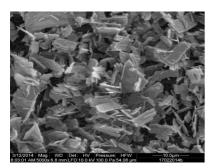
New Ideas. New Materials.



SEM micrograph of nano-crystalline zinc phosphate platelets (hopeite)



Zinc phosphate platelets as re-

dispersible powder





Application in protective paints

LAB TECHNOLOGY

ZINC PHOSPHATE PLATELETS AS ACTIVE HEAVY METAL-FREE CORROSION INHIBITORS FOR STEEL

AIM

• Combination of diffusion barrier (crystalline platelets) with active corrosion protection ability (chemical composition) in one type of pigment

CHARACTERISTICS

- Nano-crystalline zinc phosphate (e.g. hopeite) and mixed Zn-metal phosphate as platelet-type filler (aspect ratio: 10-30)
- Heavy metal-free (e.g. free of Cr-VI or Cr-III)
- Controlled chemical synthesis permitting to tailor the particles intrinsic composition and platelets morphology (aspect ratio)
- Improved active corrosion protection properties with controlled addition of foreign ions (e.g. Al, Mn,...), mixed Zn-metal phosphate
- Dispersible in various media (Epoxy resins, PU resins, water or solventbased paints,...)
- Tailored surface modification for an improved compatibility and reactivity with various matrices
- Higher activity against corrosive media of single particle as a result of its high surface to volume ratio

APPLICATIONS

- Improvement of mild steel corrosion protection
- Range of applications: machine construction, automobile industry, marine industry, steel manufacture, energy industry
- Additive for corrosion protection in tribological systems

STAGE OF DEVELOPMENT

- Basic compositions optimized at the lab scale
- Adaptable to the requirements of new applications through R&D and technology transfer projects

CONTACT

INM – Leibniz Institute for New Materials Campus D2 2 66123 Saarbrücken/Germany www.leibniz-inm.de

Dr. Ing. Carsten Becker-Willinger Head Nanomers®

nanomere@leibniz-inm.de Phone: +49681-9300-196 Fax: +49681-9300-279