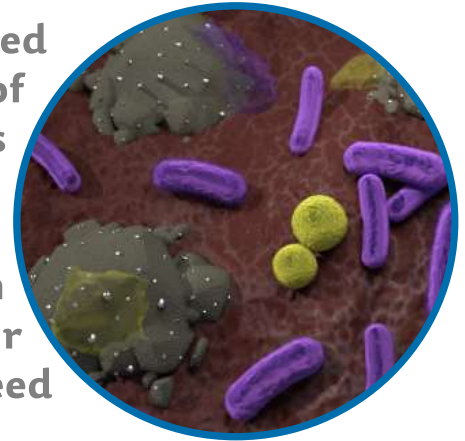


## ArgeCure Fibres - ACF

Antimicrobial Composite Fibres (ACM) fabricated by using of unique approach for immobilization of silver nanoparticles onto synthetic fibres, such as polyurethane, polyester or polypropylene. ACMs can be used for production of highly effective wound covers especially for applications in treatment of poorly healing wounds or for construction of different types of filters that need to be protected from growth of microorganism.



*„ArgeCure products have significant antimicrobial effect, are stable and safe since they do not penetrate cell membranes thanks to their microsize dimensions.”*

*Jana Soukupová, inventor*

### Main Benefits

- safe antimicrobial agent
- does not penetrate cell membranes
  - high antimicrobial effect
- does not induce resistance of microorganism
  - local, targeted effect
- strong fixation of silver on the surface
- simple fabrication of nonwoven fabrics applicable in wound and filter industry

### Technical specification

**material:** composite with silver nanoparticles

**substrate:** synthetic fibres

**size:** all diameters, all lengths

**amount of silver:** tunable

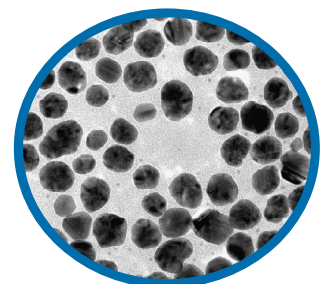
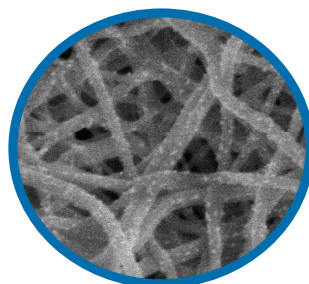
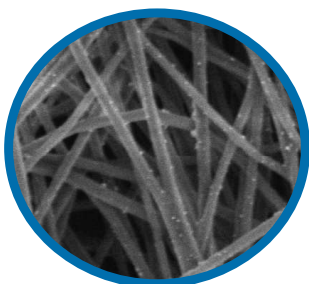
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## Why to use ArgeCure

Silver has been used as antimicrobial agent since Ancient times. The effectivity of this material was significantly increased with a change of its dimension from macroscopic to nanoscopic. Nevertheless, the diameter in nanometers or tens of nanometers allows these highly active particles to penetrate through different membranes/tissues and as such became potentially dangerous.

ArgeCure - composite materials on the bases of macroscopic core with covalently immobilized active nanoparticles represent an acceptable solution to the previously addressed issue. Innovative technology developed at Palacký University Olomouc enable synthesis of such composites. Due to the nature of the interaction between the matrix and silver, release of the nanoparticles is prevented. ArgeCure technology can be used for manufacturing of products with various dimensions, from micro-/macro-particles over microfibrils and fibres up to large surfaces. The final products reveal high antimicrobial activity thanks to the presence of strongly fixed silver nanoparticles.

ArgeCure technology profits from typical characteristic features of both composite counterparts. The micro- or macro- sized matrixes are safe not to penetrate the membranes and migrate in organisms and the immobilized silver nanoparticles provide premium antimicrobial properties.

