

H.C. Carbon GmbH

**Technology
Products
Application**



H.C. Carbon

Our experience – your advantage

Location: Bavaria; Middle Franconia



H.C. Carbon

Our experience – your advantage

Company profile

H.C. Carbon GmbH

- is a specialist in the fields of layered materials and dispersion specialties and has an experience of more than 30 years in the production and application of these products;
- is developing, producing and selling these products;
- is offering the possibility to supply you with new customized products based on patented production technologies and specific know how;
- offers solely protected or exclusive products with significant properties (brand name MECHANO).



H.C. Carbon

Our experience – your advantage

Product refining of HCC

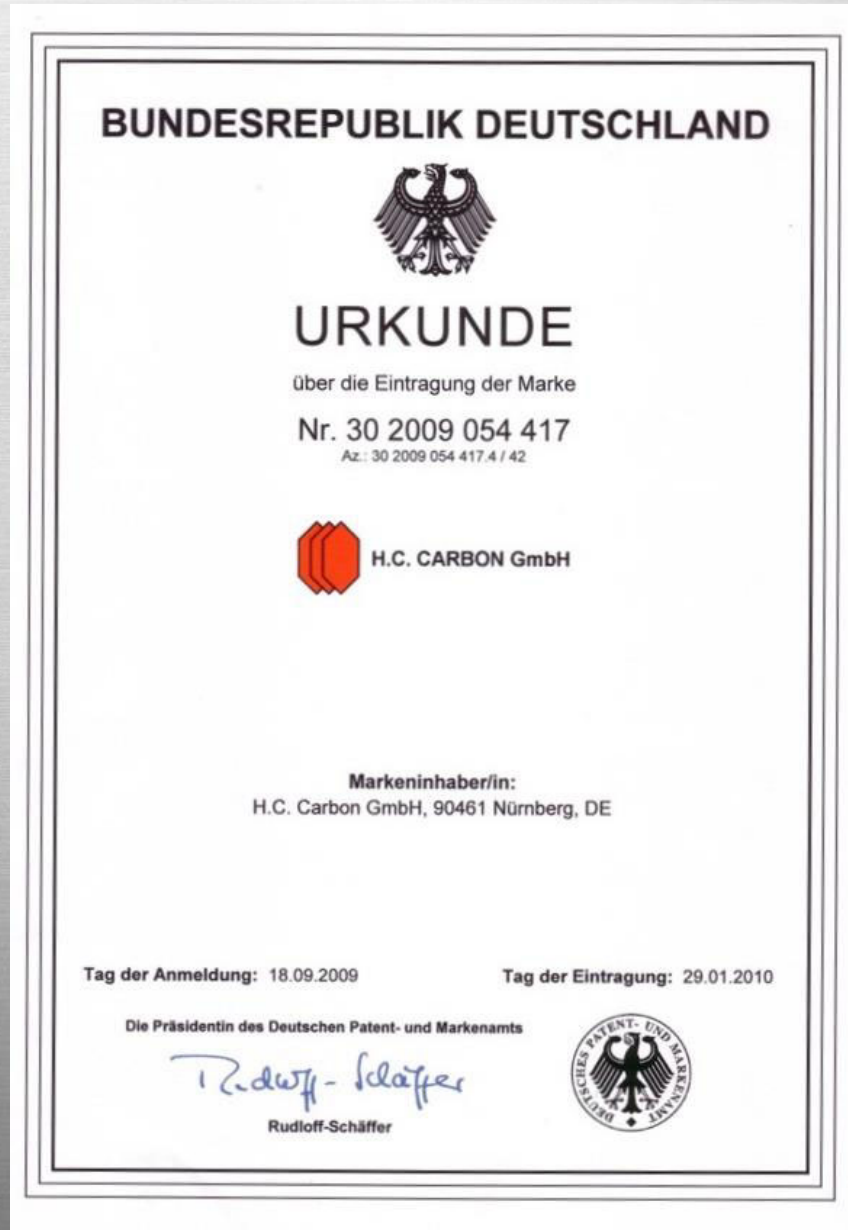
- Natural graphite (Powder and Dispersions)
- Artificial graphite
- Carbon Black (Beads and Dispersions)
- Hexagonal Boron Nitride HBN (Powder and Dispersions)
- Synergy products based on these materials



Corporate Identity and HCC brands

Logo and brand name are registered trade marks.
Below our registered trade marks:

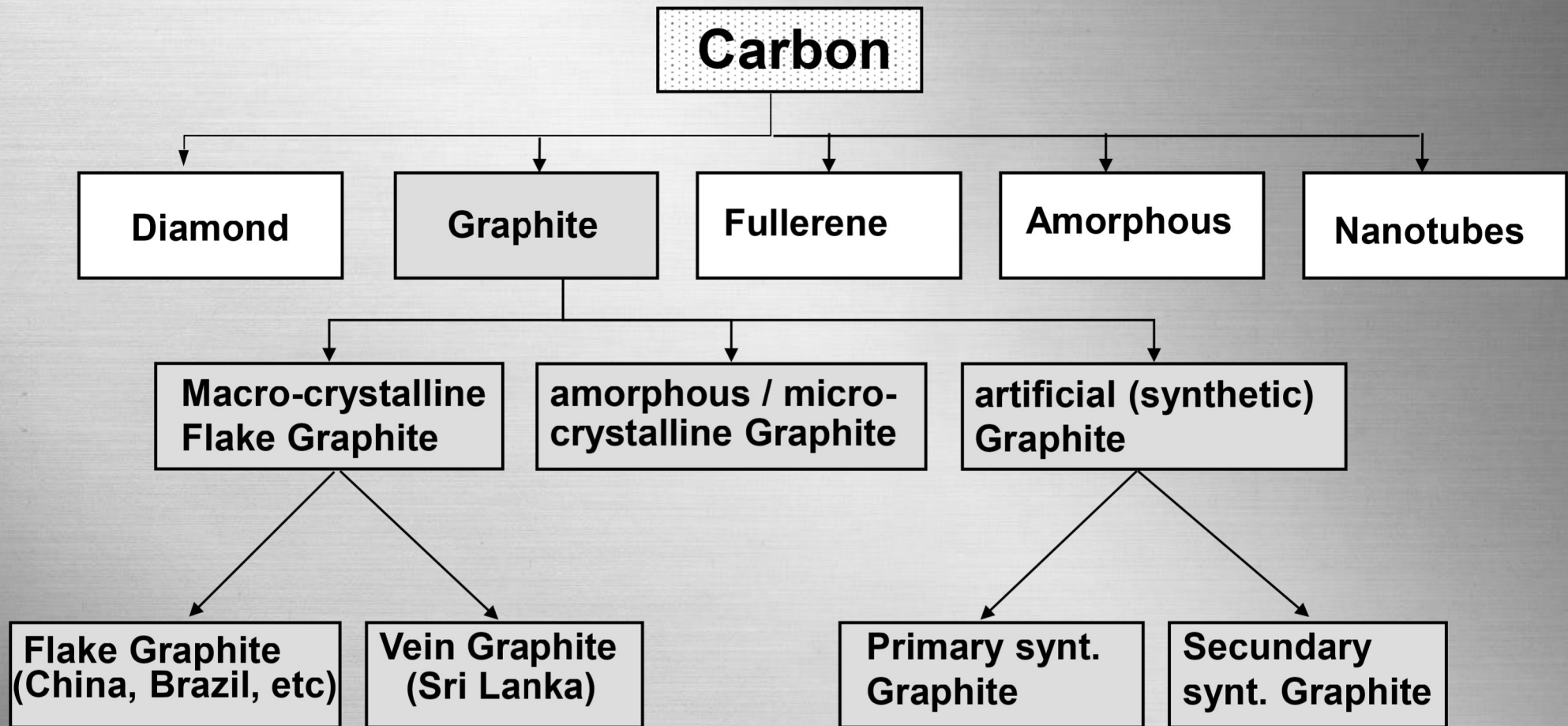
MECHANO-COND®
MECHANO-LUBE®
MECHANO-CAP®
MECHANO-PRO®
MECHANO-COOL®
MECHANO-REM®
MECHANO-SORB®
MECHANO-Design®



H.C. Carbon

Our experience – your advantage

We are familiar with graphite. Benefit from our graphite experience.



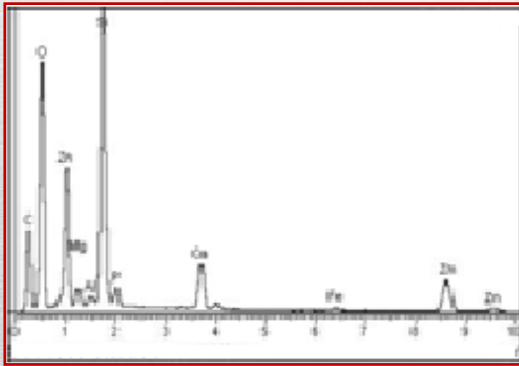
There are sub groups regarding other carbons. In this slide we refer just graphite as an example.



H.C. Carbon

Our experience – your advantage

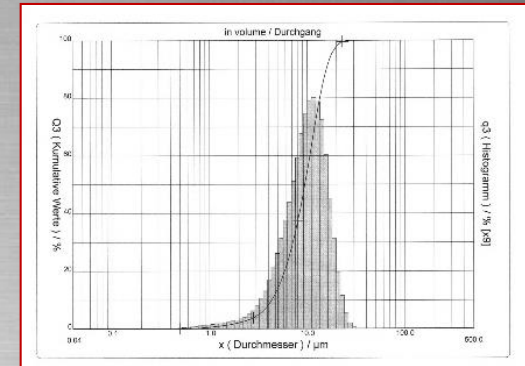
HCC Technology – what we can change



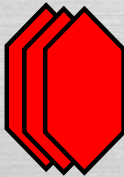
Purity



Crystallinity

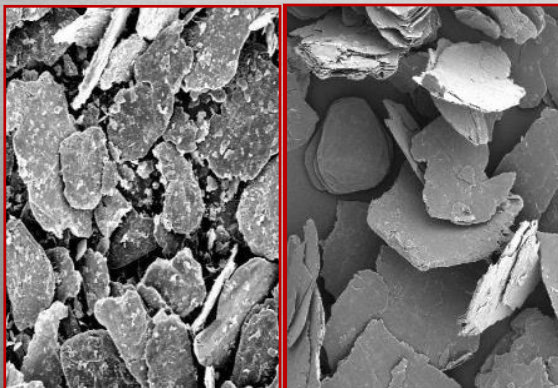


Particle size

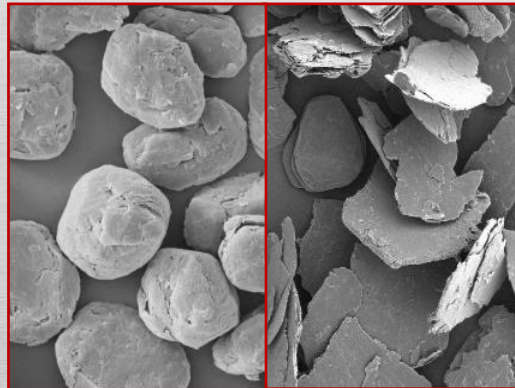


The HCC Technology can shift or change all of this parameters.
We are manufacturing customized products.

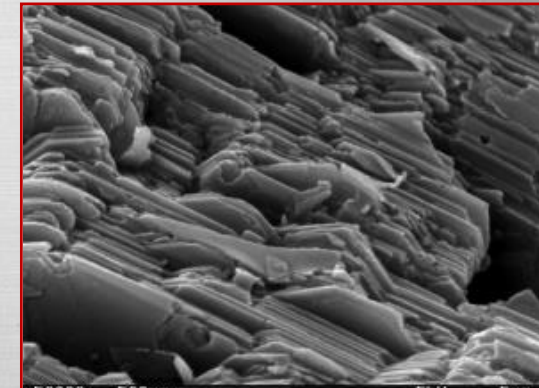
Surface



Particle shape



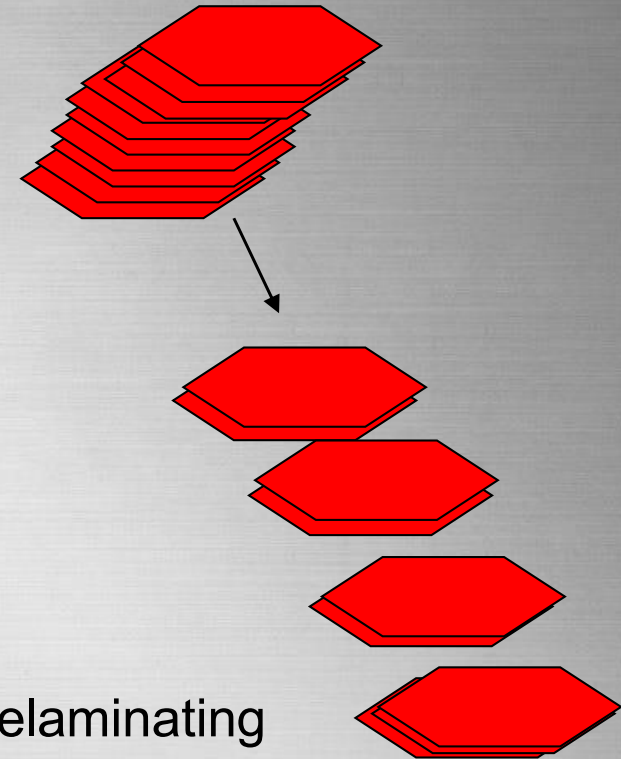
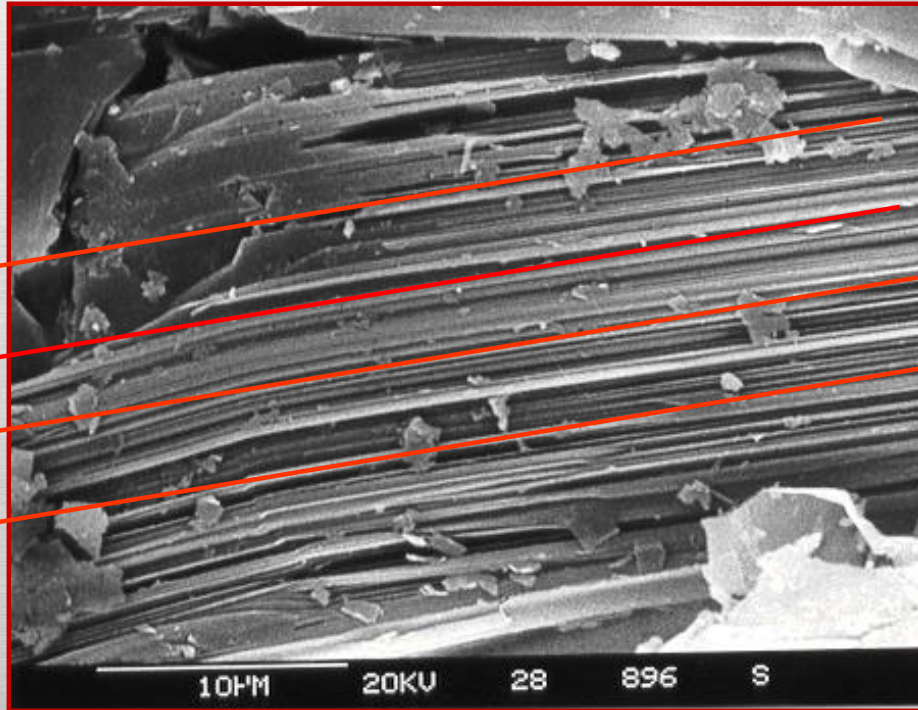
Porosity



H.C. Carbon

Our experience – your advantage

Delaminating of graphite (schematic). Advanced method



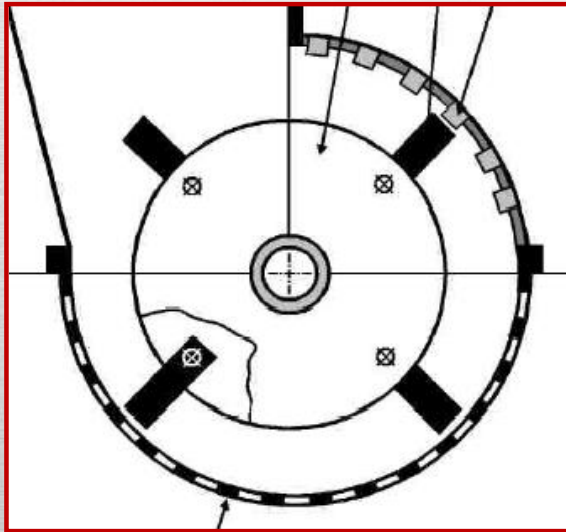
H.C. Carbon has developed a special method for delaminating layered minerals. Breakdown big stacks into small stacks, increasing aspect ratio and enhancing electrical and thermal conductivity as well as other properties.



H.C. Carbon

Our experience – your advantage

MECHANO-DESIGN® and HCC-dispersion technology



The HCC technology offers totally new ways for high tech dispersions and particle design. Some of our methods are protected by patent applications.

We apply high mechanical shear forces and/or cavitations forces.

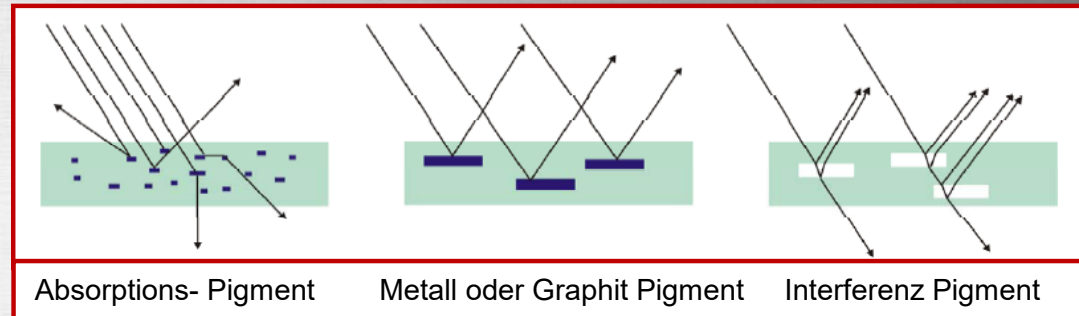
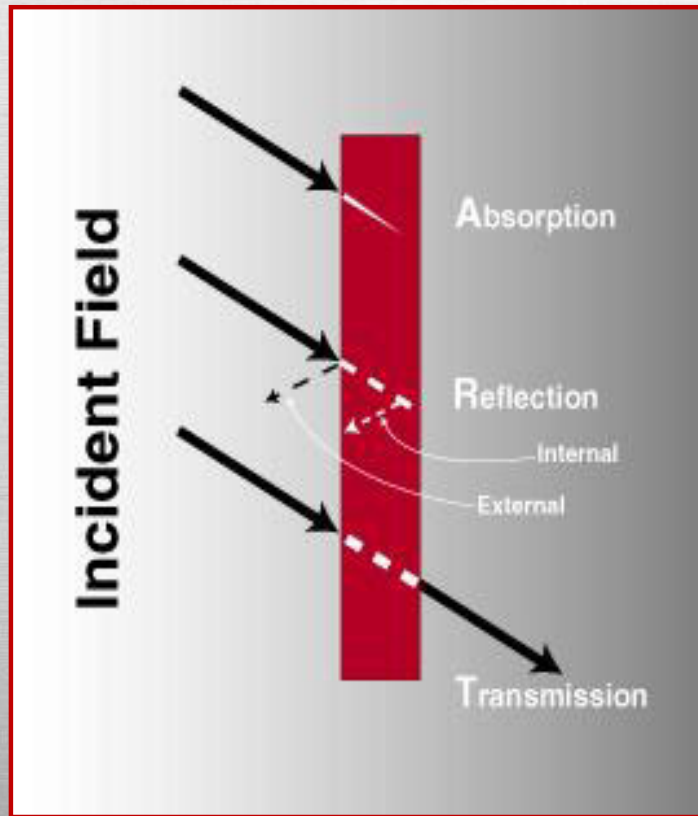
Result: Spherical products made from platelet raw materials and stable dispersions.



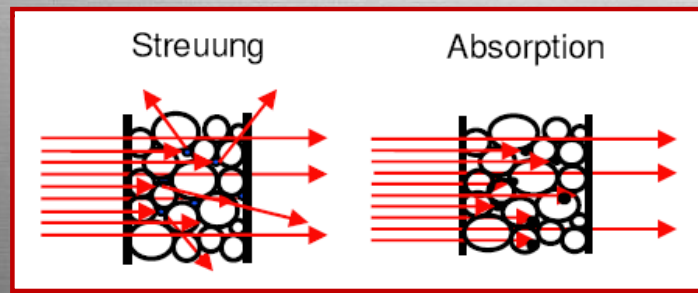
H.C. Carbon

Our experience – your advantage

Absorption and reflection



Graphite is shielding a variety of electromagnetic wavelengths. Incorporated in different materials special treated graphite can act as an absorber or reflector. Graphite is commercially used as an infrared reflector in the thermal insulating materials.



H.C. Carbon

Our experience – your advantage

Carbon and Boron nitride dispersions

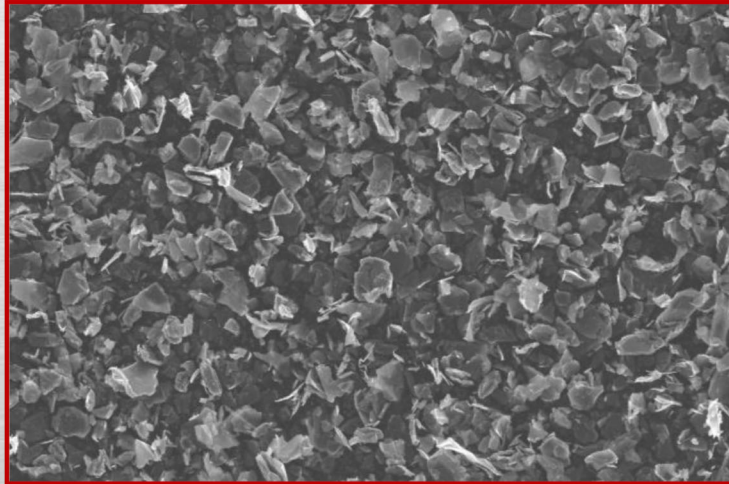
- A special developed method for the production of carbon dispersions in different liquids with high solid content
- We are focused on water based dispersions
- Combination of graphite with other fillers
- We adjust the additives to customers requirements
- Particle size from 50 μ m down to nano scale
- Special dispersions for printing inks.



H.C. Carbon

Our experience – your advantage

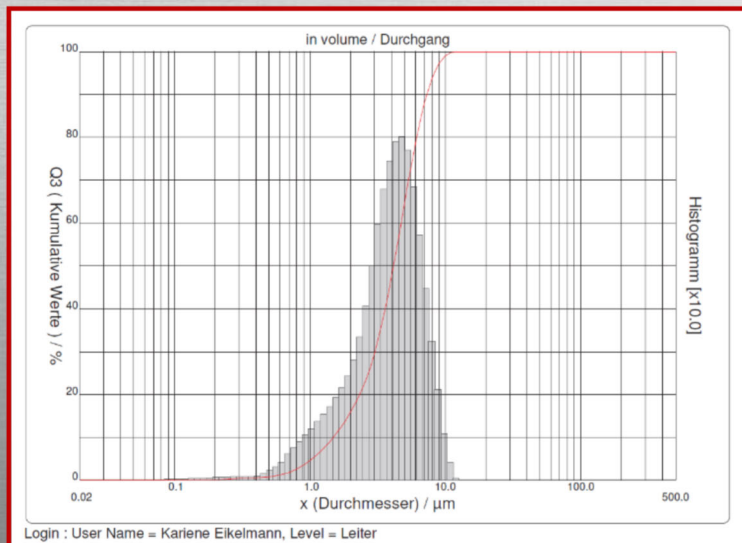
MECHANO-LUBE® 1



Natural graphite with very sharp particle size distribution and high purity, Special for lubricants and glide aid.

Features:

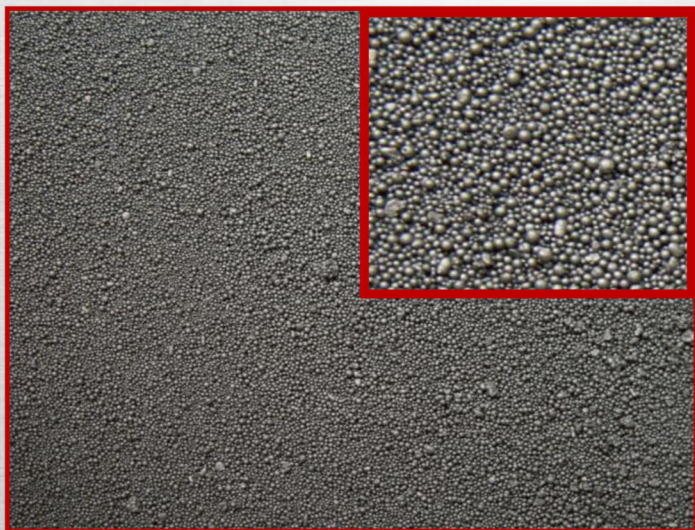
- Special grinding to protect the platelet shape
- High purity
- High aspect ratio
- Sharp particle size distribution



H.C. Carbon

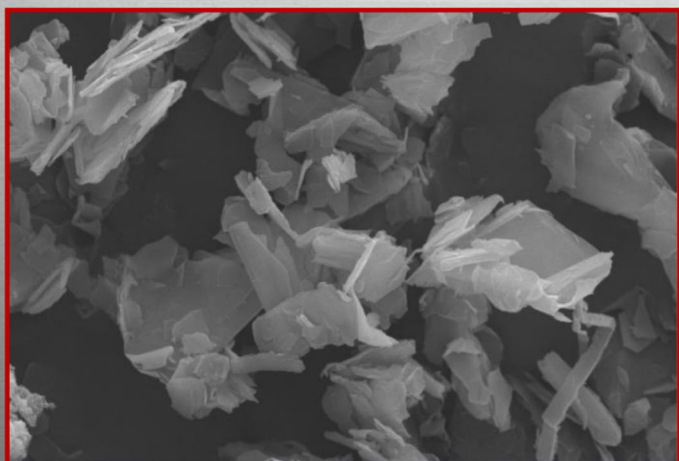
Our experience – your advantage

MECHANO-LUBE® 4G2



Graphite/Carbon Black pearls. Reduced dust formation, outstanding flow ability and handling behavior. Compatibility with most of systems (polymers, solvents, water based systems). Patent pending

MECHANO-COND® 1



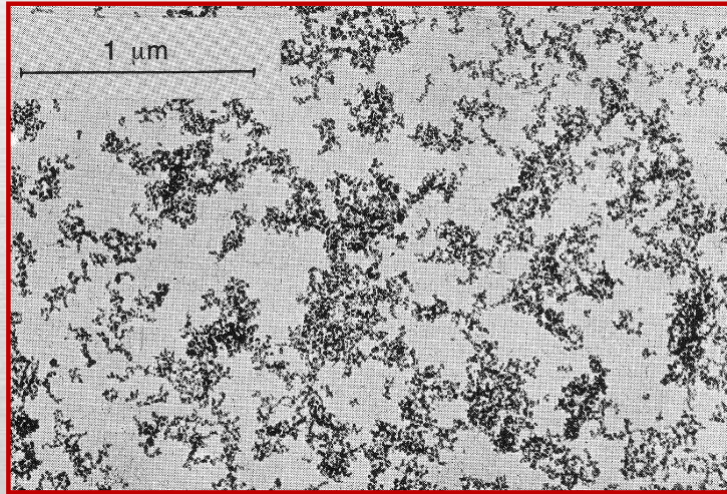
Partly delaminated and purified natural graphite. Additive for battery systems and coatings to improve the electrical and/or thermal conductivity.



H.C. Carbon

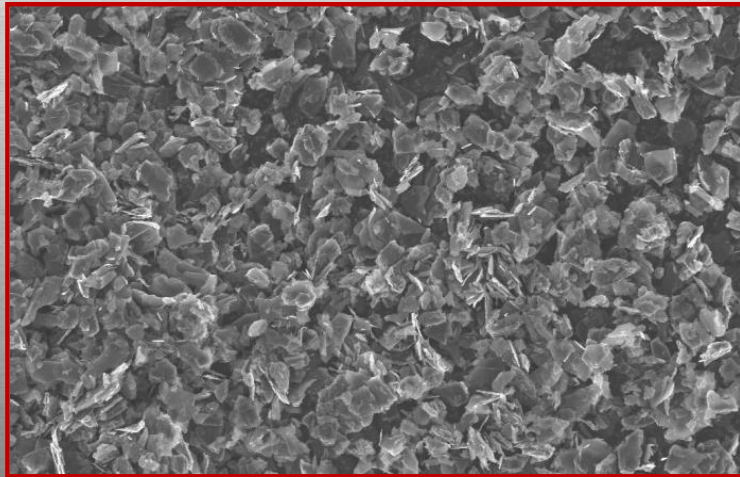
Our experience – your advantage

MECHANO-COND[®] 5VP3



Electrical conductive carbon black with low porosity and low DBP figure. Due to its unique morphology and surface allows easier processing and less affecting the rheological properties of polymers or liquids.

MECHANO-LUBE[®] 2



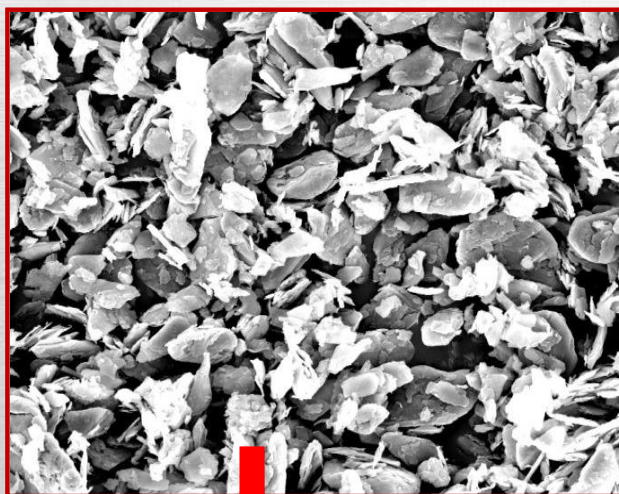
Natural graphite ultra fine with parts of submicron particles. One of finest graphite with platelet structure and low specific surface area on the market.



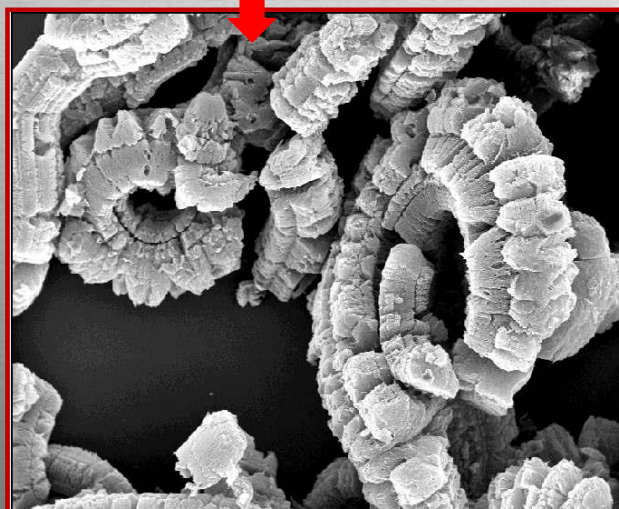
H.C. Carbon

Our experience – your advantage

MECHANO-PRO®



Temperature



Graphite intercalation compounds (expandable graphite) expand 150 times by volume when exposed to heat.

Fire retardant (intumescent layer formation) synergy effect with other flame retardants.

Contains no halogens and heavy metals!

Can reduce common flame retardants.

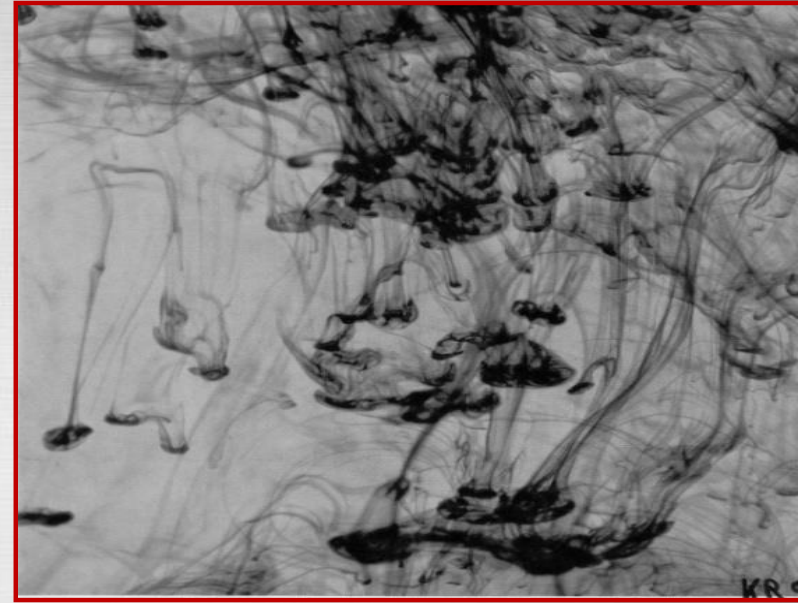
Provide the optimum intumescent performance for fire retardant barriers, putties, foams, fibers or plastics.



H.C. Carbon

Our experience – your advantage

MECHANO-LUBE® 1M...



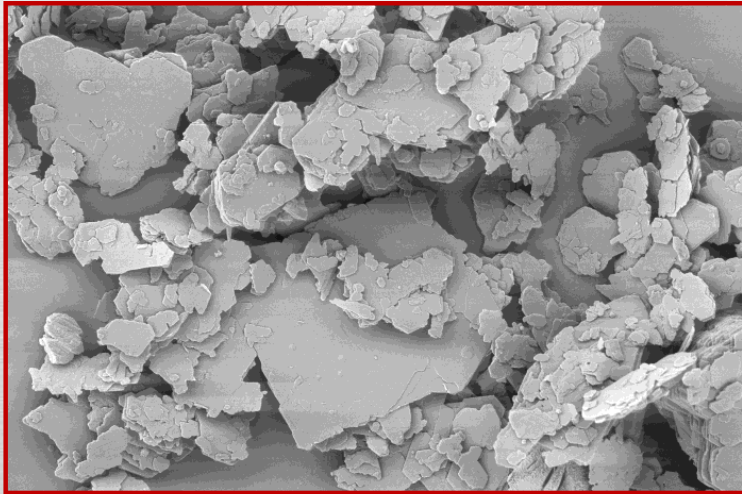
Mould releasing agent and lubricant
in Instant-form. All additives for hot
metal forming are incorporated.
Special for forging shops and seamless
tube producers. Only adding
Water and stirring at the end-user.



H.C. Carbon

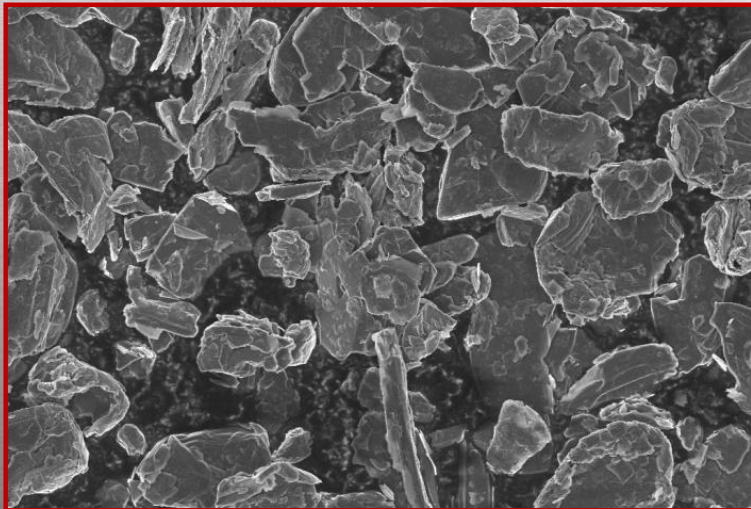
Our experience – your advantage

MECHANO-COND® 6...



Hexagonal boron nitride (HBN), HBN is applicable for high thermal conductivity without electrical conductivity. For high temperature lubrication in oxidizing environment.

MECHANO-REM® 5



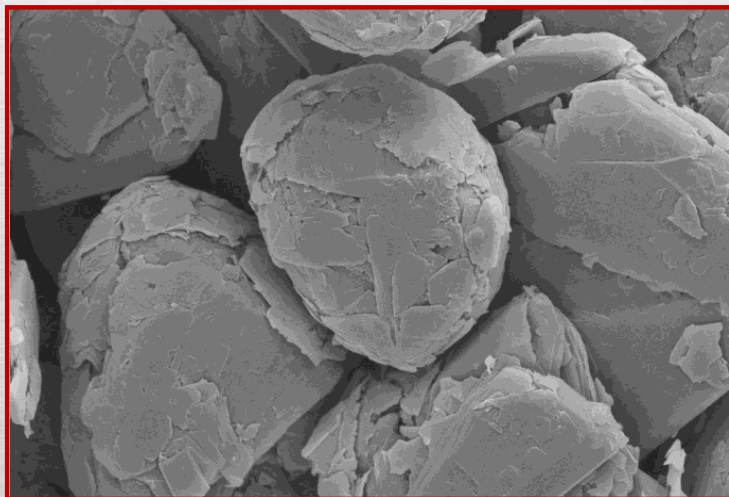
Special carbon with platelet structure but no graphite structure. Replacing graphite in a variety of applications especially as IR-blocker und diffuser in insulating systems for buildings.



H.C. Carbon

Our experience – your advantage

MECHANO-CAP® 1P1



Spherical graphite. Produced in accordance with HCC MECHANO-DESIGN® -method. Graphite with very high bulk- and tap-density. For electro chemical systems and where higher filler content is required.

MECHANO-LUBE® 6D1



Water based boron nitride dispersion. Lubricating, cooling and mould releasing liquid. Heat resistance over 1000°C

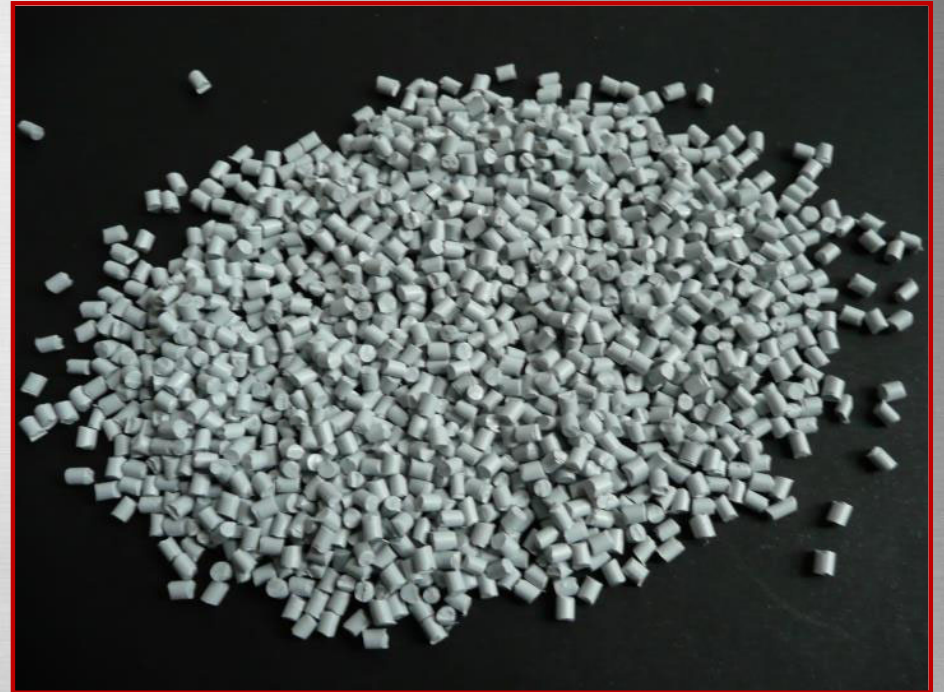


H.C. Carbon

Our experience – your advantage

MASTERBATCHES and COMPOUNDS

We can provide master batches or compounds on request containing our products



H.C. Carbon

Our experience – your advantage

MECHANO-LUBE® 1VP...



Water based graphite dispersion for the hot metal forming process. Cooling- releasing- and lubricating-fluid.

Formulated to assure excellent lubricity and efficient die filling



30% solid content.

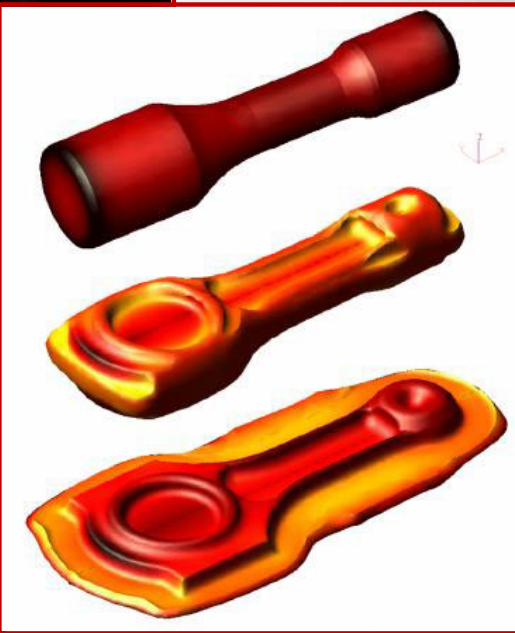
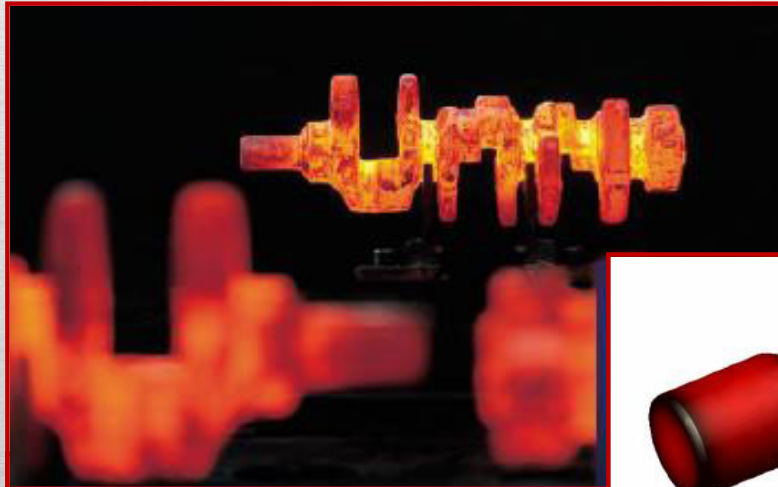
Faster wetting, higher dilution ratios, excellent adhesion on hot surfaces.



H.C. Carbon

Our experience – your advantage

MECHANO[®]-Products for hot metal forming



As lubricant releasing and cooling liquid. HCC supplies dispersions with high solid content as well as instant powder. Customer is adding the water right before use.

Result: Reduced tool wear and longer die life.
Cost savings up to 40%



H.C. Carbon

Our experience – your advantage

MECHANO[®]-Products for polymers and inorganic materials



Building Insulation



Conductive tubes and hoses



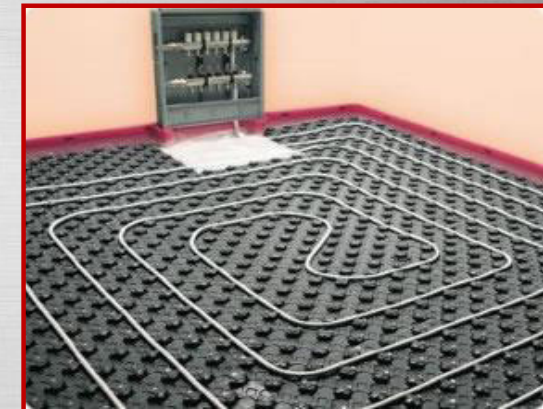
Gear parts with self lubrication



Conductive foils



Diffusions tight bottles



Thermal conductivity and reinforcing.

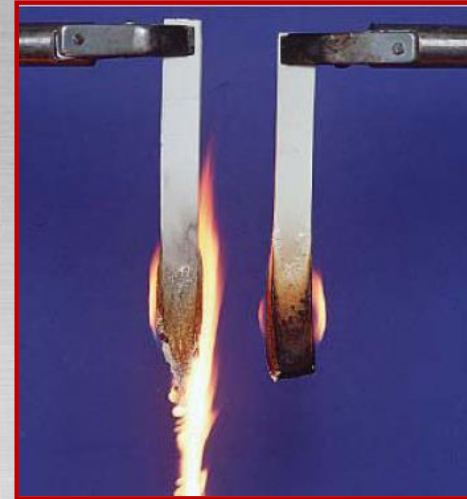


H.C. Carbon

Our experience – your advantage

MECHANO-COND® 6... for Polymers

- Our MECHANO-COND®6 range can be used as flame retardant
 - Reduced burning droplets
 - Synergy effect with other flame retardants
-
- MECHANO-COND®6 is used to improve thermal conductivity while maintaining electrical insulation
 - Heat sinks
 - LED light bulbs
 - Heat dissipation materials



H.C. Carbon

Our experience – your advantage

Carbon dispersions for conductive coating

Battery can coating and cap coating

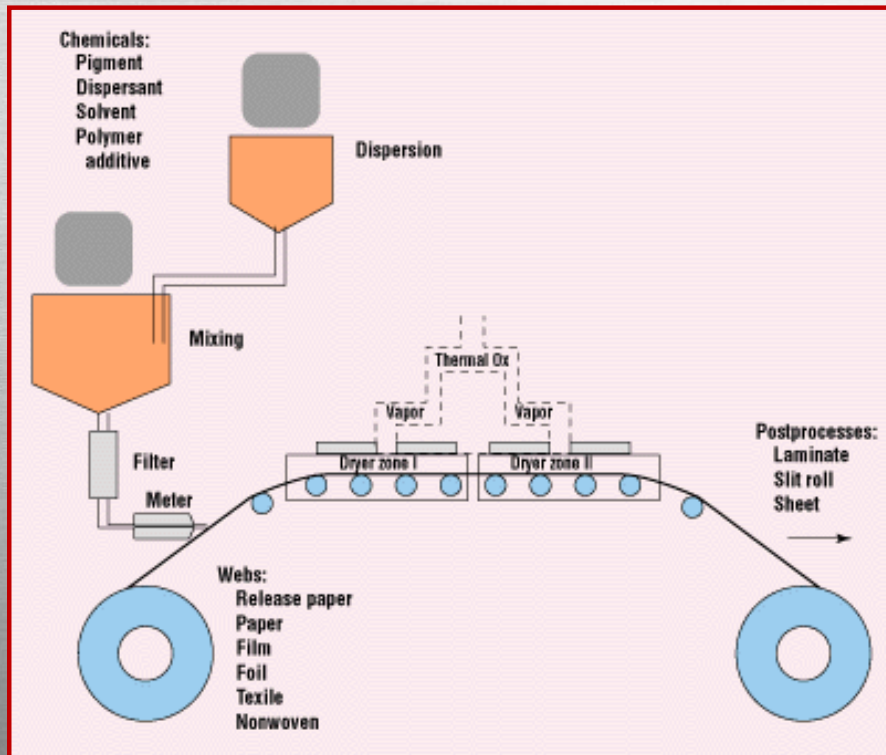


H.C. Carbon

Our experience – your advantage

Carbon dispersions for conductive coating

Conductive foil coating



Conductive coating bipolar steel plate



H.C. Carbon

Our experience – your advantage

Carbon dispersions for conductive coating

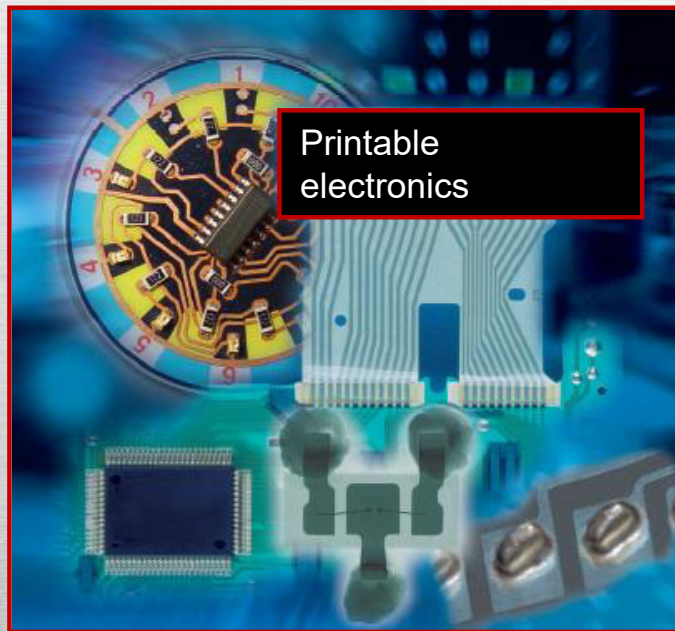
Conductive floors and conductive adhesives fibers etc.



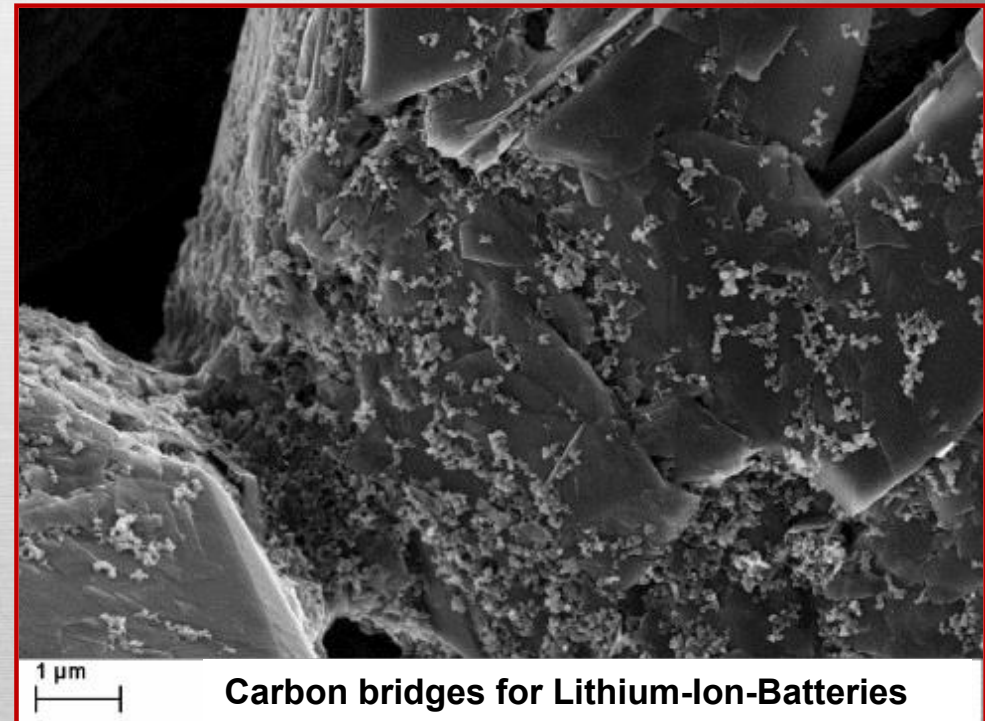
H.C. Carbon

Our experience – your advantage

Thermal and electrical management



Graphite
Boron nitride
Carbon black



H.C. Carbon

Our experience – your advantage

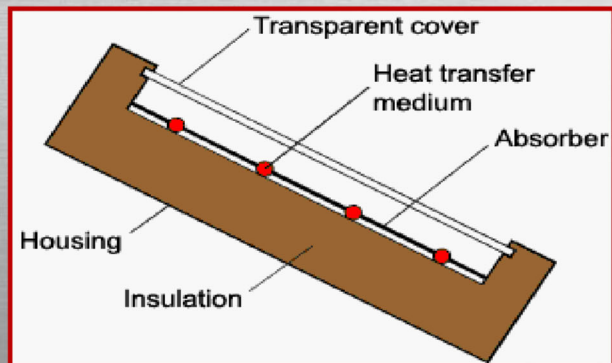
MECHANO®-Products for lacquers paints and coatings



Antistatic paints, shielding-coatings, corrosion protection



Antistatic fibers and adhesives



Sunncollectors:

Conductivity, Absorption



Heatexchangers:

Conductivity,
Corrosion protection



Social lacquers:

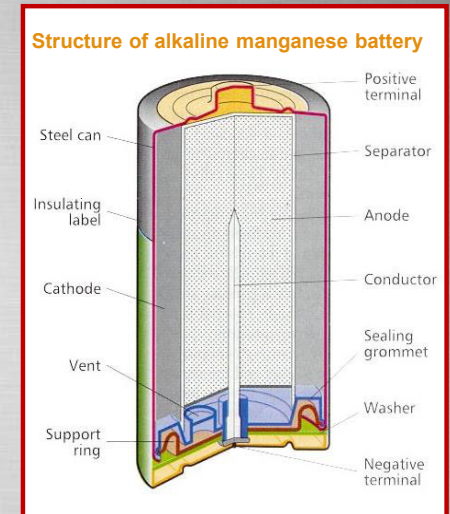
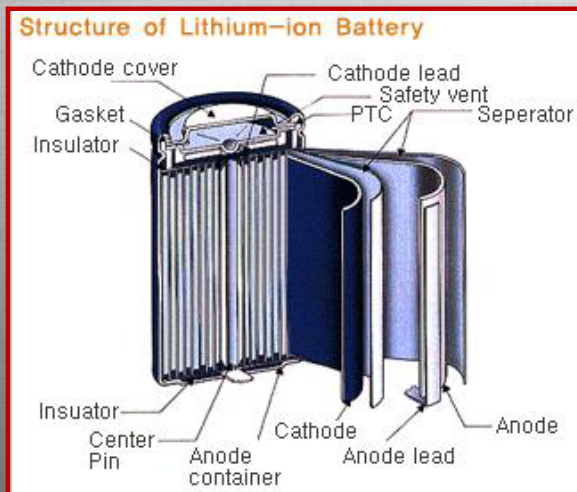
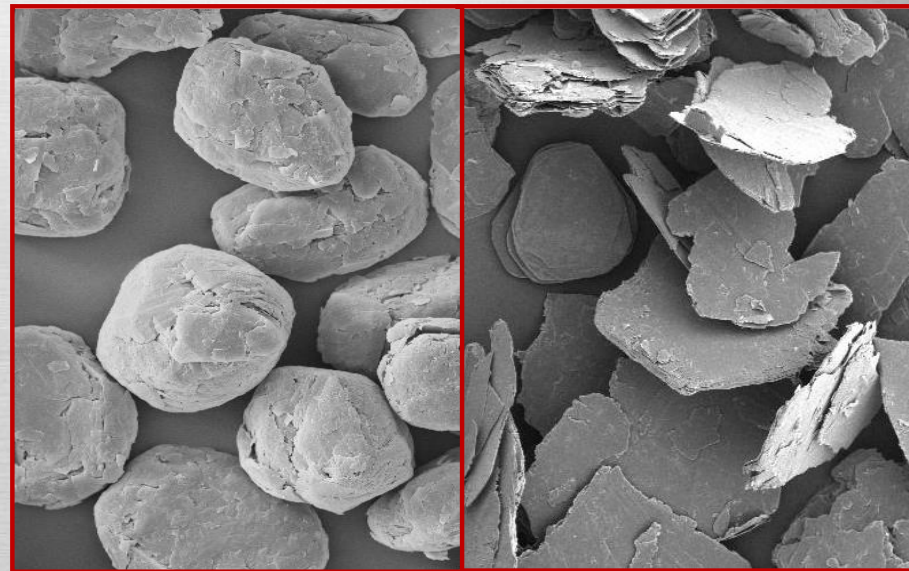
Effect pigments



H.C. Carbon

Our experience – your advantage

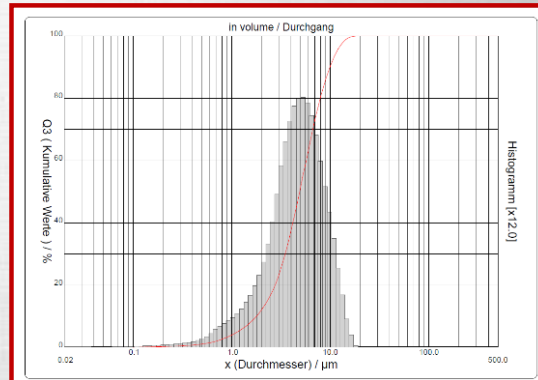
MECHANO[®]-Products for electrochemical systems (power sources)



H.C. Carbon

Our experience – your advantage

Quality



- All our products are final filtered to avoid impurities.
- We provide a certificate of analyses for all deliveries
- After analysis, the containers are sealed.
- For each batch we hold a return sample for 3 years.



H.C. Carbon

Our experience – your advantage

Packaging, delivery forms



1100 kg IBC



220 kg steel barrels



25 kg pails



**300 kg Big- Bags
lubricant powder**



**15 kg; 20 kg or 25 kg
paper bags for powder
products**



H.C. Carbon

Our experience – your advantage

Our basic principle:
As much chemistry as necessary,
as few chemistry as possible



Good Chemistry at work



H.C. Carbon

Our experience – your advantage

Benefit from our over 30 years experience.

Contact

H.C. Carbon GmbH

Ziegelstrasse 7

91126 Rednitzhembach

Tel.: +49 911 475859-0

Fax. +49 911 47585949

www.hc-carbon.de

info@hc-carbon.de



H.C. Carbon

Our experience – your advantage