

# Steel's Silvery Lining

*Antimicrobial steel available for sterile hospital equipment*



**M**any newborns have an ointment containing silver nitrate added to their eyes to prevent infection. The same antimicrobial properties are now available with AgION coating for carbon and stainless steels, developed by AK Steel, Troy, MI. The compound suppresses the growth of various destructive microbes, including bacteria, molds and fungi.

This coating consists of a durable inorganic material that contains silver ions. The active agent, zeolite, acts like a cage for the silver ions, releasing them gradually. As increased humidity becomes more conducive to bacterial growth, zeolite pumps silver ions into the environment proportionately to the amount of moisture present. The coating maintains effectiveness over a wide range of temperatures and pH values.

Here's how it works: Ionic silver has an affinity for hydrogen ions, joining with them on the sulfhydryl groups present in the microbes, disrupting electron transfer and respiration in the microbes. Non-ionic

forms can further disrupt respiration by catalyzing the interaction of atomic oxygen with the sulfhydryl group, producing an OH molecule and a sulfur bond.

The AgION compound is blended into an epoxy paint system and then applied to the company's products by continuous coil coating. The paint can be clear, tinted or pigmented and the coated product can be formed, bent or drawn using conventional fabricating procedures. Also, treated steel may be welded and the surface coating repaired. In addition, the coating may be applied after manufacture. All products are offered in widths up to 60-in. in gauges from 0.018- to 0.06-in. Widths of 48-in. are available in gauges from 0.5- to 0.75-in. Most commercial grades are offered, while heavier gauge coating lines are under development. Depending on wear, the expected coating lifetime can be 10 to 30 years; baseline calculations of expected lifetimes are available upon request.

—SG

For more information:

**Circle 160**—AK Steel, or connect directly to their website via the *Online Reader Service Program* at [www.rsleads.com/203md-160](http://www.rsleads.com/203md-160)

