

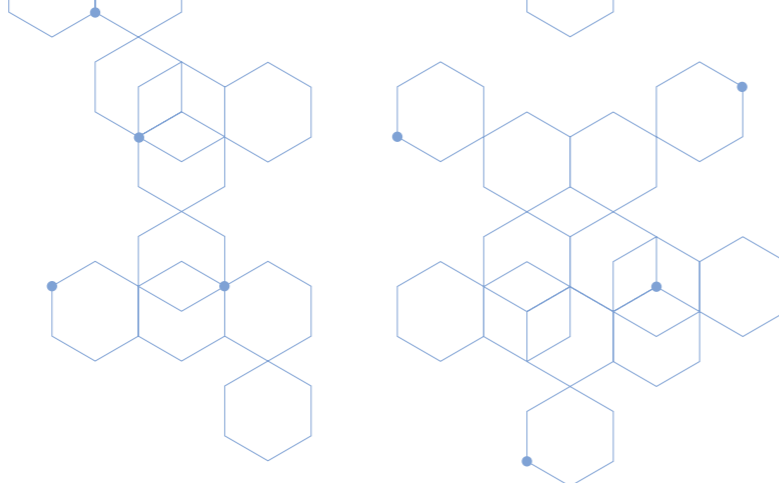
**BÜFA®-Conductive Line**

# Conductive breaks into New Industries

**Conductive Materials for a very Wide Range of Applications**



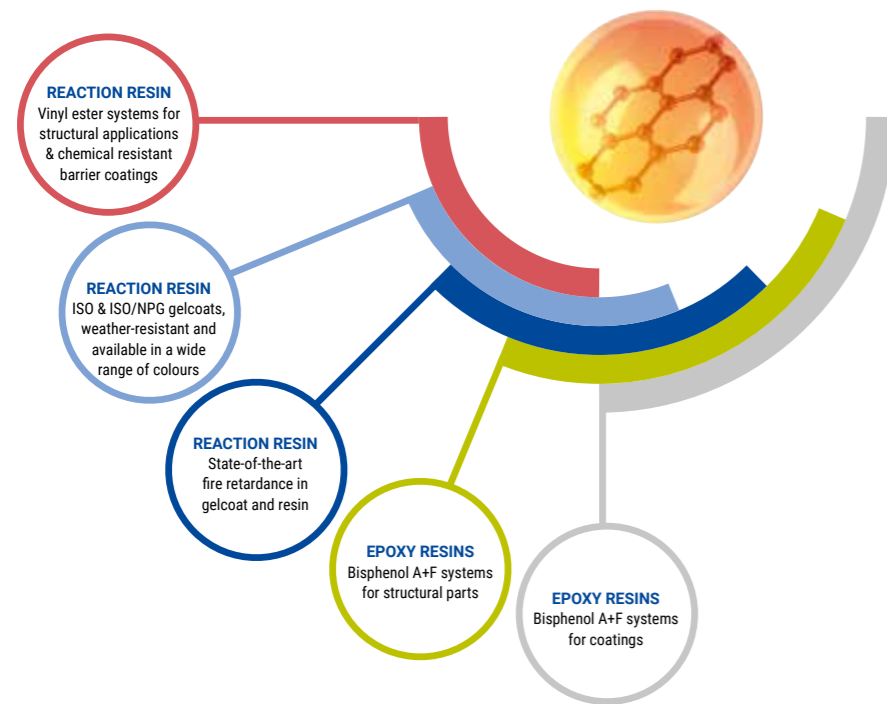
Composites



## BÜFA®-Conductive Line

The Conductive Line from BÜFA Composite Systems address a range of challenges commonly faced by a wide variety of industries. BÜFA®-Conductive Line products offer completely new possibilities for applications requiring low electrical resistance. The safety of people and technology is paramount in all conductive applications. Objects and equipment as well as liquids must not be dangerously charged in areas where there is a risk of explosion. In explosive areas, only conductive objects and equipment may be used.

### The Chemistry of the BÜFA®-Conductive Line



*Do you have ideas for additional applications?*

Contact our expert, Jens Wolters:  
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## Conductive Mould-Making Systems

### BÜFA®-Conductive Tooling-System

The innovative BÜFA®-Conductive Tooling System includes coordinated individual components, a range of conductive tooling gelcoats, a 1. Layer Resin and a mould-making resin. At the core of the mould-making system is an electrically conductive gelcoat that minimises dust build-up, drastically reduces demoulding difficulties and also protects people and materials from electric shocks. Additional benefits include more attractive, high-gloss surfaces with less rippling, less effort required for cleaning, faster cycle times, less scrap, longer tool service life as well as new opportunities for mould production.

### Advantages at a Glance:

- Safety in explosion protection areas
- Eliminates dust attraction and improves the quality of demoulded parts
- Easier demoulding with less effort
- Faster cycle times



## Conductive Flooring Applications

### BÜFA®-Conductive Masterbatch

BÜFA®-Conductive Masterbatches can be used to produce conductive floor coverings for high-stress environments. Industrial floor coatings that have particularly high safety requirements need conductive floor coverings to prevent electrostatic discharges. This is because wherever explosive substances are stored or electronic components are produced, it is important to avoid electrostatic charges. The fine distribution of nanoscale active ingredients in the primer and top coat provides constant, uniform conductivity values. Working properties are retained to provide process reliability! The low concentration of functional additives also makes a wide range of colours possible.

### Advantages at a Glance:

- Wide range of colours
- Very good flow properties
- Process safety: reproducible conductivity values and flow properties



## Conductive Applications in Tank Construction

### BÜFA®-Conductive Resin and Topcoat Formulations

BÜFA®-Conductive Resin & Topcoat formulations offer reliable conductive properties for manufacturing fibre reinforced composites for explosion protection of tanks and pipes.

GRP materials are often exposed to high continuous loads, especially in tank construction. Water, acids, alkaline solutions and direct contact with oxidising and diffusible media place extremely high demands on the material being used. Furthermore, antistatic materials for the prevention of sparking caused by electrostatic charging are often required for safe applications in tank and pipe construction.

These materials are intended to prevent ignition hazards caused by electrostatic charges. We offer tailor-made conductive product solutions that don't compromise on ease of processing.

#### Advantages at a Glance:

- Maximum fibre content
- Maximum process safety
- Contamination-free



## Conductive SMC Components

### BÜFA®-Conductive Masterbatch

BÜFA®-Conductive Masterbatches can be used to create conductive SMC formulations that are economical, reliable and tailored to processing requirements.

SMC (Sheet Moulding Compound) components are manufactured from prepregs using the impact extrusion process. SMC is an intermediate material that contains reinforcing fibres, fillers and pigments dispersed in the resin. SMCs can be pressed into shape within a short time period of about 2 to 5 minutes.

BÜFA has the expertise and offers tailor-made products for additional conductive properties in SMC material.

#### Advantages at a Glance:

- Wide range of colours
- High filling levels possible
- Weather-resistant



## Electrostatic Powder Coating

### BÜFA®-Conductive Gelcoats

BÜFA®-Conductive Gelcoats allow GRP components to be powder coated. The powder coating and subsequent burning-in process creates new coating options for different applications. Powder coating refers to a coating process where an electrically conductive material is coated with a powder. With electrostatic powder coating, the first step is the creation of an electrically charged powder cloud. The charged powder particles coat the tool surface, adhering electrostatically to form the powder coat layer. Powder coatings can be used for small and large series by contract manufacturers. Powder coat finishes can cover standard colours and can also be used for special finishes: matt yet smooth surfaces, metallic and chrome finishes, textured surfaces. New design freedom!

#### Advantages at a Glance:

- Emission-free
- Can be used in lightweight construction
- Effect finishes, textured surfaces



## Safety, Fire and Explosion Protection

### BÜFA®-Conductive Gelcoats

BÜFA®-Conductive Gelcoats are used for applications where the safety of people and technology is key: switch cabinets, fans, vacuum cleaners, sewage treatment plant covers.

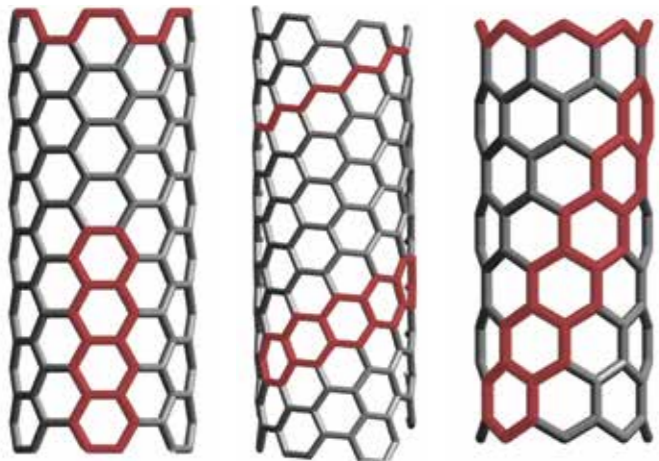
The nano-based product technology combines essential product features with conductivity. Conductive, without compromising on gloss, colour, UV protection, media resistance.

BÜFA®-Firestop makes the composite material GRP flame-retardant. We also offer some of our fire protection products with conductive properties. In explosive areas, only conductive objects and equipment may be used.

#### Advantages at a Glance:

- Wide range of colours
- Fire protection and conductivity in one product
- Optimum working properties

# The BÜFA Problem Solver



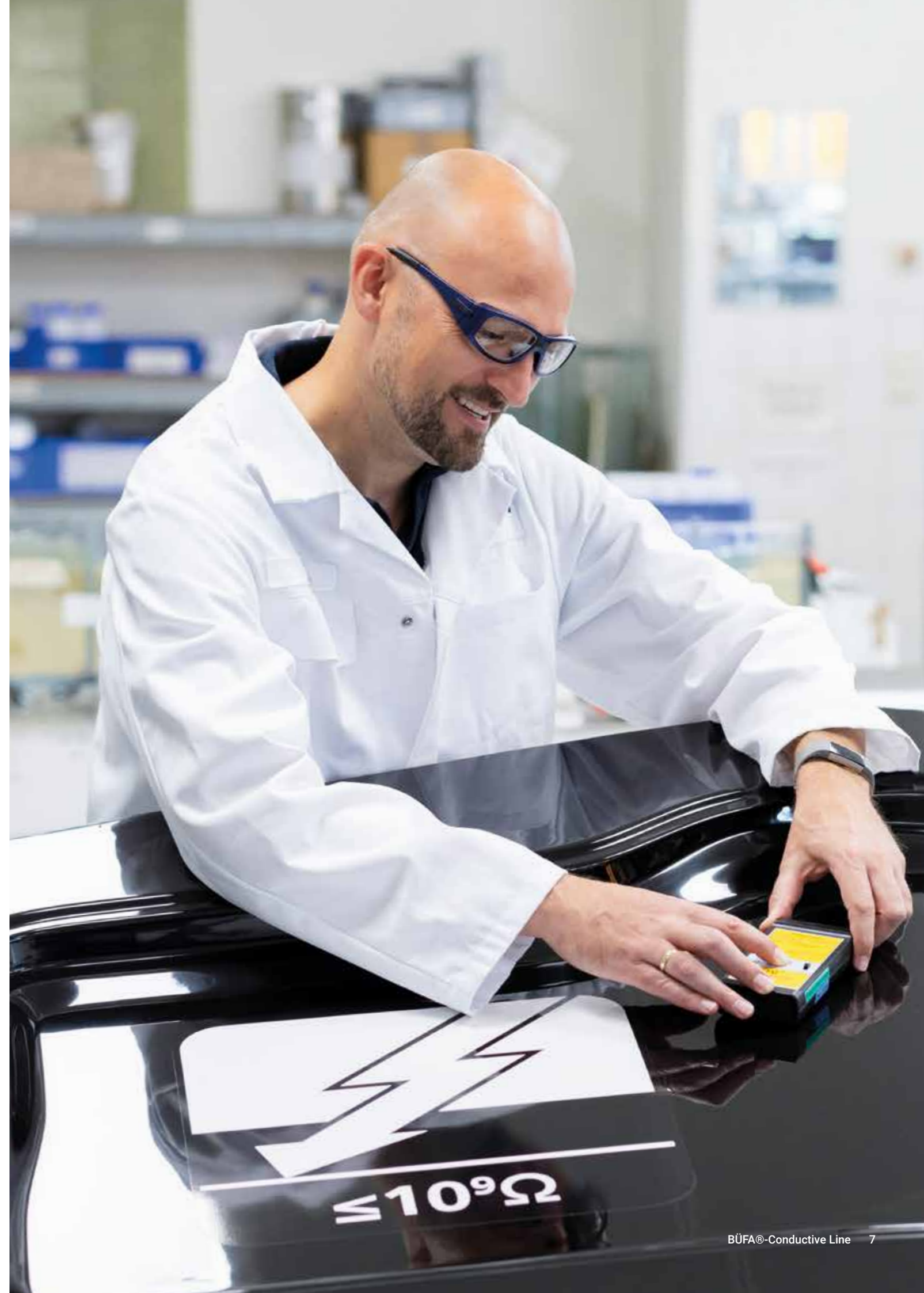
Schematic Representation of SWCNTs

SWCNTs (single-wall carbon nanotubes) act like sub-microscopic strands of wire in the reaction resin's matrix. At specific (low) concentrations and above, they form a network of fine molecular "wires" that run through the material. This is how gelcoats enhanced with SWCNTs get their excellent electrical conductivity.

The surface resistances of the new BÜFA products are set to constant values  $< 10^9 \Omega$ . Individual gelcoats of the Conductive series are optimised for a surface resistance  $< 10^6 \Omega$ . The requirements and also test methods for proving the resistance can vary greatly. Take advantage of the technical support.

Several applications utilising BÜFA®-Conductive Line products have been successfully tested in practice for a long time.

Unsaturated reactive resins are still the material of choice when it comes to the manufacture of premium and aesthetically pleasing GRP parts, for example those used in making cars, boats, rail and commercial vehicles, tanks, pipes, swimming pools and sanitary facilities.



# The Complete Range for the User of Composite Materials



UP- & VE-Resins,  
Epoxy Resin Systems



Gelcoats & Topcoats



Bonding Pastes



Pigment Pastes



Sustainable Products



Conductive Products



Initiators



Release Agents,  
Additives  
& Ancillaries



Reinforcements,  
Core & Non-woven  
Materials



Fire Retardant  
Systems



Tooling Systems



Foaming Resin  
Systems



BÜFA Tec  
Machine Technology



**BÜFA**  
*New chemistry.*

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