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New VCI Technologies Fight Corrosion, Protect Environment

Where reducing the total cost of asset preservation is the primary measure of success for a corrosion control endeavor, few corrosion-fighting tools are as versatile and cost-effective as volatile corrosion inhibitors (VCIs).

VCIs and the related vapor-phase corrosion inhibitors (VpCIs) are now being used to prevent corrosion in everything from pipelines to military vehicles and electronics to cooling towers. Application methods are equally diverse, ranging from coatings to passive vapor emitters.

VCI performance is driven by the ability to alter the environment where corrosion occurs. They can be designed to form protective barriers on internal or external surfaces or alter the corrosive properties of an enclosed vapor space. Migrating corrosion inhibitors (MCIs) can even diffuse into concrete to help protect embedded reinforcing steel.

The articles that follow illustrate VCI and VpCI performance in a wide range of industries and applications. One article highlights how VpCIs are used to reduce corrosion in low-flow areas and other components of the Trans Alaska Pipeline. Another shows how the U.S. Air Force is using them to fight corrosion where long-term storage and rapid equipment mobilization are mandatory.

The chemical processing industry is using VCIs and VpCIs to limit corrosion in condensers, cooling towers, and boilers during shutdown or standby, and a related article summarizes how they perform in those environments. Other articles describe applications to packaging systems to prevent corrosion of metal components during shipping and storage, to electronics, to tank bottoms, and to coating systems.

Whether asset preservation is a matter of national security or job security, VCI technology is a powerful weapon for fighting corrosion.

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