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How to Prevent Rust in Long-Term Storage and Shipping with BioPad®

The age-old problem of how to prevent rust on metals is a big concern for manufacturers who must ship metal parts around the world or store them for long periods. While there are many tools and technologies available, one helpful material that Cortec[®] Corporation has developed is <u>BioPad[®]</u>, a USDA Certified Biobased Product that is a fast, efficient, and effective way to add a boost of corrosion protection inside a package.



How BioPad® Prevents Rust

BioPad[®] is made of flexible non-woven material infused with Vapor phase Corrosion Inhibitors. When BioPad[®] is placed in a package, the pad's high concentration of corrosion inhibitors quickly vaporizes and diffuses throughout the enclosure, forming a protective molecular layer that inhibits corrosion on all accessible metal

surfaces, including those made of carbon steel, aluminum, galvanized steel, brass, copper, and zinc. If the package is briefly opened, additional corrosion inhibitors from BioPad® will replenish the protective atmosphere within the space. When the metal part is taken out of the package for installation and use, the Vapor phase Corrosion Inhibitors will evaporate, leaving behind a clean, non-rusted metal surface.

Advantages of BioPad®

BioPad[®] inherently offers many benefits, the main one being fast and comprehensive protection due to a high concentration of Vapor phase Corrosion Inhibitors. This high concentration, combined with the thin design of BioPad[®], results in a significant material reduction compared to similar polyurethane foam emitting devices (i.e., more corrosion protection per square inch/cm of material). In contrast to many liquid rust preventatives, the use of BioPad[®] for corrosion protection means no degreasing or coating removal is required at the end of the preservation period, a huge savings in worker time and labor. If that were not enough, BioPad[®] is constructed

from non-woven material with a high level of biobased content, mainly derived from byproducts of corn processing. Altogether, BioPad® contains 58% USDA certified biobased content and has been awarded the USDA Certified Biobased Product label, making it a great choice for environmentally conscious users who want to choose a more sustainable option.



When, Where, How, and Why to Use BioPad®

What are some of the best applications for BioPad®, and why? Two Cortec® reps who have worked for years on the front lines of corrosion protection with manufacturers—especially automakers—explain.

Mike Gabor, VP of Sales for Eastern North America, considers BioPad[®] one of his favorite corrosion inhibitor solutions for export shipping and long-term storage. He noted, "BioPad[®] reduces the time needed to saturate a package with VpCI[®] chemistry and [is] great in combination with <u>VpCI[®]-126 bags</u> for difficult applications."



This faster saturation time is excellent for high-humidity environments or packages that may ship before other forms of VpCI® packaging have time to condition the packaging enclosure. For example, Jessica Carpenter, Cortec® Regional Sales Manager, explained that VpCI®-126 bags take longer than BioPad® to fill the atmosphere within a package with Vapor phase Corrosion Inhibitors. This is not bad; it simply means that it can be helpful to add a BioPad®

into a VpCI[®]-126 bag in hot and humid months to speed up the package conditioning process and ensure adequate protection during the rust season. Carpenter noted that "BioPad[®] is specified by large automotive manufacturers for protecting parts up to five years in combination with VpCI[®]-126 4 mil bags."

Positive Experiences with BioPad®

BioPad[®] has been well-received in many applications around the world, often as part of a broader corrosion inhibiting packaging solution (e.g., <u>VpCI[®] Film</u>, <u>VpCI[®] Emitters</u>, liquid rust preventatives). The following are a few examples of where BioPad[®] has played a role in the overall packaging system:

- <u>Internal protection of marine engines</u> stored for one year near the sea (in place of another brand of VCI chips that had a stronger smell and took up more space per volume protected).
- Export shipping protection of high voltage interrupters facing rust issues with the previous packaging system.
- Long-term preservation of a spare marine engine crankshaft being stored for up to 10 years.



The fact remains that BioPad[®] is a great way to get a high concentration of Vapor phase Corrosion Inhibitors quickly and conveniently into a package while reducing material size and incorporating renewable resources. Contact Cortec[®] to discuss whether preventing rust with BioPad[®] is the right corrosion solution for your long-term storage and shipping application.

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