

An aerial photograph of a winding asphalt road through a dense green forest. A silver car is driving on the road, which curves to the right. The road has white dashed lines in the center and a white solid line on the edge. The surrounding area is filled with lush green trees and grass.

# Acrodur<sup>®</sup> for Natural Fibers in Automotive

Performance Meets Sustainability

 **BASF**

We create chemistry



# Acrodur®

Acrodur® transforms natural fibers into light and stable composites

Renewable raw materials are tools mankind has used since primeval times. By using them, we are preserving nature, enabling a high standard of living also for succeeding generations.

One important group of “renewables” is that of natural fibers, a broad variety of which is available, such as **hemp**, **kenaf**, **flax** and **wood**. The challenge they present, however, is their lack of mechanical stability and durability.

Low-emission Acrodur® binders from BASF are a perfect match to these fibers, transforming them into light-weight, stable, durable functional composites, usable in high-tech applications such as in the automotive industry.

Acrodur® can be applied by various impregnation methods. The needed amount varies by application and desired properties. Experience has proven a high natural fiber content of 75% on average.

After impregnation, the prepreg can easily be molded into the desired composite.



Source: IAC Group

## Acrodur® stands for

- Water-based binder; no added formaldehyde; low in VOC
- Suitable for a wide range of natural fibers, such as hemp, kenaf, wood
- Enabling light-weight solutions
- Possessing superior thermo-mechanical stability
- Applicable for thermoset and thermoplastic processes

# Natural Fiber – Acrodur®

## Sustainable Composites for the Automotive Industry

Resource efficiency and eco-friendliness are becoming decisive factors in the automotive industry nowadays as well. Acrodur® enables you to fulfill more stringent CO<sub>2</sub> emission limits without compromising on performance criteria.

One effective way is to lower gas consumption by reducing vehicle weight. IAC invented the first roof frame made of natural fibers and Acrodur® for the Mercedes-Benz E-class. In comparison to traditional metal frames, weight was successfully reduced by more than 50 %. This success story will now be rolled out to other car series.

Another effective way is to use highly efficient combustion engines, which require state-of-the-art heat insulation. Due to its superior thermo-mechanical stability, Acrodur® is the perfect enabler for turning natural fibers into encapsulation parts. An additional benefit is the acoustic noise reduction.

These are only two examples for car interiors and exteriors where natural fiber Acrodur® solutions can support the automotive industry in becoming more sustainable. Further possible composites can be used for door trims or package trays, for example.

With the best suitable combination of natural fibers and Acrodur®, tailor-made solutions can be created to achieve your desired properties for a certain composite with an average renewable content of 75 %.

With the Biomass Balance Approach, fossil materials can even be replaced by renewable sources up to 100 %.

Have we sparked your interest? [Let's talk about Acrodur®!](#)





# Natural Fiber – Acrodur®

Sustainable Composites for the Automotive Industry



Source: IAC Group

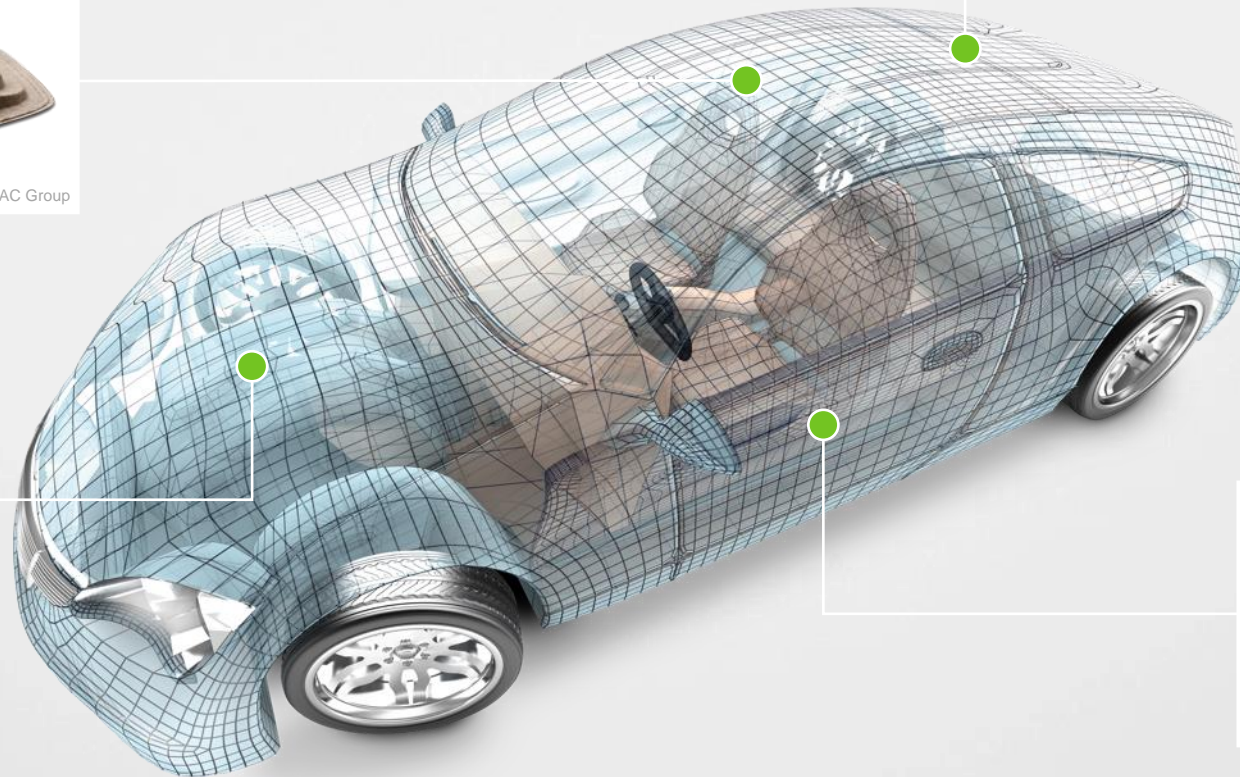
ROOF FRAME



PACKAGE TRAY



ENGINE ENCAPSULATION



DOOR TRIM

# BASF's Technical Capabilities

## A broad Testing Range for Natural Fiber Acrodur® Solutions

Our pilot plant offers the possibility to conduct a broad spectrum of trials and material tests with small input amounts of raw materials. A team of experts with state-of-the-art equipment is here to support you in finding solutions for your questions and issues, ready to give you advice based on their long-term experience.

### Preparation of prepregs

No matter whether you are using foam, bath or spray impregnation, we can choose from a wide range of application techniques.

### Molding

With our presses, we can conduct both thermoplastic and duroplastic molding of composites. While planar sheets are beneficial for mechanical testing, the installation of different model molds makes it possible to generate shapes simulating warpage and stress in real processing.

### Testing

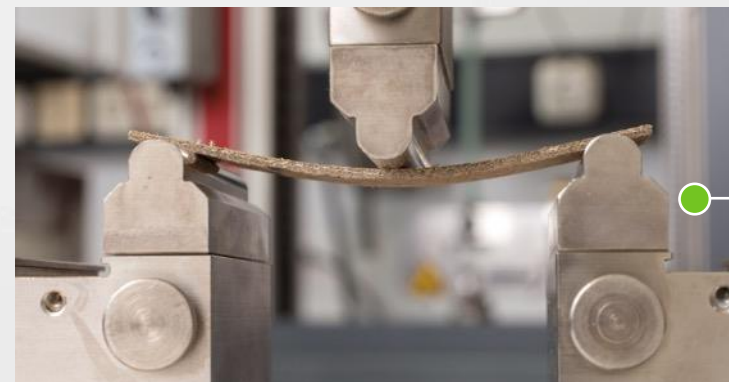
In our testing labs, we are able not only to characterize samples with respect to mechanical parameters such as bending stiffness, Young's modulus or impact resistance, but also to analyze specific parameters like odor, FOG, VOC, total organic carbon, etc.



PREPARATION  
OF PREPREGS




MOLDING



TESTING



An aerial photograph of a winding asphalt road that curves through a dense, lush green forest. A single light-colored car is positioned on the curve of the road, moving away from the viewer. The road has white dashed lane markings and a solid white edge line. The surrounding forest is thick with various types of trees, creating a rich green canopy.

**For more information, please contact:**

**BASF SE**

Marketing Fiber Bonding EMEA

[www.basf.com/fiber-bonding](http://www.basf.com/fiber-bonding)

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