



CORROSION CONTROL COATINGS & TRIBOLOGY

Compiled by LYNNE DAVIES

Corrosion inhibitors boost sustainable preservation

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NO DISMANTLING REQUIRED

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A “comprehensive, efficient and sustainable” way to preserve valuable assets on a large scale, vapour phase corrosion inhibitors (VpCIs) save time, labour and money while ensuring equipment remains in prime condition, states corrosion control technology manufacturer Cortec.

“The VpCIs are environment-friendly, biodegradable, non-toxic and free from hazardous chemicals like nitrates or heavy materials, aligning with increasing environmental regulations and safety concerns,” Cortec project engineer **Lisa Marston** explains.

She notes that VpCI technology offers a cleaner, more efficient option for corrosion protection, especially for complex or inaccessible metal parts, making it a preferred solution for modern preservation and packaging needs. “It represents a significant advancement over traditional methods, owing to its versatility.”

Additionally, Marston points out that insufficient or incomplete surface preparation is a very common mistake in preservation application. She stresses that having a clean and contaminant-free surface before applying preservation products is a key step

in ensuring the effectiveness and longevity of the corrosion inhibition.

VpCIs tend to be easy to apply in a variety of forms – including powders, liquids, emitters or impregnation into packaging materials – often not requiring special surface preparation beyond basic cleaning.

“VpCIs work by vaporising and diffusing through an enclosed airspace. These microscopic molecules then condense and adsorb onto all metal surfaces within that space, forming a thin, invisible, monomolecular protective layer,” explains Marston. Moreover, these inhibitors provide 360-degree protection in an enclosed volume. The vapours are able to reach intricate internal surfaces, crevices, voids and other hard-to-reach areas that are impossible to coat or treat with traditional methods, without dismantling.

The VpCI molecules vaporise and float away

when the enclosed space is opened. Marston notes that this eliminates costly and time-consuming cleaning and degreasing, allowing for quicker recommissioning of large assets.

“By simplifying application, reducing labour, eliminating cleaning steps, and extending the lifespan of equipment, VpCIs often prove to be a highly cost-effective solution for large-scale preservation,” states Cortec corporate communications **Ana Juraga**.

Meanwhile, VpCIs do not leave detectable residue on the metal surface.

“It does not alter the appearance, conductivity, or functionality of the protected items. This is vital for sensitive electronics, precision components and machinery where residue could cause problems,” explains Marston.

Further, VpCIs provide long-term protection, often lasting months or even years, especially when used in properly sealed enclosures.

“The protective molecular layer they form is self-replenishing, meaning if the barrier is disrupted the vapours will re-absorb to maintain protection,” explains Juraga. ■

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