

Expanded Graphite & Processed Expanded Graphite

Black magic.

PURITY.
PERFORMANCE.
PASSION.

Expanded Graphite

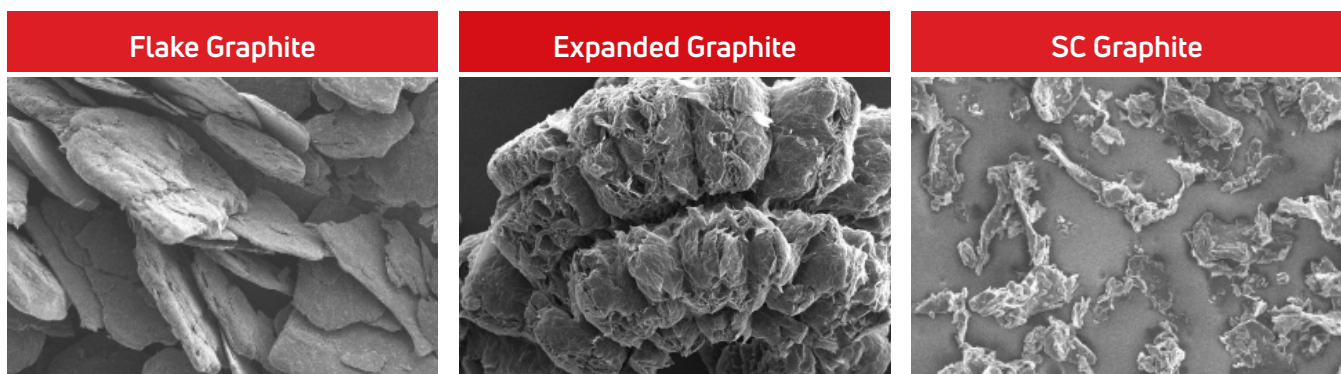
Expanded Graphite powder is produced from purified natural graphite flakes.

In the first step, the graphite flakes are treated with an oxidizing solution, creating an intercalation compound. This compound is then exposed to high temperatures, causing it to expand rapidly.

The result is Expanded Graphite, which consists of light, worm-like structures made of pure graphite. These structures can be mechanically compressed into graphite foil without the use of binders or fillers.

In the final step, this foil is milled to produce Expanded Graphite Powder (SC Graphite).

Depending on the milling process, the powder is available in a variety of particle sizes, ranging from fine to coarse, to suit different applications..



Our expertise

Graphit Kropfmühl is a leading manufacturer of exclusive Natural Graphite and known for our extensive expertise and commitment to quality. Our focus on environmental sustainability is demonstrated through our eco-friendly, highly automated production processes designed for optimal efficiency.

Additionally, we understand that every customer has unique needs, which is why we offer the flexibility to adjust all product parameters according to your specific requirements.

Key Material Properties of Expanded Graphite

- **Excellent electrical conductivity**

Thanks to its unique layered structure, Expanded Graphite offers outstanding electrical conductivity. It is ideal for conductive coatings, electrodes, and electronic components, ensuring reliable and consistent performance.



- **High thermal conductivity**

With superior heat transfer capabilities, Expanded Graphite enables rapid and uniform heat distribution. It is the material of choice for efficient thermal management in electronics, energy systems, and industrial applications.



- **Effective electromagnetic shielding**

Expanded Graphite acts as a strong barrier against electromagnetic interference (EMI). By absorbing and blocking EMI, it protects sensitive components and ensures signal integrity.



- **Lightweight with a large specific surface area**

Its low density and high surface area make Expanded Graphite ideal for energy storage, filtration, and composite applications — wherever surface interaction matters.



- **Environmentally friendly and sustainable**

Expanded Graphite is a green material, produced in an environmentally responsible way. It is non-toxic, free from heavy metals and halogens and fully aligned with modern sustainability standards, contributing to eco-conscious innovation.



Expanded Graphite is also chemically inert, corrosion-resistant, flexible and oxidation-resistant — making it a reliable and safe solution for a wide range of uses.

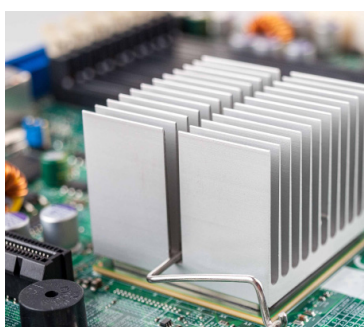
Applications

Expanded Graphite is a multifunctional material used in a wide range of industries. Its exceptional thermal and electrical conductivity makes it an ideal component in battery systems and energy storage technologies.

In the plastics and rubber industry, it enhances the performance and longevity of coatings, plastic foils, and rubber compounds. In thermal management, it is used to produce graphite foils for heating and cooling systems, ensuring efficient and reliable heat dissipation.

Thanks to its chemical inertness and high heat resistance, Expanded Graphite is also a key material in industrial sealing systems and high-temperature applications.

Whether in energy, mobility, electronics, or manufacturing, Expanded Graphite delivers innovative, high-performance solutions that meet the demands of modern industry.



Heating and cooling systems

Heat-conductive graphite is used as a functional additive to improve thermal and electrical performance in demanding environments. It offers key advantages:

- Prevention of thermal hot spots
- Efficient dissipation of heat via housings or cooling elements (e.g. LEDs)
- Enhanced conductivity and heat resistance
- Reduced electrical resistance in plastics, avoiding electrostatic charges



Conductive masterbatches, coatings & dispersions

Graphite is used as an advanced additive in plastic compounds and dispersions to enhance both electrical and thermal performance. Key benefits include:

- Improved conductivity for efficient heat dissipation and electrical functionality
- Lightweight, corrosion-resistant and cost-effective production of complex parts
- Reduced electrical resistance to prevent static buildup and increase safety

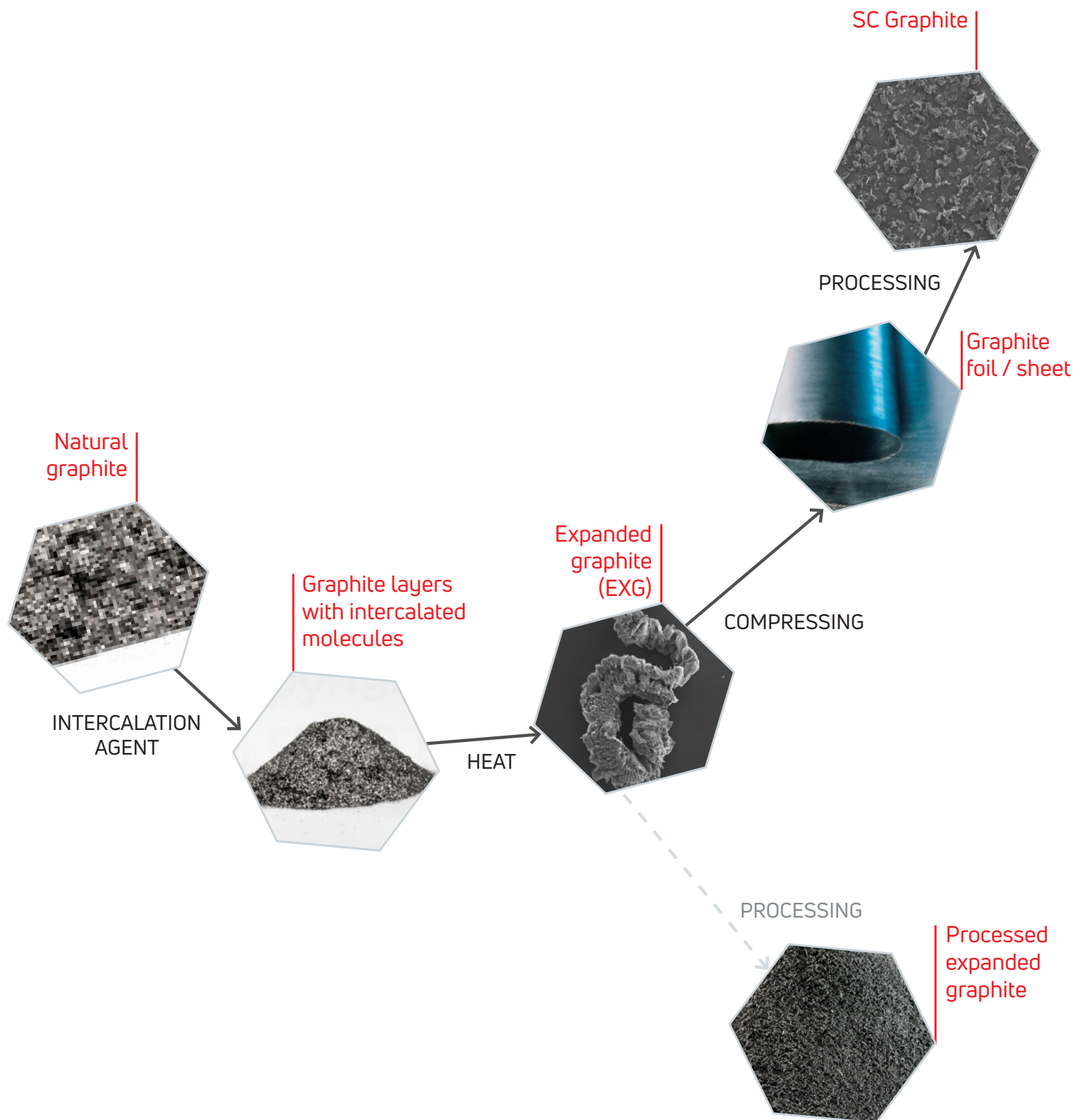


Energy storage and battery systems

Expanded Graphite plays a vital role in modern energy systems, particularly in fuel cell and battery technologies. Its properties support both performance and process efficiency:

- Excellent electrical conductivity ensures efficient current collection in bipolar plates
- Reliable heat dissipation enables stable and controlled temperature management
- Easy compounding allows cost-effective and consistent extrusion of bipolar plates

Steps in the production of Expanded Graphite





Graphit Kropfmühl GmbH
GK, a Division of
Asbury Advanced Materials
Langheinrichstr. 1
94051 Hauzenberg
Germany
Phone +49 (0) 8586 609-115
sales@gk-graphite.com

www.gk-graphite.com