

Development of Next Generation Conversion Coating System

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ABSTRACT

The zinc phosphating process has played an indispensable role in improving the corrosion resistance of auto bodies. However, the process has impacted significantly on the environment as zinc phosphate chemicals contain heavy metals and sludge produced as a byproduct of the coating process. We have succeeded in developing a completely new zirconium oxide conversion coating system as a result of our extensive research into conversion coatings. The performance of our zirconium oxide conversion coating system after painting is equivalent or greater than that of the conventional system while P, Ni, and Mn are no longer needed in the bath at all and no sludge such as insoluble phosphate is produced. We have completed laboratory tests on the zirconium oxide conversion coating system and the system is currently being tested on parts lines. Our next goal is to expand use of the system on other parts lines and body lines. We believe that in the near future the zirconium oxide conversion coating system will replace the conventional zinc phosphating process.