

News Release

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Citroën and BASF unveil electric concept car oli

- **New car concept for sustainable and affordable mobility**
- **Innovative materials provide simplicity and enhanced functionality**
- **Solutions for saving resources and achieving a circular economy**

It's no longer about the fastest or most luxurious car. Citroën and BASF have unveiled their all-electric concept car oli [all-ë], a manifesto to how much can be saved by reducing weight and resource usage. "This concept car shows what can be achieved when partners trust one another and are bold enough to tread new paths," explained Uta Holzenkamp, President Coatings, representing the automotive team at BASF. "The result is an entire microcosm of ideas and solutions that goes way beyond the original concept."

With speed limited to 110 km/h (68 mph) and acceleration close to the classic 2CV model, the concept car gains a wider range and significantly improved battery lifespan. The minimalistic approach paved the way for a refreshing and innovative design. Various components have been radically reinterpreted and constructed by using materials in a different context. For example, the complete backrest is made of a flexible 3D-printed plastic material (Ultrasint® TPU88A). The open lattice structure provides natural air flow, replacing all ventilators in the seat. For this, as well as to produce about twenty parts the competence of the 3D printing service office, Sculpteo in France, a brand of BASF, was used. And don't bother looking for a sound or navigation system, because you won't find one. After all, most

customers have a mobile phone and portable speaker, which can be plugged in to the dashboard and automatically connected to the vehicle.

Reduced complexity, increased sustainability and appealing design

Another striking feature is that many of the new components are designed and manufactured from materials from the same chemical product family. Bonded and welded components made from different materials are a challenge in mechanical recycling. For this reason, the designers created as many components as possible from a single material.

This principle of simplicity was also implemented during production. With the driver and front passenger doors being identical, this saves on pressing tools and reduces complexity. The same applies to all wheel arches and bumpers. The oli concept car is proof of the fact that sustainability and an appealing design are not contradictory.

The color of the body perfectly conveys the concept of the car. At first glance it seems to be a pure white color, but mica particles have been added to emphasize the shape of the car. In contrast to the exterior, the materials of the interior – such as the seats and the flooring – have been coated with an intense orange color.

Co-creation as a key to new solutions

The automotive manufacturer Citroën worked closely with BASF during development and design. Innovative solutions from the chemical company played a vital role in this co-creation endeavor. “Projects such as the development of the concept car together with Citroën are a big boost on our way towards a more sustainable future,” explained Uta Holzenkamp. “You need innovation and creative minds to bring the ideas from the different companies together.” BASF has been pursuing an ambitious sustainability strategy for years now. Some of the major cornerstones of this strategy include the ChemCycling™ project on improving the chemical recycling of plastics, as well as the biomass balance approach, in which fossil resources are replaced with renewables in production.

In addition to its product and engineering expertise, BASF was also able to contribute its design expertise through the Creation Center. “This is where the project was born,” said Alex Horisberger, Manager Industrial Design at BASF. “On a visit to the creative studio at Citroën, we were able to convince their designers

with our materials and trend analyses. Working on the same level with Citroën's interior and exterior designers was a personal highlight for me."

Laurence Hansen, Citroën Product & Strategy Director, sees the collaboration in a similar light. "The collaboration with BASF was a key factor in the design of oli and in developing an electric vehicle that's as fun and efficient as possible for the near future. The innovative electric car runs counter to the trend toward increasingly heavier and more complex vehicles, instead focusing on ease and simplicity. It demonstrates how to keep environmental impact to a minimum, while bringing back the fun of a functional, electric vehicle," Hansen said.

Wide range of BASF material solutions for an innovative car concept

Many BASF automotive solutions help implement this idea: Another high-performance plastic from BASF can be found in the rear armrests and the interior floor. Infinergy®, an expanded thermoplastic polyurethane (TPU), is also used in running shoes and sports flooring. It is elastic like rubber, but lighter, robust, and highly resistant to abrasion. In oli, the material provides a pleasant yet stable surface in armrests and floors. Plus, it dampens noise and vibrations. Additionally, a special coating is applied to ensure an extra long life span. The water-based NovaCoat-P coating is ideal for protecting soft substrates against abrasion, UV radiation, dirt, and chemicals. And because the flooring is waterproof, it can be easily cleaned with water. This is where the integrated plugs made of Elastollan® come in handy, as they can be removed to drain water and dirt.

The weight of the vehicle exterior was also considerably reduced, while at the same time increasing stability and durability. The hood, roof, and trunk are made of panels combining the Elastoflex® polyurethane system and the Elastocoat® spray paint system. Thanks to the honeycomb sandwich structure, these panels are so stable that you can even stand on them. This is part of the vehicle's functionality.

Used for coating the car body, R-M® AGILIS® is another BASF product that provides greater sustainability. The water-based coating has a very low content of volatile organic compounds (VOCs).

BASF CathoGuard® 800 electrocoat, which protects the battery housing from corrosion, contributes to further resource savings. It stands out for its high

performance and eco-friendliness as it is tin/HAPs-free and with low solvent content.

For more information about oli [all-ë], visit:

concept-car-citroen.basf.com

About BASF and the automotive industry

The automotive industry is one of BASF's key customer industries. In 2021, BASF's automotive driven sales totaled €18.8 billion – representing approximately 24% of BASF Group's sales. BASF supplies and develops functional materials and solutions that enable vehicles to be built more efficiently and have a lower environmental impact, whatever powertrain technology they use. BASF's product range includes for example plastics, coatings, catalysts, automotive fluids as well as battery materials. With such an extensive range of products, BASF is the world's leading chemical supplier to the automotive industry. BASF cooperates closely with customers all over the world through a network embracing Europe, Asia-Pacific, North and South America as well as Africa. Further information on BASF's solutions for the automotive industry is available at automotive.basf.com.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. Around 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €78.6 billion in 2021. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at www.basf.com.