

## Mineralization Technology

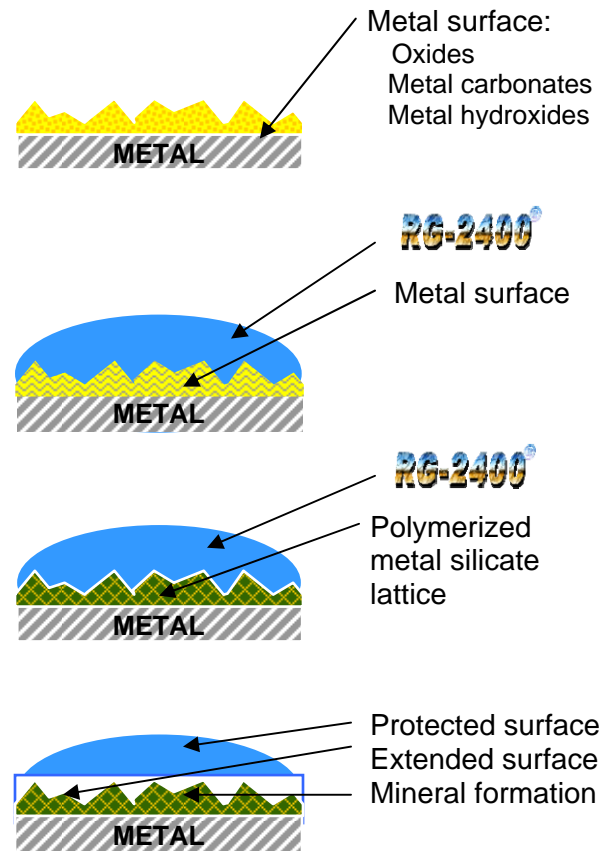
Surface conversion technology, also known as mineralization, or the science of minetics, is the ability to grow very thin minerals on metal surfaces for useful purposes. Engineered surfaces form when mineral-forming reactants are delivered to the surface of a metal or metal containing article via novel modifications of known base formulations (e.g., paint, gel, grease, aqueous suspension). Substrates contribute donor ions to react and/or interact with delivered reactants, forming a very thin layer of mineral, which chemically bonds to the surface of the substrate and has been measured to be only a few monolayers thick. In many applications, lattice-forming oxides anchor to this surface-adhesion layer and polymerize into a three-dimensional inorganic framework structure until the final coating thickness is 50-200 Angstroms. (a piece of paper is approx. 1,000,000 angstroms thick)

Engineered Mineralization products have been developed to deliver the mineral-forming reactants in a wide variety of formulations including paints, coatings, synthetic gels, greases, thread dressing, sealants, adhesives, and water gels. Patents and patent applications cover the delivery of novel formulations as well as the mineralized layer that is formed as a result of an interaction between the applied coating and the underlying substrate. The presence and uniqueness of the mineralized layer can be confirmed by conventional analytical surface methods such as x-ray Photoelectron Spectroscopy (XPS) or Atomic Force Microscope (AFM)

### Benefits of Engineered Surfaces:

- Outstanding Corrosion Prevention
- Direct application on rusted surfaces
- Fast and efficient mineralization, including
- A unique self-healing mechanism
- Environmentally friendly

RG Series products are protected by US and foreign patents.



**RG-2400<sup>®</sup>**



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This Information is based on our best knowledge, but POLYGUARD cannot guarantee the results to be obtained.

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 - American Natl. Standards Institute  
 - Dutch Council for Certification  
 - Deutscher Akkreditierungs Rat