

Rubber-to-Metal Bonding Takes the *High Road*

Safety, performance and longevity
converge in new MEGUM™ adhesive

ROHM AND HAAS 

“Where the rubber meets the road” has become one of the most memorable automotive advertising phrases in history. This widely known idiom colorfully describes the most important point in time for so many critical happenings, the moment of truth if you will, when it comes to performance. Specialty materials producer Rohm and Haas has most recently taken up use of the catch-phrase in conversations about their new MEGUM™ rubber-to-metal bonding adhesive, a revolutionary product that secures elastomers to a variety of substrates, especially metals.

“From a performance standpoint ensuring high quality where the rubber meets the road, or in this case ‘the metal,’ is an absolutely demanding requirement,” says Don Branek, Rohm and Haas senior account executive. “Under-the-hood and throughout the vehicle, anywhere that rubber bonds to metal, is a crucial area with regard to safety, performance and longevity.”

Their new product, MEGUM, (pronounced MEE-gum) is a high quality rubber-to-metal adhesive that promises outstanding new levels of performance when it comes to bonding elastomers to a variety of substrates, including brake shoes, automotive NVH components, hydraulic hoses, industrial lining and even military equipment.

A particularly rugged application for MEGUM adhesives is one that now

is directly benefiting U.S. military troops. MEGUM adhesive is currently in application for the Abrams M1 tank track assembly. “MEGUM adhesives are used in the cushion pads that ride on top of the track, the pin bushings that hold the track together, and the solid tires that drive the tank track,” explains Dr. David Kistner, Rohm and Haas North American technical manager for transportation adhesives. “Our products provide these assemblies with durable bonds, as well as excellent heat resistance, which is of course especially necessary for travel through desert sand and rough terrain,” says Kistner.



Great Science Led to This Success

Rohm and Haas recently launched their newest MEGUM products. MEGUM 5382 uniquely combines performance with an improved environmental profile because it is formulated without reportable levels of lead and other heavy metals, such as cadmium or mercury, chlorinated solvents or other ozone depleting chemicals. Other MEGUM products newly introduced for rubber-to-metal bonding include MEGUM 3110 used as a “pre-diluted” primer and MEGUM W 2010 LD, a water-based one-coat clear adhesive. These products deliver top bonds and exceptional reliability for a host of high performance automotive and industrial applications.

The benefits add up – but not the cost

MEGUM™ adhesives offer the highest bond performance, lowest fuming and best sweep resistance in dry film properties, plus the highest throughput capability during injection molding. Although it raises performance levels, MEGUM adhesives won't increase costs. "We know that customers interested in under-the-hood applications will also benefit from MEGUM products because they are priced to be more cost-effective for end users," explains Don Branek senior account executive for Rohm and Haas. "We realize that customers' margins are thin, but they want high performance, and they get that with this product." Total applied cost for MEGUM 5382 adhesive is significantly lower per gallon than competitive products...by far the lowest in the North American marketplace

Rohm and Haas chemists and development engineers have known for a long time that high performance for rubber-to-metal adhesive bonding demands perfect chemistry, and the line of MEGUM products provides it.

Getting the lead out

The MEGUM success story began when Rohm and Haas scientists "got the lead out."

Kistner explains: "Lead has been traditionally used as a stabilizer, an acid scavenger. However, when formulated and tested, our lead-free adhesive was just as effective and just as stable when alternative stabilizers were used."

That innovation put our scientists on the doorstep of the 21st century because they had a product ready when the European automotive parts industry went lead-free after a sweeping lead-free law was ratified by the European Parliament in the year 2000. "MEGUM™ was years ahead of its time," says Kistner. "Rohm and Haas was already the world leader in providing flexible, high temperature resisting primers. Now we have the longest history in the development of lead-free compounds in the market, too."

Customers will benefit

"Our customers can use MEGUM adhesives to fashion a variety of products," says Branek. "They are equal to or better than other competitive offerings out there now, and customers will save money since the dry cost and cost-per-square-foot will be significantly lower than other products. It will be a welcome relief for the industry to be able to reinvest back in their business without sacrificing performance."

Controlling NVH

According to Rohm and Haas senior technical service specialist Ron Williams, MEGUM as a noise, vibration and harshness (NVH)



component applies to all passenger vehicles, trucks and buses and is totally representative of what customers want – ever higher performance without elevated costs. The rubber compound formulations used in combination with MEGUM adhesives to manufacture these automotive components is based on the need to provide a safe, comfortable and smooth ride for the consumers, he says.

A global view

Examining the global interests and opportunities for MEGUM adhesives suggests a bright future. With Europe and North America demanding lead-free adhesives, China's growing automotive market and its new attention to industrial processes and environmental safety, the global market recognize the

benefits of MEGUM very soon, promises Kistner. Rohm and Haas has opened a new facility in Shanghai, and soon the Chinese automotive industry will be sporting lead-free rubber-to-metal adhesives to catch up to the global automakers. Indeed, where the rubber meets the road will soon be a defining moment for users of MEGUM adhesive products.

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Providing on-site technical support

"We bring this product to market with the best possible technical service and support staff," says Rohm and Haas senior technical service specialist Ron Williams. The support and trouble-shooting staff for the MEGUM™ products are in-house, Rohm and Haas technicians. "We don't outsource our product support or "state of the art" analytical capabilities," Williams says. "That way, customers can get their questions answered quickly and efficiently by people who can readily demonstrate their trouble shooting and problem solving expertise because of their vast product knowledge and outstanding analytical tools available."

Age and experience are also a plus, adds Branek. "Our current technical and sales

staff has plenty of experience, but they are not going to retire any time soon," he adds with a chuckle. "They have been and will continue to be here for the long haul."

The Rohm and Haas technical service and support staff have on hand state-of-the-art testing facilities and tools, including: a production roll coater for headliners application; injecting molding capabilities; an exhaust steam curing chamber; post vulcanization bonding chamber; and an environmental chamber. "The facility also features complete substrate preparation capabilities with a full range of trouble-shooting and problem-solving services," notes Williams. "This compliments the Rohm and Haas global research and development operation."