



nEXAR

**FIBER AND
COMPOSITE**

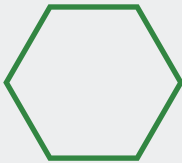
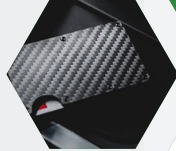
www.nexar-technology.com

NANO
TECHNOLOGY

ADVANCED
INDUSTRIES

R&D
METHODS

MODERN
TECHNOLOGIES



NEXAR is established by Gülhanım Dalan, with the goal of conducting research to improve product quality and production processes in various industries, by using nanotechnology and advanced technologies, and generating value-added results in production.

Our research projects focus on addressing existing problems and needs in the industry; we define our research according to the real needs of industrial and technology companies. We move forward with the principle of ensuring that our research projects are commercially viable.

The nearly quarter-century of business experience of our founder, Gülhanım Dalan, the projects she has carried out, and her consultancy in the field of nanotechnology, guide us in achieving our goals.

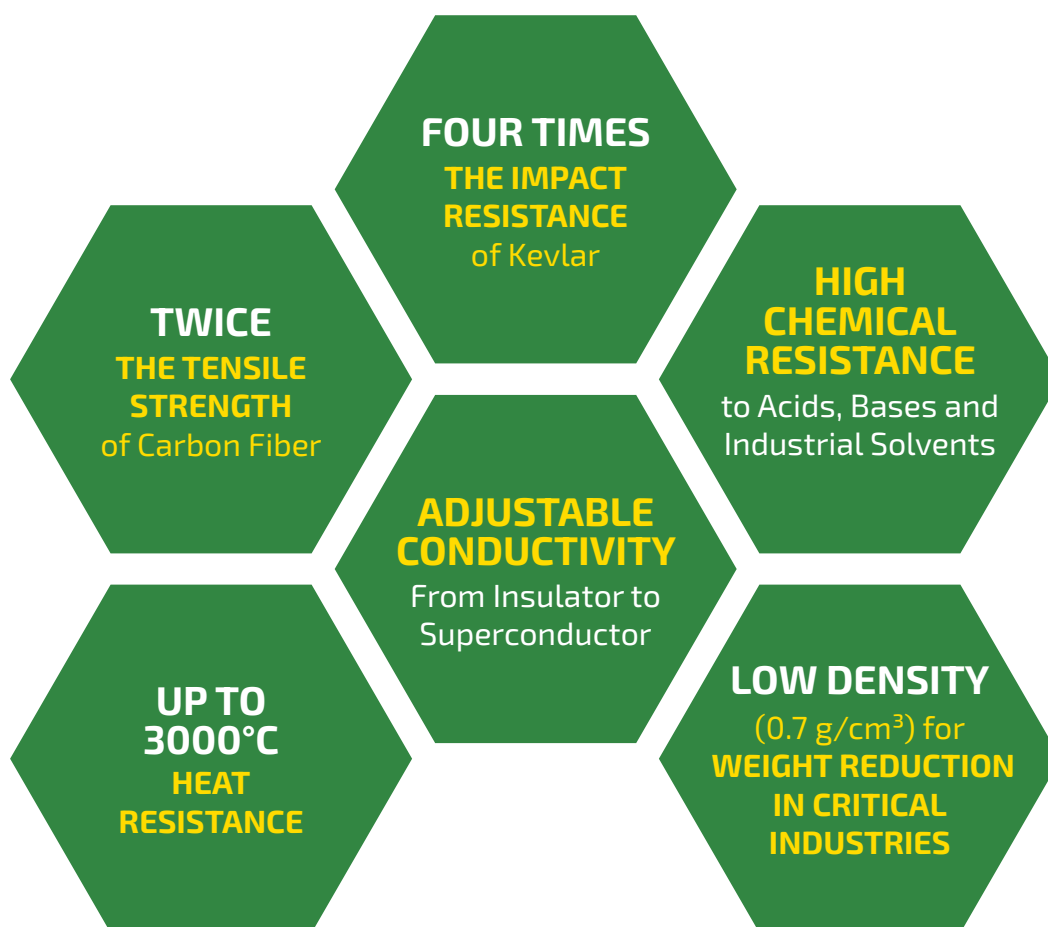
With us, Everything is Possible!

A NEW REVOLUTION IN THE WORLD OF FIBERS AND COMPOSITES

In today's world, developed materials play a key role in the development of various industries. However, traditional fibers such as carbon fiber, Kevlar, and glass fiber, despite their outstanding properties, still have limitations, including high weight, lower strength compared to new materials, high production costs, and limited ability to adjust physical and chemical properties.

Our fiber is the result of cutting-edge research in the field of nanocomposites, addressing many of these challenges and marking a significant step toward replacing heavy industrial materials like steel, aluminum, and titanium.

FEATURES OF OUR FIBERS



WHY USE THIS FIBER?

Using our fiber instead of traditional materials can reduce the weight of structures and industrial components by up to 50%, while significantly enhancing their strength. These advantages lead to increased efficiency, reduced energy consumption, improved safety, and lower maintenance costs across various industries.



WIDE APPLICATIONS ACROSS INDUSTRIES

The fibers and composites produced from them can be used in a wide range of industries, including:

- > **Aerospace Industry (Lightweight, high-temperature, and impact-resistant parts)**
- > **Defense industry (Ultra-light armor resistant to bullets and extreme impacts)**
- > **Automotive Industry (Durable, lightweight, and safe components for electric vehicles)**
- > **Construction Industry (Replacement for steel in high-strength structures)**
- > **Battery & Electronics Industry (Enhanced battery lifespan and performance)**
- > **Marine Industry (High resistance to corrosion and water exposure)**

CUSTOMIZABILITY & FLEXIBILITY

One of the biggest advantages of our technology is that we have full control over the production of these fibers, allowing us to modify their properties based on customer needs. This flexibility enables customers to get a tailor-made product that perfectly fits their requirements without being limited to pre-defined materials with fixed properties.

A FUTURE WITHOUT STEEL & ALUMINUM?

With the advancement of this technology, the world is on the verge of a massive transformation in replacing heavy metals. These fibers and their composite materials are poised to replace many metallic components while maintaining the same strength but with significantly reduced weight and superior performance.

Nexar is a leader in cutting-edge nanocomposite technologies, ready to collaborate with various industries to create a stronger, lighter, and more efficient future.

COMPATIBILITY WITH ALL COMMON COMPOSITE MANUFACTURING METHODS

Our fibers are designed to be compatible with all standard composite production methods, allowing industries to easily integrate them into their existing production lines without major modifications.

COMPATIBLE WITH VARIOUS COMPOSITE MANUFACTURING TECHNIQUES

- › Hand Lay-up
- › Resin Infusion (RTM, VARTM)
- › Hot Press Molding
- › Autoclave Processing
- › Pultrusion
- › Filament Winding
- › 3D Printing of Composites



COMPATIBLE WITH ALL TYPES OF RESINS

Our fibers are fully compatible with all types of polymer resins, including epoxy, polyurethane, vinyl ester, and polyester, delivering high level mechanical and chemical performance when combined with these materials.

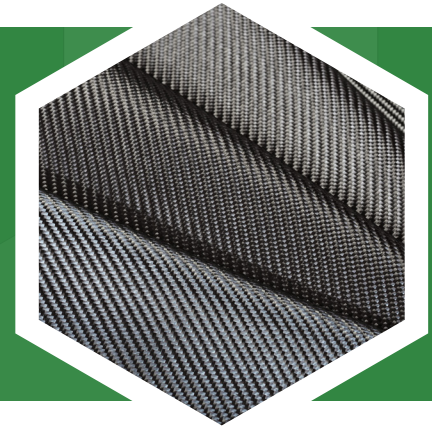
OUR EXCLUSIVE RESINS A REVOLUTION IN THE COMPOSITE INDUSTRY

Our resins are engineered with nanotechnology, offering a new level of performance, durability, and resistance in composite materials. Compared to conventional resins, these advanced resins provide significantly superior mechanical, chemical, and thermal properties, making them the ideal choice for high-performance applications.

KEY FEATURES OF OUR NANO-RESIN

- **Exceptional Mechanical Strength:**
Significantly enhanced impact and stress resistance
- **Superior Chemical Resistance:**
High stability against solvents, acids, and corrosive environmental factors
- **High Level Thermal Resistance:**
Stable performance at extremely high temperatures
- **Excellent Adhesion To Fibers:**
Creating a strong bond between matrix and fibers for optimized composite performance
- **Extreme Durability And Longevity:**
Reduced wear and extended lifespan of composite components

NANO-RESIN AND THE COMBINATION OF OUR FIBERS



These composites, which results from a combination of our nano-engineered resins and high-performance fibers; are exceptionally resistant to stress, impact, chemicals and heat and are one of the best choices in the aerospace, defense, automotive and marine sectors.

This exclusive technology offers composites that can serve as a powerful alternative to traditional metals like steel, aluminum, and titanium.

DATASHEET

Tensile Strength Test	ASTM D2256	Tensile Strength	10.850 MPa
Tensile Modulus Test	ASTM D3822	Tensile Modulus	300 GPa
Elongation at Break Test	ISO 2062	Elongation	1.5%
Fatigue Resistance Test	ISO 14125	Fatigue Strength After 10,000 Cycles	>90% Retained
Flexural Test	ASTM D790	Flexural Modulus	200 GPa
Impact Resistance Test	ASTM D2256	Impact Strength	150 kJ/m ² (4x Kevlar)
Compression Test	ASTM D3410	Compressive Strength	1,500 MPa
Thermal Decomposition (TGA)	ASTM E1131	Decomposition Temperature	>400°C
Heat Resistance Test	ISO 11448	Retained Strength After 85°C for 1,000 h	>95%
Thermal Cycling Test	ISO 14125	Power Degradation After 200 Cycles	<2%
Acid Resistance Test	ISO 175	Power Degradation in 5% H ₂ SO ₄ (72 h)	<5%
Alkali Resistance Test	ISO 175	Power Degradation in 10% NaOH (24 h)	<5%
Solvent Resistance Test	ASTM D543	Power Degradation in Acetone/Ethanol	<2%
Corrosion Resistance Test	ISO 175	No Surface Degradation (Salt Water 72 h)	Yes
UV Resistance Test	ASTM G154	Power Degradation After UV Exposure	<3%
Optical Stability Test	ISO 4892	No Surface Damage After 1,000 h	Yes
Water Absorption Test	ASTM D570	Water Absorption (24 h)	<0.1%
Humidity Resistance Test	ISO 62	Retained Strength in 85% Humidity	>95%
Long-Term Fatigue Test	ISO 14125	Retained Strength After 50,000 Cycles	>85%
Stress Relaxation Test	ASTM D3410	Reduction in Stress After 72 h	<2%
Flame Resistance Test	ISO 15025	Retention Time to Ignition	Up to 5 Hours
Thermal Conductivity Test	ASTM C518	Thermal Conductivity	1000 W/mK
Electrical Conductivity Test	ASTM B193	Electrical Conductivity	10 ⁻⁶ S/m
Abrasion Resistance Test	ISO 12947	Cycles to Failure	1 Million
Fiber Adhesion Test	ISO 14130	Fiber-Mattix Adhesion Strength	50 MPa

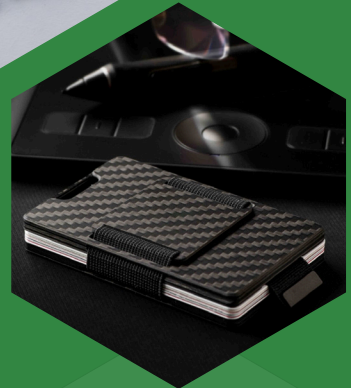


**Leading the Change in
Composite Industry with
Nanotechnology!**





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