



“Makran

Your Reliable Partner for Sustainable Melting”

In times when the price and availability of fossil carbons (coke, anthracite) fluctuate and raw material supply becomes a daily concern for smelting and production units, Makran is here by your side.

With the innovative **pistachio shell bio-carbon** solution, you can:

- Continue your smelting process without worrying about fuel shortages or high fossil carbon costs
- Keep the molten metal quality stable and uniform
- Control carbon material costs
- Benefit from a sustainable and environmentally friendly production path

Makran provides controlled, stable, and industrial-grade carbon to help you melt with ease and peace of mind, while following a green path in the metal industry.

“You melt it, we guard it”

www.makran2025.ir

Info@Makran2025.ir

makran.bazargan2025@gmail.com

+989173352952

HIDDEN CHALLENGES IN THE METALLURGY INDUSTRY

Common Challenges:

- High cost of fossil carbons (coke, anthracite)
- Fluctuating quality of carbon materials
- Impurities such as sulfur and heavy metals
- Pressure to reduce carbon footprint

Keep Calm, Count on **MAKRAN**.

Ask us for sustainable, controlled, and cost-effective carbon



BIO-BASED SOLUTION AND TECHNICAL NATURE OF THE PRODUCT



Pistachio Shell Carbon = Engineered Bio-Carbon

This product:

- Is not a fuel
- Is not a primary reducing agent
- Serves as a controlled carbon source for industrial processes

Technical Nature of the Product:

- Ordinary carbon (Non-Activated)
- Produced through controlled carbonization
- Stable porous structure
- Controlled ash content
- Industrial-grade particle size distribution

Suitable for direct use or in combination with conventional carbons

No chemical activation (suitable for high-temperature environments)

It does not act as the main reducing agent in metal production from ore, but is used as a protective agent against oxidation and to improve the smelting process.

ADVANTAGES OF PISTACHIO SHELL CARBON

Key Features of Pistachio Shell Carbon:

- Stable carbon content suitable for thermal industries
- Low and controllable ash content
- Minimal sulfur and unwanted elements
- Stable behavior at high temperatures
- Uniform particle size distribution
- Bio-based and renewable source

Advantages of the Raw Material (Pistachio Shell):

- Layered and fibrous texture
- Stable porosity after carbonization
- No structural collapse
- More uniform ash compared to some other biomass



Predictable behavior in the furnace



DIRECT APPLICATIONS IN METALLURGY AND FURNACES



Pistachio Shell Carbon can be used as:

- Auxiliary reducing agent
- Carbon additive in the smelting process
- Blending material with coke and anthracite
- Furnace charge composition modifier

Suitable for:

- Induction furnaces
- Crucible furnaces
- Pyrolysis and thermal processes
- Laboratory and semi-industrial units

Especially suitable for small to medium-scale industrial operations

Improved control over reactions and carbon consumption



ECONOMIC AND ENVIRONMENTAL ADVANTAGES

- Reduced dependence on fossil-based carbons
- More competitive pricing compared to some imported sources
- Reduced carbon footprint
- Aligned with industrial ESG policies

Bio-carbon, the future of the metal industry

From a performance perspective, pistachio shell carbon can replace part of fossil carbon.

From an environmental perspective, it does not introduce new carbon into the atmosphere, because the carbon was previously absorbed from the air by the plant.

We consume carbon, we do not create new carbon.



ADVANTAGES FOR RESEARCH & DEVELOPMENT (R&D) UNITS



Pistachio Shell Carbon:

- Process-modifiable
- Suitable for formulation testing
- Customizable particle size distribution
- A foundation for developing new metallurgical products

Pistachio shell carbon is a platform, not just a raw material.



Pistachio shell carbon is a formulation platform that enables adjustment of process characteristics, particle size, and performance for the development of new metallurgical products.

We provide a material your team can build products with, not just consume.

THANK YOU

Advantages of Being Together with Makran

By using pistachio shell carbon:

- Carbon material costs are controlled
- Process quality becomes more consistent
- Supply risk is reduced

Outcome:

Sustainable production + greater supply flexibility

Supply & Collaboration:

- Standard pistachio shell carbon
- Available in industrial volumes
- Suitable for production, smelting, and R&D units
- Continuous supply guaranteed

When used industrially, bio-carbon creates a competitive advantage.



www.makran2025.ir

Info@Makran2025.ir

makran.bazargan2025@gmail.com

+989173352952