



Polypropylene

Abbreviation: PP

Chemical formula: $(C_3H_6)_n$

**Aggregate state under normal conditions:
solid (semi-crystalline)**

Density: 0.895 to 0.92 g/cm³

**Use: mechanical and automotive engineering,
electronics**



The beauty of film

Paint that sticks on doesn't have to be sprayed on. Which is why painted films present an alternative to wet coatings for plastic surfaces. Their advantages include no overspray, no drying time, no preparation for use, and good weather and scratch resistance qualities.

Ever more lightweight, ever more economical: the lighter the vehicle the better its fuel consumption, which is why lightweight plastics are replacing steel components in car bodies. They are already the second most important substrate for automotive paints. But they have one sticking point: automotive auxiliary parts made of the standard plastic polypropylene need to be exactly the same color as the base coat on the steel chassis. As demand rises for these auxiliary parts, so too does the demand for user-friendly and environmentally compatible coating technologies.

"Painting with films can save up to 80% of the energy needed for sprays," says Helge Warta, the head of painted film systems at Wörwag. "And the two processes provide the same results," he adds. Wörwag can produce around 550,000 square meters of painted

film a year, which would cover around 77 soccer fields.

"We make the film under controlled clean-room conditions in foil form, and then roll it," says Warta. This means that entire coating systems can be supplied as films. Instead of having to spray each layer on individually, users can apply a multilayer film in a single step. "We can even do metallic effects," says Warta.

Painted films make sense for geometrically simple surfaces made of plastic or metal. They currently have two main fields of application. They serve as decorative films for laminating window frames and other plastic components in buildings. And with a different structure, they serve as transfer films for coating vehicle body parts. One example would be the water deflector for the A-, B-, C-, E-, G-, and S-class cars from Mercedes.

Photos: Daimler AG, Frederik Laux



Stick-on paints: the water deflector on the Mercedes B-class are painted with film from Wörwag.

AT EXACTLY

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DEGREES CELSIUS
(449.6 DEGREES FAHRENHEIT)

acrylonitrile butadiene styrene (ABS) is molded into Lego bricks. Headquartered in the Danish town of Billund, Lego brings a good thirty billion of these bricks onto the market every year, including 500 million tires. This makes the toy maker one of the largest tire manufacturers in the world—at least in terms of unit numbers.



HELGE WARTA has worked at Wörwag for 15 years. He currently heads the department of painted film systems, which he and his team developed and have been continuously improving ever since. His father was also a lab director at Wörwag. "We're all about plastics," says the son. "We think about them every day."