

## At Last, a Surface Coating with Substance

a report by

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*Rohm and Haas Automotive Coatings*

### New Hardwearing MAT-TEC™ Raises the Bar on Low-Gloss Coatings

Working in one of the world's biggest and fastest-moving industries, which also happens to be one of the world's top consumers of varied plastics, technological advances are never far from the mind. With the latest breakthroughs changing and even complicating the processes involved in automotive design and development, and top-quality issues always at the forefront, it is essential to stay on top of leading-edge innovations. That includes the most recent developments in plastic coatings for automotive surfaces.

Like many speciality areas, automotive plastic coatings have experienced an evolution in support of optimum performance, lowered costs and technical superiority. The industry has come a long way, but there are still improvements being made in leaps and bounds, and some with surprisingly positive results for the quality appearances you work so hard to create and maintain.

### A Coat for All Seasons

It has been years since automotive styling could rely on low-gloss accent colours, especially black. This was one area where coatings did not weather at all well. Historically, normal low-gloss (5–50 gloss) paints have not been associated with superior durability, especially for exterior use. This is particularly true as typical low-gloss black paint can chalk, whiten and lose gloss noticeably after a mere six months of exposure. When it comes to protecting plastic surfaces, it is the outside that counts.

Apparently, black is back. Rohm and Haas Automotive Coatings, manufacturer of speciality coatings for the automotive industry, has introduced MAT-TEC™, a new plastic coating that allows designers and developers to once again differentiate their brands – without sacrificing quality. Multi-billion-dollar parent company Rohm and Haas is known worldwide for its technical and scientific innovations, including coatings, electronic materials, adhesives, sealants and more.

MAT-TEC has quickly become the only automotive-approved, low-gloss coating that provides outstanding exterior weather-ability and durability. It is a single-coat system that does not require a clear topcoat. Essentially, it incorporates cutting-edge technology in a low-gloss exterior finish, which makes it, thus far, a stand-alone offering to the automotive industry.

Due to its unique formulation, MAT-TEC coating is reportedly exceeding automotive expectations across the board, subsequently raising the standards for low-gloss coatings and even going so far as to prompt the creation of brand-new specifications to take advantage of its performance. North American and Japanese automotive manufacturers are now designing vehicles with the key benefits of MAT-TEC in mind.

### Bad Weather Beware

Using durable, low-gloss MAT-TEC coating, automotive plastic surfaces can now be better equipped to stand up to the elements and resist all kinds of abrasion. Though typical low-gloss applications have generally been used on vertical surfaces below the belt-line, MAT-TEC's superior durability and weather-ability allow it to be used on both vertical and horizontal surfaces. It works on many plastics and metal substrates and it is made for a wide variety of surfaces and plastics. MAT-TEC can be used on virtually any exterior or interior automotive part.

Typical low-gloss applications, whether in moulded-in-colour or painted, also display significant degradation in gloss and colour retention within the first two years of field exposure, while MAT-TEC coating has shown hardly any degradation in gloss or colour after five years of testing and exposure. This shows again that durability is the most important and differentiating aspect of MAT-TEC. Its technology makes it extremely long-lasting, with colour and gloss retention that lasts up to 10 times as long as other low-gloss coatings.

### Plastics Last Longer

Considering the design revolution at hand, MAT-TEC coating is breaking new ground with its three-



dimensional mechanical look that does not add the weight penalty of metal components. MAT-TEC's wide processing window, exceptional abrasion resistance, superior cold impact and low-temperature cure are all contributing factors to its phenomenal success.

When compared with moulded-in colour, MAT-TEC shows far greater asphalt stain resistance, less dirt and wax retention, the ability to withstand scratching and marring and a far wider range of colour offerings, including metallic finishes. It is available in low-gloss black, silver, charcoal metallic and other custom-matched colours. MAT-TEC can also be modified to produce a single-coat texture or a two-coat spatter coat.

MAT-TEC's texturing capabilities also offer design flexibility to yield varied effects, from a smooth finish to a subtle texture, and from a mechanical look to a rugged die-cast effect. This helps designers to differentiate vehicles, models and brands without outlandish additional tooling costs. When you can mould one component for multiple vehicles or platforms, you eliminate redundant tooling and moulding costs.

MAT-TEC can be used as both a low-cure (180°F/80°C) coating for heat-sensitive substrates or a high-bake (250°F/120°C) system for high-heat plastics or e-coated steel. MAT-TEC also adheres to a variety of plastics, including sheet moulding compound (SMC), structural reaction injection moulded (S-RIM), primed thermoplastic olefin (TPO), RIM, acrylonitrile butadiene styrene (ABS) and ABS/polycarbonate (PC) blends.

MAT-TEC is a revolutionary, high-quality product and an ideal solution for the issues the automotive industry faces in coating its plastics. It is one low-gloss monocoat system that truly delivers weather-ability, versatility of application and the flexibility to coat various heat-sensitive plastics. MAT-TEC coatings have already proved to be tried and true on tough, horizontal applications such as pick-up truck beds, tail gates, mid gates, bumper fascia and spoilers.

#### Physical Performance Properties

MAT-TEC coatings meet or exceed the following testing requirements (see *Table 1*). ■

**Table 1**

<b>Test</b>	<b>Conditions</b>	<b>Results</b>
<i>Adhesion</i>	<i>Crosshatch/3M Scotch 610 tape</i>	<i>100% Retention</i>
<i>Abrasion resistance</i>	<i>100 cycles, H22 wheel, 1,000-gram arm weight (cycles to failure)</i>	<i>No wear-through to substrate after 6,000 cycles</i>
<i>Chemical resistance</i>	<i>Environmental, plant materials and fuel</i>	<i>No visual change</i>
<i>Weathering data</i>	<i>5,000 kj xenon arc weatherometer, 48-month Florida exposure, 96+ hour humidity plus gravelometer</i>	<i>Greater than 90% colour and gloss retention; No chalking or loss of adhesion</i>