%).

The fungicidal activity of the liquid was evaluated under dirty conditions according to EN 1650:1997 Fungicidal Suspension Test with a contact time of 15 minutes against *C. albicans* and *A. niger*. The log reductions (kills of 99.9999%) obtained were as follows:

C. albicans >6.01
A. niger >5.94

These results showed the liquid complied with the requirements of that test, i.e. log reductions of >4.0. Hence these results had substantiated a "Fungicidal" claim for the product.

The virucidal activity of Iscaguard VIR measured at 1% w/w in the liquid was evaluated in sterile hard water, under clean conditions according to EN 14476:2005 Virucidal Suspension Test with a contact time of 5 minutes against Human Influenza Virus A (H1N1), feline calicivirus (FCV) [used as surrogate for norovirus], Picomaviridae (Coxsackievirus). All samples yielded a log reduction of >4.0. This log reduction (a kill of 99.99%) fully complied with the requirements of that Test i.e. log reduction of 4, and substantiated an "Antiviral" claim against H1N1, Norovirus and HFMD in the form Coxsackievirus for the liquid containing Iscaguard VIR.

Conclusions

Full technical details for an impregnating liquid for non-woven textiles containing 1.0% of Iscaguard VIR have been provided with data to substantiate "Antibacterial", "Fungicidal", "Sporicidal" and "Virucidal" claims.



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