

# The Development of a New Trivalent Chromium Chemical for Zinc Plating

**Daisuke Shimizu**※(1) **Yasuhiro Kinoshita**※(2) **Junichi Uchida**※(3)

## Abstract

A trivalent chromium treatment has been widely applied for zinc plating, as an alternative to a hexavalent chromium treatment. However, in some cases, poor corrosion resistance is observed at the forming and cross cut sections. Only way to improve the corrosion resistance of the trivalent chromium treatment is to increase coating weight. In contrast, there are several problems with respect to its performances. Therefore we have developed a new trivalent chromium chemical as a surface treatment. It is an environmentally friendly coating, which has a high cross-linking density as an alternative to a self-healing effect of the hexavalent chromium. Furthermore it satisfies excellent performances for all different kinds of properties.

**Key words** : trivalent chromium, hexavalent chromium, zinc plating, corrosion resistance, self-healing effect

Reprinted with permission from the Galvatech 2013 - 9th International Conference on Zinc and Zinc Alloy Coated Steel Sheet - Beijing, September 23-27, 2013.

※(1) Researcher, Central Research Laboratories R & D Center I

※(2) Research Manager, Central Research Laboratories R & D Center I

※(3) Chief researcher, Central Research Laboratories R & D Center I