

INTERNATIONAL

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FILTRATION NEWS™

INSIGHTS ISSUES & INNOVATIONS

CORPORATE
Hands On ESG

AIR QUALITY
Lessons (Not) Learned
from the Pandemic

STRATEGY
Choosing the Right
Filtration Solution



Filtering
Innovation

KM Pathogen Defense Introduces NanoFense: Revolutionary Antimicrobial Technology for Enhanced Air Filtration and Pathogen Defense

KM Pathogen Defense LLC was formed to execute on an exclusive worldwide license for production of a disruptive antimicrobial technology [NanoFense], developed for protective air filtration applications. The U.S. patented formulation provides unparalleled, high performance against transmission of harmful pathogens, mold, and infectious diseases.

NanoFense is an antimicrobial silver nanoparticle formulation which has demonstrated remarkable efficacy against a broad spectrum of viruses, bacteria, and fungi. The formulation acts as a destructive adsorbent when applied or “coated” on existing filter media and has been validated to deliver this performance at multiple independent BSL-3 laboratories. Highly successful “real-world” testing results have been achieved against the Avian influenza virus (H9N2), Human Influenza A virus, Haemophilus Influenzae (H-flu), Rhinovirus, Swine Influenza virus (H1N1), Staphylococcus aureus including the viral MRSA strain, and Streptococcus pneumoniae.

The NanoFense formulation is a suspension material that can be applied directly to filter media creating an additional level of protection by eradicating a wide



PATHOGEN DEFENSE
LLC

range of viruses and bacteria. Treated media ensures that the filter cannot become a site for collected active virus particles or bacterial colonization which can lead to unintended self-contamination.

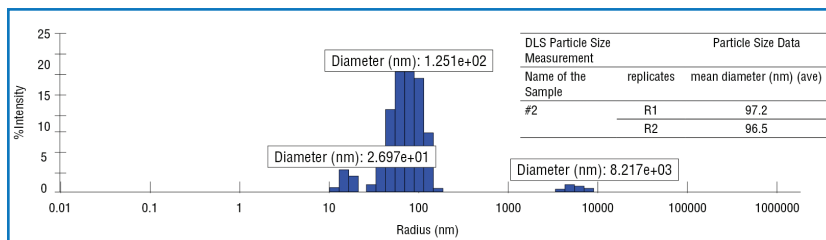
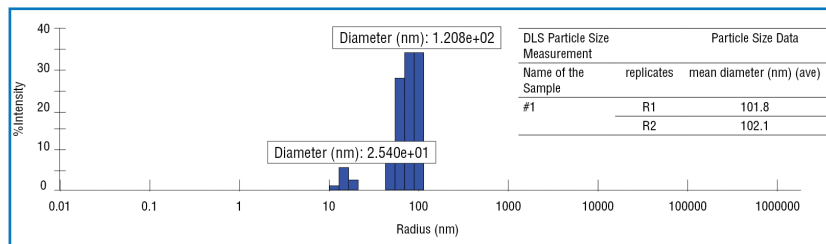
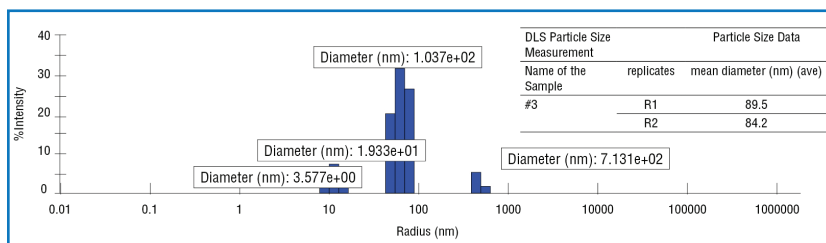
Earlier this year, a highly successful production run was carried out to verify the commercial scalability of this disruptive air filtration enhancement (the extremely uniform particle size results with virtually

Media	Microbial Challenge	Microorganism	Organic Load	Contact Time	% or Log 10 Reduction
Suspension	Virus	H9N2 (Avian Influenza)	≤ 1%	1 min	≥ 6 log 10
Filter Media	Virus	H9N2 (Avian Influenza)	≥ 5%	10 min	≥ 6 log 10
Filter Media*	Virus	H9N2 (Avian Influenza)	≥ 5%	10 min	≥ 6 log 10
Filter Media*	Virus	Human Influenza A	None	5 min	> 99.99
Filter Media	Bacteria	S. Aureus (MRSA)	5%	2 min	> 99.99
Filter Media	Bacteria	S. Pneumoniae	None	30 s	> 99.95
Filter Media*	Bacteria	Haemophilus Influenzae	None	5 min	> 99.96

* Aged one (1) year

no outliers ensure an effective, consistent protective treatment to virtually any air filtration application). The transition from a laboratory scale ‘formulation’ to verified production scale capability positions this innovation as a viable enhancement for major consumer air filtration market segments (disposable facemasks, room air purifiers, airline cabin air systems, subways, etc.).

www.kmpathogendefense.com



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