



HEALTH & PHARMACEUTICAL APPLICATIONS

NANOFILTRATION DEVICES USED TO DEACTIVATE AIRBORNE-SPREAD PATHOGENS AND INCREASE THE POPULATION'S IMMUNITY

Nanofiltration devices are used to deactivate airborne-spread pathogens on nanofibrillated cellulose/nanocellulose-based surface-modified filter material and increase the population's immunity against diseases caused by these pathogens. The device was invented to inactivate droplet-transmitted pathogens. Microdroplets are captured by filtering contaminated air on a filter material/paper with the nanofibrillated cellulose and/or nanocellulose surface treatment containing antiseptic metal ions and an adjuvant in the retained residual water. The air is taken in via the opening of the nanofiltration device located at the bottom and passes into the centre of the filter cartridge, where a germicidal emitter emits radiation in the UV-C range of the electromagnetic wavelength spectrum. Subsequently, it flows through a filter paper containing salts of antiseptic metals from

the centre of the radiator outwards through a filter paper hermetically inserted into the filter cartridge, folded harmoniously so that its surface is maximally and entirely irradiated with UV-C radiation. Antiseptic ions diffuse into the contaminated microdroplets, which, with UV-C radiation, deactivate viruses and disinfect bacteria. The droplets dry out, and the deactivated viruses and bacteria are carried away by air, which, with the help of adjuvants, reach the human body and increase the population's immunity.



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