Silicone-free tire paints

tire technology EXPO 2018 EXHIBITOR

New tire paints eliminate the need for the costly post-cure cleaning required in certain applications

Chem-Trend is offering a family of silicone-free inside tire paints that help tire manufacturers to save time and money by simplifying the additional downstream processing that is required on some tires.

In addition to eliminating silicone residues from the innerliners of finished tires, which is preferred by some vehicle OEMs, these water-based inside tire paints enable tire manufacturers to more efficiently produce innovative tire options that improve their customers' mobility. These include adding layers of a puncture sealant or adhesive to affix cavity noise-absorbing polyurethane inserts or electronic sensors to the innerliners of selected cured tires (making them smart tires).

With Chem-Trend's silicone-free inside tire paints, only a simple wash with water is required to remove any remaining product residues from the innerliners of cured tires prior to the application of the adhesive or sealant layers. "The results obtained from some of the field trials run so far suggest that cleaning the innerliners may not be necessary at all when these inside paints are used," notes Doug Butcher, business development director for the tire industry.

Besides saving a process step and improving efficiency, this also ensures a higher finished tire quality as there is no abrasion of the innerliner surface during the cleaning process – a major productivity improvement benefit to users. Before this innovation, tire companies needed to either scrub tire innerliners using aggressive chemical cleaners or employ expensive laser cleaning systems to remove silicone residues from the innerliner before sealant or adhesive layers could be applied.

The range consists of several different silicone-free paints. Unfilled inside tire paints are designed to be applied to the inside of each tire prior to curing to provide outstanding slip, tire uniformity and a clean inside tire appearance. There are also filled inside tire paints. Designed to be applied to each tire, these products have been specifically formulated with carefully selected fillers to deliver maximum slip and provide additional air bleed to assist the evacuation of air that may have become trapped between the tubeless tire innerliner and the curing bladder. Finally, durable unfilled tire paints create a reservoir of slip-and-release functionality on the curing bladder surface, which then permits the release of several untreated tires between applications.

To suit customer preference, different versions of Chem-Trend's inside tire paints are available in tan, gray or black

Although these new products do not contain any silicones, they provide the high levels of slip and release that tire manufacturers require to ensure low defect levels during the critical curing step. In fact, Chem-Trend says that some of these silicone-free inside paints actually provide a higher level of slip than their silicone based counterparts. Thus, by switching to a non-silicone, users can be assured that their desired level of slip will not be sacrificed, nor will they see increased curing related defects as a consequence. This is an important consideration given that an uncured tire arriving at the curing press already contains around 90% of the working capital involved in its manufacture.

Chem-Trend believes that with its new range of non-silicone-containing paints, it is offering the tire industry leading-edge, value-adding solutions that meet today's and future performance requirements for customers. Development work to further extend this growing family of non-silicone-containing products is well advanced at Chem-Trend's new global development facility in Howell, Michigan, with additional product launches anticipated by year-end.

Chem-Trend continues to supply the global tire industry with many high-performance release agents, in both silicone and non-silicone-containing formulations – designed to both increase process efficiency and improve tire quality. **tire**

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