A major North American steel producer of flat rolled, zinc/zinc alloy coated substrate was using a trivalent chromium, RoHS compliant, passivation product on a horizontal chemcoater. They encountered issues including:

- Multiple white rust claims on substrate from their hot dipped galvanize/galvanneal line
- A key stamping customer reporting an adverse interaction between this passivation product and their stamping lubricant leading to significant residue buildup in their stamping dies and tape adhesion issues
- Lack of the needed technical support from their current supplier

Considering Quaker Chemical Corporation’s (“Quaker”) excellent service provided at this steel producer’s site and integrated product offerings, a trial opportunity for PRIMECOAT™ Z 838-4, a trivalent chromium passivate, resulted. Quaker implemented the product, which demonstrated the following long-term benefits:

- Experienced zero white rust claims on the steel producer’s galvanized/galvannealed substrate
- Exhibited chemical compatibility with the stamping lubricant with no issues reported
- Optimized their strip curing process to achieve recommended peak metal temperature
- Outperformed incumbent product in corrosion protection by neutral salt spray testing
- Outperformed incumbent product in chromium leaching testing proving its high stability with water exposure
- Decreased unit price by 25% resulting in significant cost savings
- Expanded service and technical expertise
- Involved in continuous improvement project to reduce applied coating weight without degrading performance for further cost savings

PRIMECOAT™ Z 838-4 is a water-based, trivalent chromium, RoHS compliant, passivation product that contains no toxic ingredients and is chromate and fluoride free. It forms a transparent layer on zinc/zinc alloy coated steel, even at higher coating weights while providing excellent corrosion protection, lubricity in light forming applications, and paint adhesion properties. PRIMECOAT™ Z 838-4 has next generation technology and proven field performance that sets it apart from competitive offerings on the market.

Surface treatment fluids represent a very minor part of the total steel processing cost, typically less than 1%. This case illustrates the importance of the correct selection of the surface treatment fluid. The impact of the fluid can be a multiple of its costs, making the price of the surface treatment fluid insignificant. That is why Quaker focuses on developing fluids with the highest performance without compromise, fluid solutions that sharpen your competitive edge.