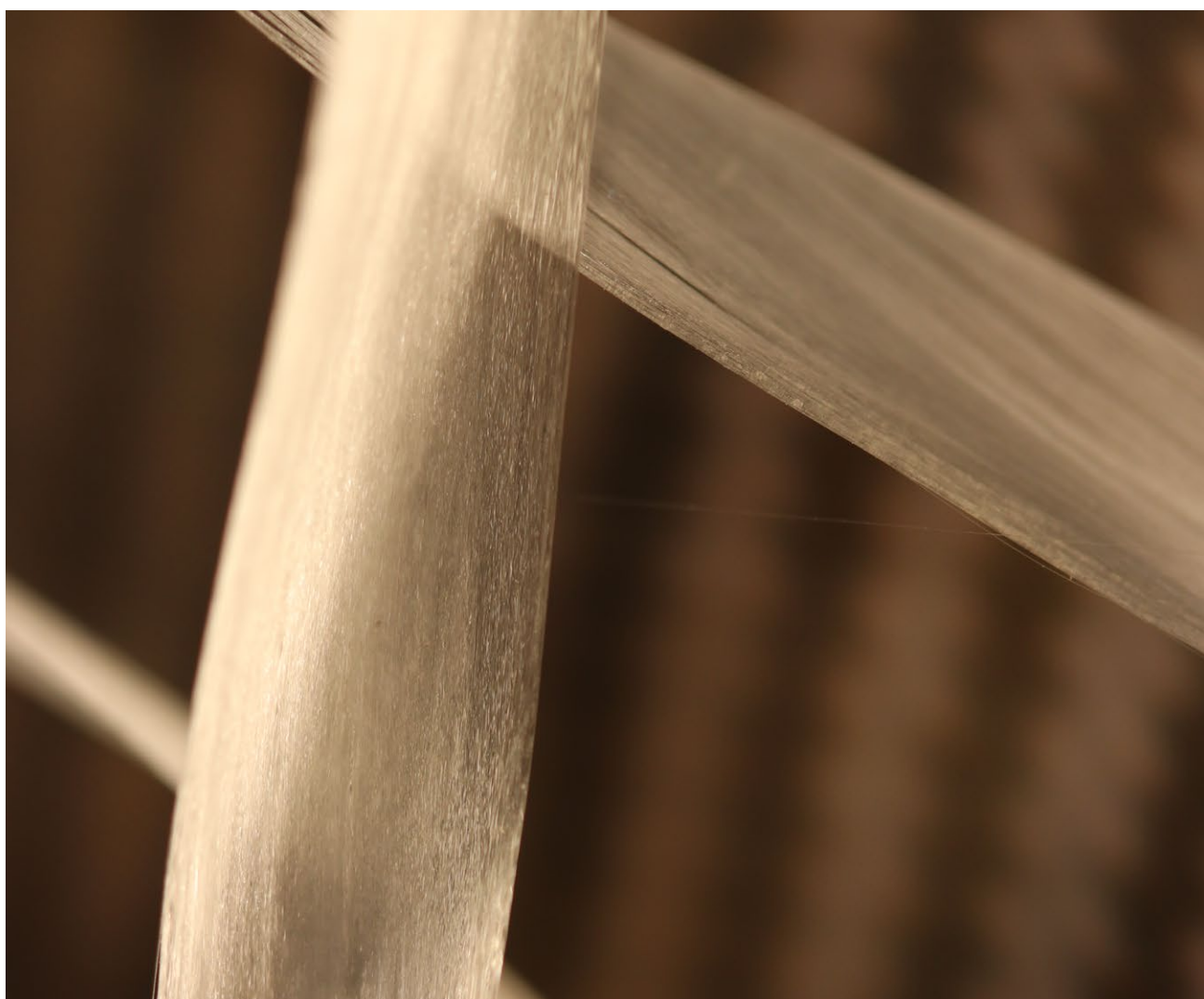


Solutions for Fiber Sizing



Evonik

- We are a global player with presence in local markets; proven, reliable product quality and supply security – on time and on target.

Face-to-Face Performance

- We have broad chemical platforms including nanosilicas, silicone specialties and organic surfactants including acetylenic chemistry.
- We are experts for interfacial phenomena, at the surface and within the matrix.
- We have specialized test facilities and laboratories in North America, Europe and Asia.
- You can count on our specialists for process knowledge, physicochemical expertise, scientific studies and regulatory knowledge.
- Long-term relationships built on trust is the basis of our work.

Our Competence

- Broad chemical platform to cover key requirements in fiber sizing processes: Nanosilicas and silicone specialties incl. low foam superwetting surfactants - Organic surfactants and acetylenic chemistry.
- Well-equipped fiber composite lab to support fully exploiting the performance of composites.
- We are experts for interfacial phenomena, at the surface and within the matrix covered by specific analytical methods.

Film Former

NANOPOX® F products are epoxy resin containing 40 % of amorphous silica nanoparticles with a spherical shape. These particles have diameters around 20 nm and a very narrow particle size distribution.

Modifying epoxy sizing formulation used to manufacture carbon or glass fiber with silica nanoparticles significantly improve toughness and fatigue performance of composites.



Multifunctional Additive

SITREN® CSA is essentially an alkyl imidazoline derivative. It is a flake, compatible with non-ionic and cationic surfactants.

As the multifunctional additive with 1-3 % dosage in sizing formulation, SITREN® CSA functions as lubricant and softener on glass fiber, it also helps to homogenize and disperse fiber particularly for textile fiber glass.

Glassfiber Textiles



Film Former

The left side of the overview shows our solution as film former in sizing formulation.

HOW WE ADD VALUE TO YOUR FIBER PRODUCTS AND YOUR SOLUTION?

- Differentiate you from competitors by offering fibers which can significantly improve composite performance, such as G_{IC} , ILLS, flexural modulus and etc.
- In addition, you just need slight adjustment of the sizing formulation with affordable cost without expensive investments.

Additives

The right side of the overview shows our additive portfolio for fiber sizing formulation.

The additives help you to optimize the production processes and to improve performance of fibers.

WITH OUR RANGE OF PRODUCTS, THE FOLLOWING ADVANTAGES CAN BE ACHIEVED:

- Improved fiber antistatic/lubrication property.
- Improved wetting behaviors of sizing agent on fibers.
- Reduction/elimination foam or bubbles of sizing agent.
- Improved sizing dispersion stability
- Improved water repellency.

Film Former & Additives for Glass Fiber & Carbon Fiber Sizing Formulation					
NANOPOX® F520	Nanosilica concentrates in DGEBF epoxy resin	Film Former	Multifunctional Additive	Homogenization Dispersion Softner Lubrication Adhesion	SITREN® CSA REWOQUAT® WE 45 HF
NANOPOX® F400	Nanosilica concentrates in DGEBA epoxy resin			Other Sizing Additives	Wetting agent
NANOPOX® FW405	Nanosilica DGEBA Epoxy Dispersion		Defoamer		TEGO® Antifoam 1488
		Antistatic agent	TEGO® Antistatic GFT REWOQUAT® CPEM		
		Dispersion emulsifier	TAGAT® V20		
				Water repellent	SITREN® 447
Additives for Glass & Mineral Wool Sizing Formulation					

Film Former Dispersion

NANOPOX® FW is a ready-to-use epoxy dispersion, which can be used directly as a component in sizing formulations.

Other Sizing Additives

With our extensive chemical toolbox of wetting agents, defoamers, antistatic agents, emulsifiers and other surfactants we can offer the right additive for various sizing formulations.

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