# PLASMAGEAR

CLEARNAN™ FACE MASKS

Transparent Surgical Masks Made by Electrospinning

KEY TECHNOLOGY

A new class of fully breathable transparent surgical masks made using novel materials, electrospinning process, and PECVD based technologies.

Transparent nanospun membranes patterned on transparent mesh using both non-compostable polymers (PVDF) and compostable polymers (combination of PLGA and PAN).
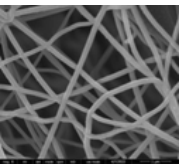
Plasma Treatment and Transparency of Nanofibers
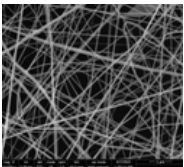
Pristine nanofiber Transparency : 81.99%
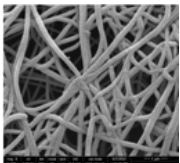
Nanofiber with thicker plasma coating Transparency : 62.14%

Nanofiber with thinner plasma coating Transparency : 66.78%

TEST RESULTS

- **Submicron PFE - ASTM F2299**
The average filtration efficiency of the five transparent nanofiber membrane samples tested was over 98%, therefore, meeting the minimum requirements for level 1, level 2 and level 3 categories.

- **Delta P Breathability and Pressure Drop - EN14683**
The average pressure drop obtained in each of the transparent nanofiber membrane samples was close to 7.5 (in mm, w.c.)

- **Bacterial Filtration Efficiency - ASTM F2101**
The average bacterial efficiency of the five transparent nanofiber membrane samples tested was over 99.5%, which brings it very close to HEPA filter performance levels.

- **Blood Repellency - ASTM F1862**
A total of 32 samples were tested for the synthetic blood penetration resistance. Out of the 32 samples, 30 samples did not show any visual signs of the penetration of synthetic blood through the nanofiber membrane. The rest of the samples showed faint signs of penetration.

- **Biocompatibility - ISO 10993**
Nanofiber membrane does not include cytotoxicity. The nanofiber membrane was tested via MEM elution method.

- **Flammability - 16 CFR Part 1610**
The material was ignited but then extinguished immediately.

Liquid barrier   Hydrophobic   Outstanding sound transmission   2 sizes

Air filtration   2 layers   Breathable   Skin Friendly