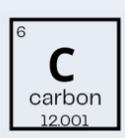


Carbon and Graphite

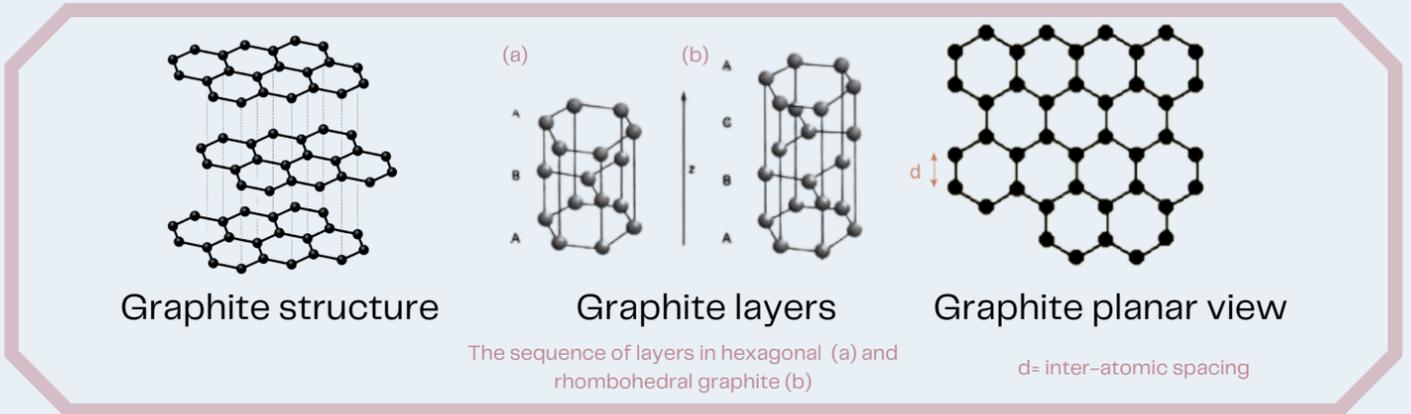
General Information

What is Graphite?

Almost all of us have had it in our hands at some time or another, mostly in the form of a pencil: Graphite. The term "graphite" is derived from the Greek "graphein" which means "to write".



Graphite is a crystalline form of Carbon element, with its atoms arranged in a hexagonal structure and it is not hazardous.



Types of Graphite

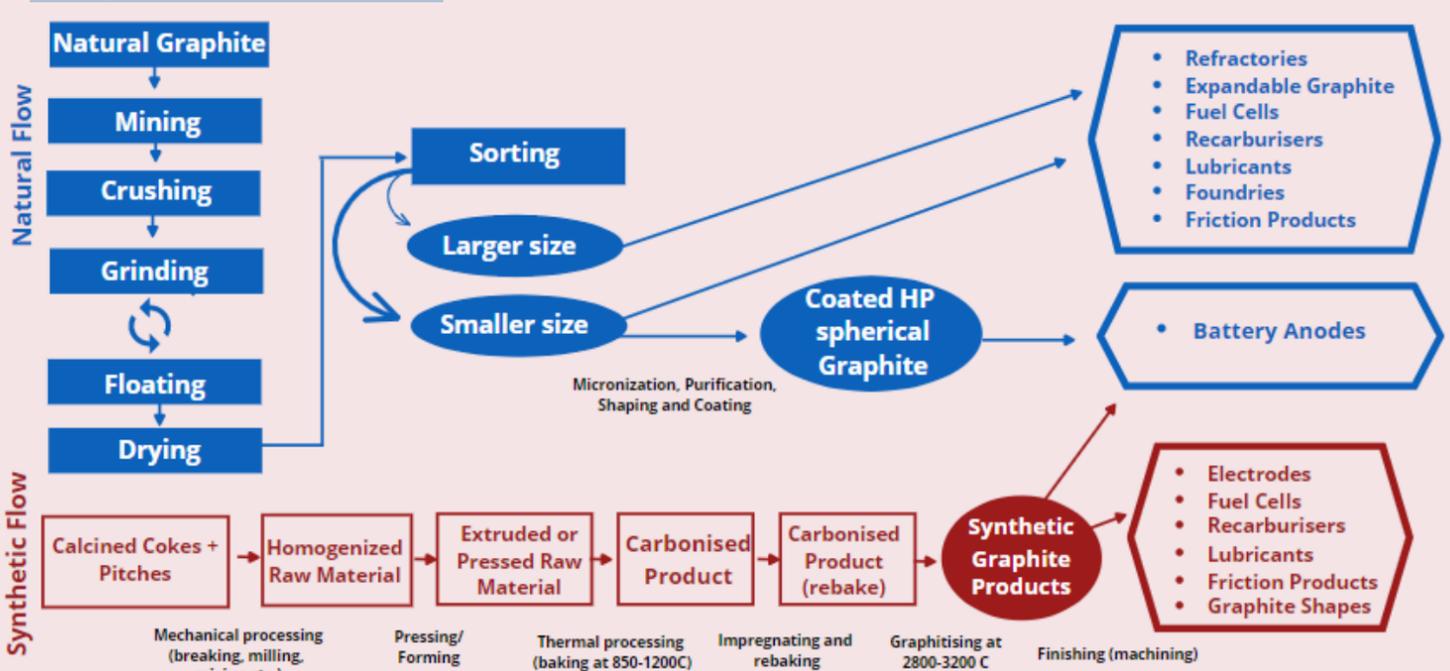
Graphite Market

Natural Graphite

Synthetic Graphite

Amorphous Graphite	75-90% carbon content
Vein Graphite	90 + % carbon content
Flake Graphite	80-99,9% carbon content

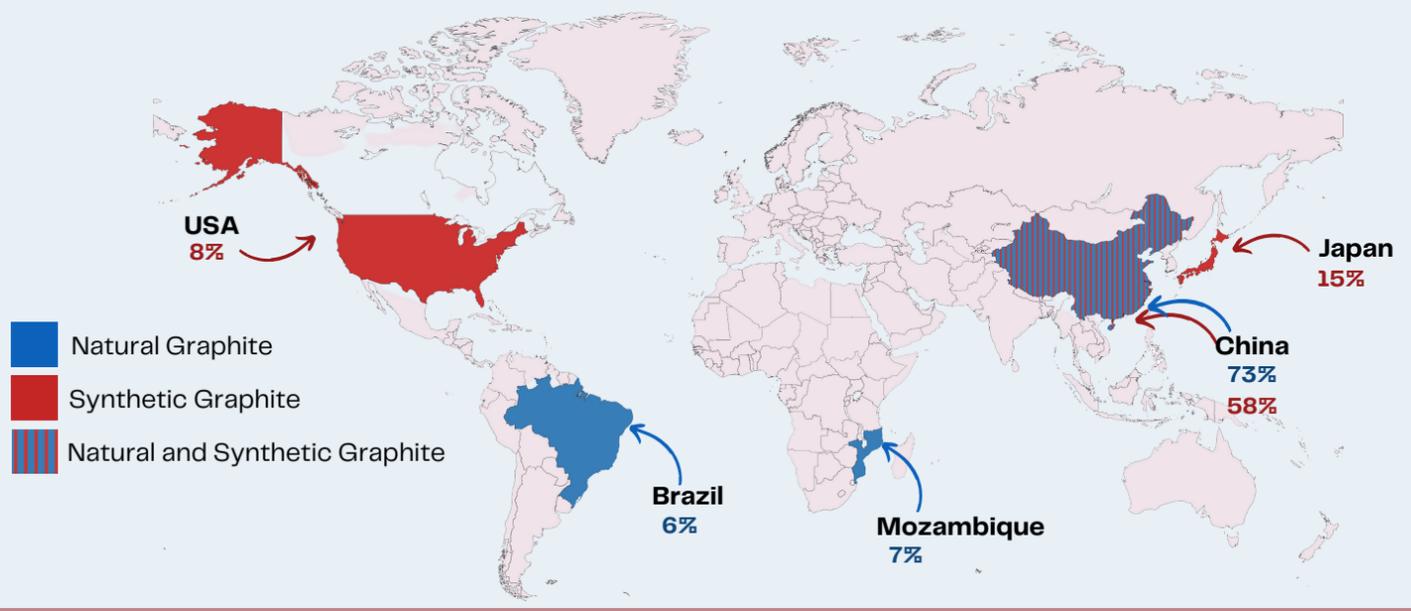
There are two forms of graphite used in the world today, synthetic and natural. Graphite (natural and synthetic) can be processed: die-molded, extruded, isostatic pressed, expanded, reinforced and coated. It can be transformed into yarns, foils and sheets, tapes, boards, rigid and soft felts, powders and fibres.



source: Battery Materials Review

Graphite deposits and production

Top 3 producers of natural and synthetic graphite in 2021



What about Europe ?

	Production*	Consumption*
Natural graphite	2%	9,5%
Synthetic graphite	5%	

The concentration of graphite production and processing in China leaves the EU vulnerable to supply chain disruptions.

source: Wood MacKenzie, Graphite market 2021 outlook to 2050

*for year 2021

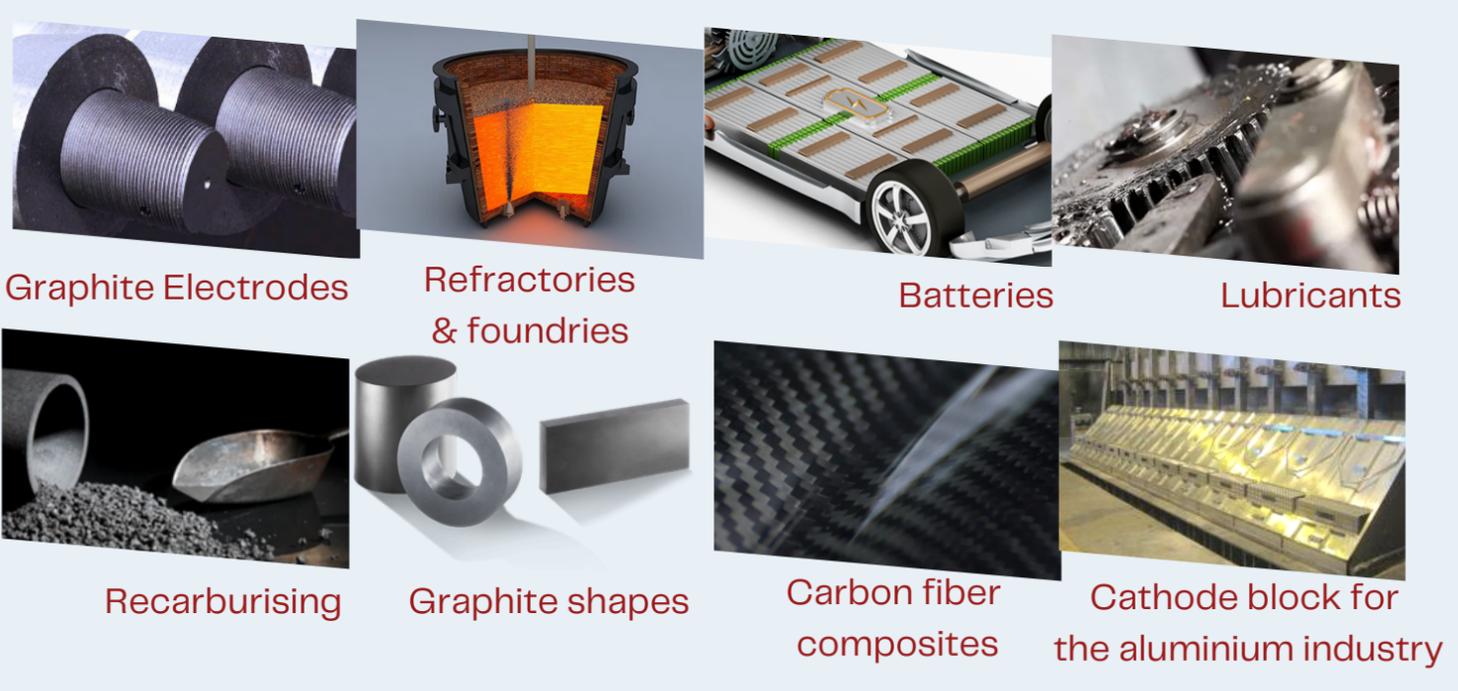
Carbon and Graphite properties

Graphite conducts heat and electricity very well, maintains its strength to temperatures of 2,600°C and is corrosion resistant. Graphite is one of the lightest of all reinforcing agents and has high natural lubricity.



Carbon and Graphite applications

Traditional demand for graphite today is largely tied to the steel industry but we witness increasing Graphite demands from growing market applications.



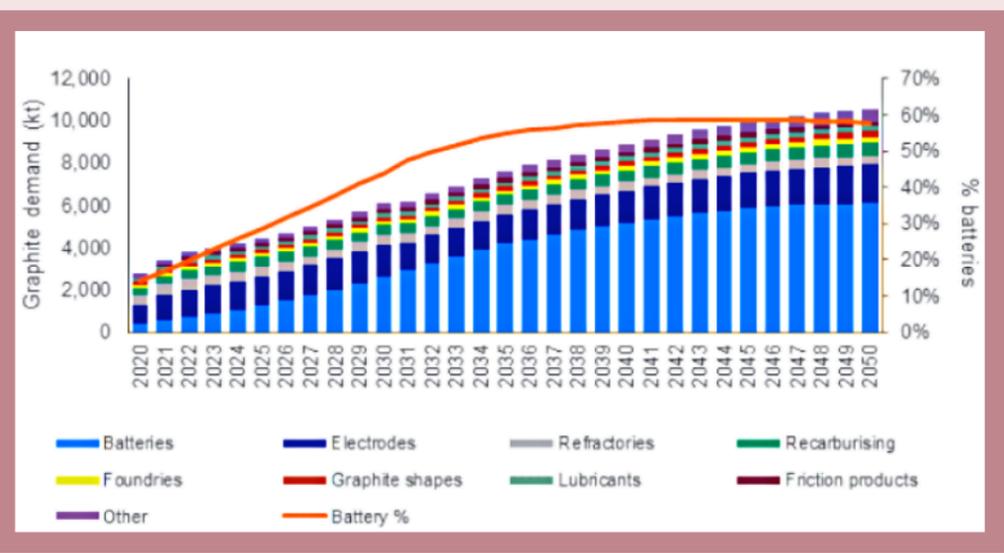
Carbon and Graphite demand



According to the World Bank graphite demand will increase by **500%** between 2018 and 2050

source: World Bank Group, Minerals for Climate Action

Graphite demand by application



source: Wood MacKenzie, Graphite market 2021 outlook to 2050

Sustainability



For European Carbon and Graphite Producers, sustainability is an integral part of the business strategy. We provide advanced material solutions shaping a better and more sustainable future and we protect people, nature and the climate in manifold ways.

Graphite is an enabler of sustainable solutions:



- Semiconductors
- Renewable Energy
- Lightweight Construction
- Energy storage incl. lithium ion batteries
- Fuel Cells