



EMULSION POLYMERS FOR GLASS FIBER

GLOBAL GUIDE 2025





Products and expertise in glass fiber for you

For more than 50 years, Celanese emulsions have been at the heart of the glass fiber industry's impressive growth around the world. Our technology has allowed the commercialisation of glass fiber in exciting new applications and at the same time has raised global standards for quality and performance. Worldwide, Celanese Emulsions offers the glass fiber industry state-of-the-art technology, leading emulsions, sophisticated technical solutions and a commitment to continually advancing the horizons of glass fiber performance.

The company

We are a global technology and specialty materials company based in Dallas, Texas, operating in key geographic locations worldwide. We are continuously working on innovation and process improvement and are always looking for exciting new opportunities. In all the industries we serve, our products hold leading positions worldwide. We are offering an advanced product portfolio complemented by large global production capacity, operating efficiencies, proprietary production technology and competitive cost structures.

Our two core business areas

- Acetyl Chain: acetic acid, vinyl acetate monomer, other acetyl derivatives, EVA polymers, emulsion polymers, redispersible polymer powders, specialty powder additives and cellulose derivatives
- Engineered Materials: specialty thermoplastic and food ingredients

Global reach

The global research and development center for Celanese dispersions (Frankfurt Technology Center) is located in Germany. The center closely cooperates with the other Celanese regional application development centers in Florence, USA and in Shanghai, China. These regional facilities enable us to rapidly develop new products and to assist customers in the region with their development projects. We have manufacturing plants and technical support in all major regions.



Setting the standards for high-quality glass fiber sizing polymers

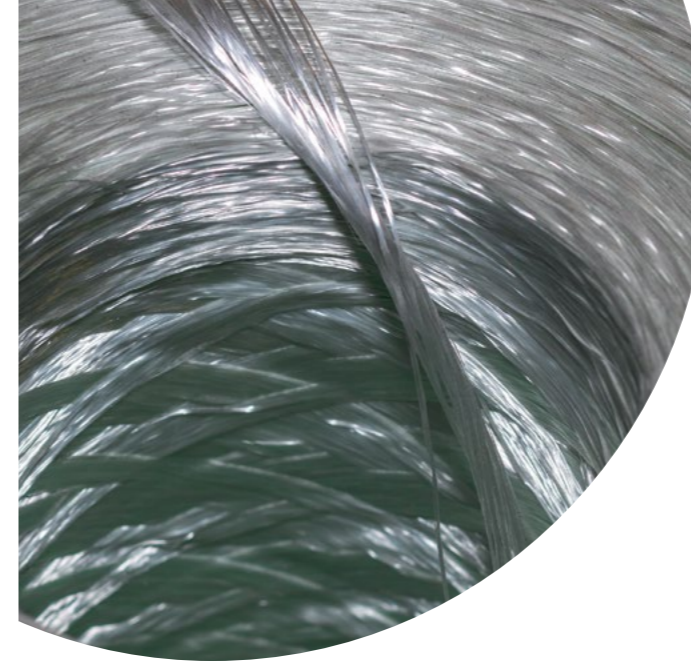
Celanese is a recognised leader in delivering performance solutions for the glass fiber industry. Our products are true leaders in this industry and have been the benchmark for quality and functionality for decades. Today, our portfolio includes polymer emulsions that we supply to glass fiber producers throughout Europe, the Americas and Asia.

These products are improving quality and performance in a range of critical glass fiber manufacturing operations, including glass fiber and yarn sizing, CSM binding, glass fiber tissue (veil) binding and other applications including coating of wall coverings, fabrics and scrims. We have extensive expertise in the field of thermoset glass fiber reinforcement.

At Celanese, we bring you expertise in the polymer chemistry aspects of glass fiber manufacture. We understand the relationship between polymer chemistry, dispersion, stabilisation and the process-related properties you need. We are ready to provide you with customised solutions for your specific glass fiber applications. Our goal is to become the partner of choice as you look to bring ever-higher levels of value to the products you create – no matter which applications you serve.

Glass fiber sizing polymers

Celanese offers emulsion polymers for the sizing of glass fibers. Our technology and experience in sizing allow us to help you improve handling of fibers during processing and optimise how they perform as part of a composite – adding value to your products at this critical stage. Celanese offers recommendations and guide sizing recipes for a variety of glass fiber products used in open and closed mold, fast or slow wet-out and high or low styrene solubility composite applications. Our polymer chemists and technical experts can study your application and recommend a set of polymers best suited to your needs.



Synthetic sizing polymers

Product	Typical properties								Typical applications
	Type	Stabilization	Solids [%]	Viscosity [mPa·s]	pH	Tg [°C]	Wet-out by Styrene	Acetone Solubility [%]	
EU Dispersions									
Vinamul® 3000	VAE	Colloid	54.0–56.0	2000–2800	4.0–5.0	5	Medium	<50	SMC / BMC roving
Vinamul® 8852	PVAc	Colloid / Surfactant	54.0–56.0	400–2500	3.5–4.5	25	Fast	100	CSM input, gun roving, panel roving, chopping roving, co-ingredient for various roving types
Vinamul® 8826	X-Linking PVAc	Colloid	51.0–53.0	20000–40000	4.5–5.5	43	Slow	<30	Chopped fibres for phenolic applications
Vinamul® 8828	X-Linking PVAc	Colloid	50.5–52.5	3000–8000	4.5–5.5	43	Slow	<30	SMC / BMC roving, co-ingredient for various roving types
US Dispersions									
Resyn® 1971	Epoxy modified PVAc	Surfactant	53.0–56.0	100–500	3.8–5.2	24	Fast	100	CSM input, gun roving, co-ingredient for various roving types
Resyn® 1037	Silane modified PVAc	Colloid	53.5–56.5	650–1850	4.1–5.0	42	Slow	<30	SMC / BMC roving class A SMC roving
Resyn® 2828	X-Linking PVAc	Colloid	50.0–53.0	1800–6700	3.8–5.2	42	Slow	<30	SMC / BMC roving, co-ingredient for various roving types
Vinamul® 8852	PVAc	Colloid / Surfactant	53.5–56.5	200–2700	3.3–4.7	26	Fast	100	CSM input, gun roving, panel roving, chopping roving, co-ingredient for various roving types
Asia Dispersions									
Vinamul® 8828	X-Linking PVAc	Colloid	50.5–52.5	3000–8000	4.5–5.5	42	Slow	<30	SMC / BMC roving, co-ingredient for various roving types
Vinamul® 8852	PVAc	Colloid / Surfactant	54.0–56.0	400–2500	3.5–4.5	26	Fast	100	CSM input, gun roving, panel roving, chopping roving, co-ingredient for various roving types

Tg – Glass transition temperature, approximate MID point Tg value has been quoted as measured by Differential Scanning Calorimetry (DSC)

CSM binding polymers

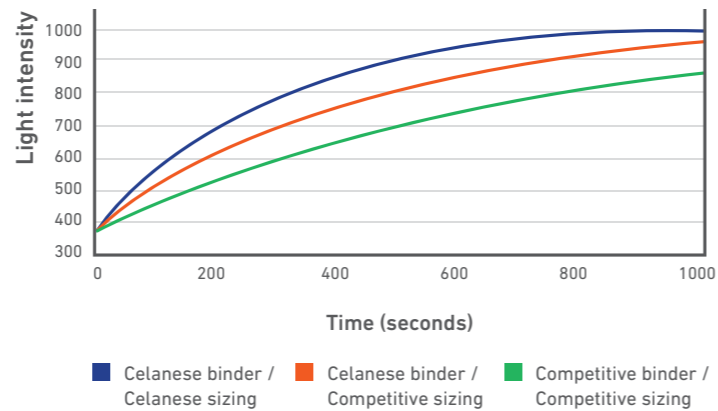
We are very knowledgeable in the field of chopped strand mat (CSM) binding. Our polymerisation chemists and technical service personnel understand the critical relationship between the polymer and the plasticiser. For an overview on how the plasticiser level influences various CSM properties, see the table on this page.

Our technical expertise also includes understanding the effect that various emulsion polymer characteristics (average particle size, Tg and stabilising colloids, etc.) have on CSM and process related properties such as flexibility, tensile strength and moldability.

The speed and degree of the wetting behaviour of CSM in styrene is a critical metric. The graph below shows the positive performance synergies of a Celanese binder and sizing system versus competitive chemistries.



Wetting by Styrene



Typical properties

Product	Type	Stabilization	Plasticizer Level	Solids [%]	Viscosity [mPa·s]	pH	Tg [°C]
EU Dispersions							
Vinamul® 8838	Plasticized PVAc	Colloid	Low	59.0–61.0	500–8000	4.5–5.5	-9
Vinamul® 88284	Plasticized PVAc	Colloid	Medium	59.0–61.0	500–8000	4.5–5.5	-11
Vinamul® 8839	Plasticized PVAc	Colloid	High	59.0–61.0	500–8000	4.5–5.5	-14
Asia Dispersions							
Vinamul® 88284	Plasticized PVAc	Colloid	Medium	59.0–61.0	500–8000	4.5–5.5	-10
Vinamul® 8839	Plasticized PVAc	Colloid	High	59.0–61.0	500–8000	4.5–5.5	-13
Vinamul® 88286	Plasticized PVAc	Colloid	Very High	59.0–61.0	500–8000	4.5–5.5	-28

Tg – Glass transition temperature, approximate MID point Tg value has been quoted as measured by Differential Scanning Calorimetry (DSC)



Beyond sizing polymers

Secondary binder technology

Secondary binder technology opens glass fiber up to an almost unlimited range of options for end-use applications and high-value performance. Celanese offers one of the broadest ranges of emulsion polymers. You can, for example, utilise our stiffer and/or crosslinking binders for hard touch wall covering products. We also offer VAE or soft acrylic polymers for strong yet soft handle variants. These options and more are available for your application. Our work in the field of secondary binders can address virtually every end-product issue you will have including hydrophilicity/hydrophobicity, paintability, acid resistance, compatibility with thermoplastic polymers and more.

Typical properties

Product	Type	Stabilization	X-Link	Solids [%]	Viscosity [mPa·s]	pH	Tg [°C]
EU Dispersions							
Wall Coverings							
Vinamul® 3231	VAE	Surfactant	Yes	49.0–51.0	50–400	4.5–6.0	-2
Mowilith® LDM 1265	VA/VC/E	Colloid / Surfactant	No	51.0–53.0	1500–3500	5.0–6.0	10
Mowilith® DC	PVAc	Colloid / Surfactant	No	55.0–57.0	1000–4000	4.0–5.0	41
Scrims							
Vinamul® Elite 25	VAE	Surfactant	Yes	54.0–56.0	50–1000	4.0–5.0	2
Vinamul® Elite 15	VAE	Surfactant	Yes	54.0–56.0	50–1000	4.0–5.0	11
Vinamul® 8801	PVAc	Colloid	Yes	49.5–53.5	3500–5000	4.5–5.5	43
Vinamul® 8482	PVAc	Colloid	No	54.0–56.0	2500–4500	4.0–5.0	41



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