[CASE STUDY

RÖHM
TRADITIONALLY INNOVATIVE

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Combining safety with individual style

Magene Technology develops customizable bicycle taillights using ACRYLITE® molding compounds

- **Smart taillight allows cyclists to display custom symbols**
- **ACRYLITE® Resist AG 100 combines outstanding impact resistance with excellent optical properties**
- **Röhm's brand polymethyl methacrylate (PMMA) is a tried and tested material for bicycle lights**

As early as the 1980s, China was making a name for itself as the land of bicycles. Fast forward to today, and it is now a boom region for rental bikes, e-bikes and cycling accessories. Gone are the days in which bags, lights and other items had to impress merely thanks to their practical properties. Today, it's all about marrying function with design – even when it comes to bicycle accessories. One example of this is the new bicycle taillight from Qingdao Magene Intelligence Technology Co., Ltd, one of China's leading manufacturers of indoor cycling equipment and intelligent bicycle accessories. The L308 taillight not only reacts when the cyclist brakes – the light motif can also be personalized to use the cyclist's own symbols. A display cover made of ACRYLITE® Resist AG 100 molding compound, which was developed specifically for components subjected to great stresses, contributes to the high luminance and long lifespan of the light.

ACRYLITE®, the brand polymethyl methacrylate (PMMA) from Röhm, generally offers unexcelled transparency and light-guiding properties, is UV and weather-resistant, can be processed with precision in an injection molding process and can be colored precisely in signal colors. "For a long time, ACRYLITE® molding compounds have been successfully used in lighting applications, and also for innovative bicycle lights," comments Gren Liu, General Manager of Röhm Molding Compounds Business Asia "With our high-quality PMMA product portfolio and professional R&D and application support team, we help our customers develop more innovative applications with high added value."

Striking luminance

A bicycle taillight should ensure visibility and safety in road traffic. The L308 from Magene Technology goes a step further than conventional taillights: It recognizes when the cyclist is braking and switches to a bright flashing mode that warns other road users. When doing so, the cover made of ACRYLITE® Resist AG 100 ensures high luminous efficiency.

The L308 taillight offers various lighting modes from constant light to flashing, and allows the user to adjust the brightness and flash frequency of the light. What makes it so special is the ability to customize the display. Users can choose between various preset symbols – such as hearts, smileys or arrows – or even create their own emoticons, texts or animations using an app. This allows them to customize the taillight with virtually no effort.

Resistant to impacts, UV and the weather

As an outdoor cycling accessory, the taillight not only needs to meet optical standards – it must also be able to withstand all manner of stresses and strains, such as when the bike falls over. The component must also be resistant to rainy and sunny weather, and it must be possible to remove splashes of mud without scratching it.

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For this reason, Magene Technology started scouting for the right material: “In the beginning, we chose a material that is resistant to falling and impacts for the lens,” states Zheng Rugong, head of Magene Technology’s molding department. “But it is easy to throw mud when riding. After repeated wiping, scratches began to appear on the surface of the taillight. Finally, we found Röhm’s impact-resistant ACRYLITE® Resist AG 100, a perfect match for the multiple requirements of this product.”

ACRYLITE® Resist AG 100 combines outstanding transparency, unsurpassed UV and weather resistance and high surface hardness of standard PMMA with even higher break, impact and stress crack resistance. Thanks to this combination of properties, the cover of the L308 taillight remains as good as new for years to come, ensuring that cyclists are easy to see on the road.

[Images]

The L308 taillight from the Chinese manufacturer Magene Technology can be customized to use the cyclist’s own symbols. Thanks to ACRYLITE® Resist AG 100, it stays super bright without fail and is extremely robust.

The taillight measuring 35 × 35 × 26 mm and weighing just 26 grams ensures safety in road traffic. Its luminance is all thanks to the cover made of ACRYLITE® Resist AG 100.

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About Röhm
With 3,500 employees and 13 production sites worldwide, Röhm is one of the leading manufacturers in the methacrylate business. The medium-sized company with branches in Germany, China, the USA, Mexico, and South Africa has 90 years of experience in methacrylate chemistry and a strong technology platform. Our best-known brands include PLEXIGLAS®, ACRYLITE®, MERACRYL®, DEGALAN®, DEGAROUTE® and CYROLITE®.

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More information is available at www.roehm.com.