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Abstract:

Acrylic Resins for 2K and 1K High-performance and Sustainable Coatings for Metal Protective Coatings

The reduction of VOC (volatile organic compound) emissions has been a major driving force in the development of coatings. In the Helios Resins R&D team, high-solid and highly reactive ultra-high-solid hydroxy acrylic resins have been developed for 2K high-performance and sustainable coatings for industrial applications on metal. These 2K PUR (polyurethane) coatings, with low VOC at spraying viscosity, are designed to maintain the properties of high-performance protective metal coatings while ensuring a low impact on the environment. As formulations shift to higher solids to reduce VOC emissions, there are higher concentrations of functional groups.

Replacing organic solvents with water is also an important aspect of developing sustainable coating systems. Therefore, a secondary-acrylic dispersion resin, intended for use as a polyol in 2K PUR water-based coatings with exceptional weathering properties, was produced. Another important industrial application is direct-to-metal water-based coating systems based on 1K or 2K coating chemistry. These systems not only minimize environmental impact but also simplify the application process and reduce application costs, while ensuring a high level of metal protection.

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