



ADVANCED SOFTMATERIALS INC.

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Advanced Softmaterials Inc.

## World's first sound absorption finishing agent using supermolecule technology to go on sale

Advanced Softmaterials Inc. (headquarters: Kashiwa City, Chiba Prefecture; Representative Director and President: Yumiki Noda; abbreviation: ASM)<sup>\*1</sup> has developed a sound absorption finishing agent called SeRM<sup>®</sup> SA (Sound Absorption) Mixture containing SeRM<sup>®</sup> Super Polymer (supermolecule polyrotaxane)<sup>\*2</sup>.

There are various types of sound absorbing materials, but existing porous materials currently in use, such as non-woven fabric and urethane foam, exhibit sound absorbing effects only at their respective natural frequencies.

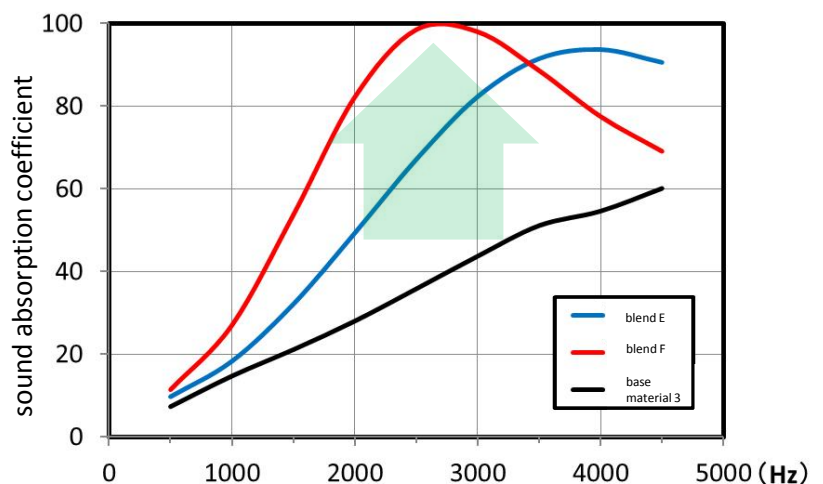
However, coating with SeRM<sup>®</sup> SA Mixture makes it possible to greatly improve the sound absorption coefficient, or shift the targeted frequency peak or the frequency band where a sound absorbing effect is exhibited. This is a function which manifests itself due to the special structure of slide-ring material<sup>\*3</sup>, which has moving cross-linking points, and there is potential for combined use with a variety of porous materials.

Frequencies for which a sound absorption effect is needed vary depending on differences in the application and paint, and material used also differ. Therefore, the plan at our company for the time being is to continue sales to companies, while adjusting the blend of SeRM<sup>®</sup> SA Mixture to suit requirements in each case.

### <Example of sound absorption finishing>

Compared to the sound absorption coefficient curve (black line) for porous material (base material 3), blend E (blue line) and blend F (red line) have different frequency peaks, but it is evident that performance is greatly improved.

\*The realized performance level varies depending on the porous material used.



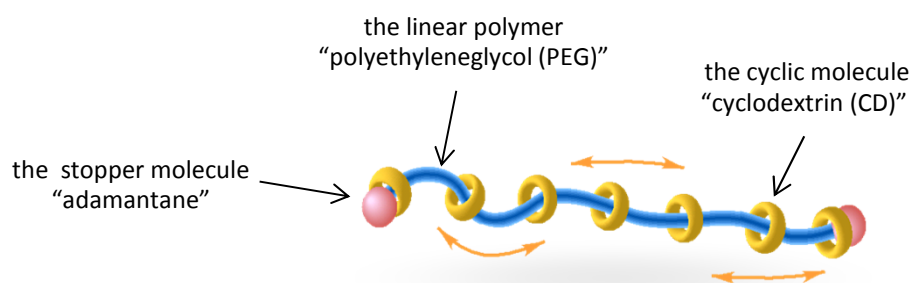
### ※1 Advanced Softmaterials Inc. (ASM)

Established in 2005 with the aim of commercializing slide-ring material developed by the University of Tokyo. Has obtained an exclusive license for comprehensive basic patents pertaining to slide-ring material from the University of Tokyo, and is engaged in product design, market development, and development of manufacturing methods.

### ※2 SeRM® Super Polymer

A molecular aggregate in which multiple molecules of different types assemble, and are founded through comparatively weak interactions.

By incorporating into various resins, it is possible to create these into materials with moving cross-linking points, i.e., slide-ring material.



### ※3 Slide-Ring Material

A material with moving cross-linking points, realized by incorporating SeRM® Super Polymer (supermolecule polyrotaxane) into the network structure of polymer, and featuring various characteristics not present in conventional materials. In March of this year, we concluded an exclusive licensing agreement with Toyoda Gosei Co., Ltd., relating to dielectric actuator and dielectric sensor applications employing the characteristics of slide-ring material.

In addition, in the R&D program of Kohzo Ito, Program Manager of the governmental Impulsing Paradigm Change through Disruptive Technologies Program (ImPACT), new functions of slide-ring material have been confirmed, such as Toray Industries, Inc.'s success in greatly improving impact resistance while maintaining hardness, by incorporating slide-ring structure into network structure of polyamide.

Incorporation of slide-ring material into network structure.

