

# Breaking myths: Is it time to say goodbye to VCI?



The name pretty much sums up what it does: Volatile Corrosion Inhibitor (VCI).

For many years, it's been the king of the hill in regards to protecting metal shipments from rust. But it's time to challenge that reign due to cost and the environment. So we decided to do just that, by conducting tests together with some of our biggest clients in the automotive, aerospace and machinery industry.

The goal is to find the optimal way to protect metal shipments from moisture damage. This report contains the results of these tests.

We hope it will change how metal shipments are protected, cut costs and make a difference for the environment.



# Moisture: It's in the air and everywhere

**Before we cut to the chase, we need to set the stage. One of the most important aspects of moisture protection is how moisture works. To begin with, it's everywhere and you pretty much can't avoid it (at least not to a reasonable cost).**

**Often, moisture that causes damage comes from inside mini boxes, pallets, packaging or other means used for transportation. It's in the air and hazardous levels may appear due to temperature variations.**

It often starts with water drops forming due to a fall in temperature. The drops that form in the ceiling of the container or inside the packaging will then affect the cargo. This is critical, as metal is sensitive to moisture and oxygen, and needs to be protected during transport even if the duration is just a few days. Train, road or boat – the transportation method doesn't matter, the challenge is the same.

## Crash course

VCI is basically a chemical that protects metal from corroding. The chemical compound is often added to paper or plastic film used for packaging. VCI also comes as emitters and spacers. The purpose is to protect metal from corrosion. And here's a challenge for VCI, as it doesn't completely protect against corrosion. Another is the fact that it doesn't protect the shipped metal against other foes that threaten when there's excess moisture, such as packaging damage and peeling labels.

There's another important factor here. Time. It has caught up with VCI, as it's a time-consuming method. Metal parts need to be wrapped in protective VCI coating before shipping. This takes time, just as the unwrapping when the parts reach their destination. For one of our clients partaking in this report, it took eight hours to prepare a single container for shipping.

## False security

VCI has been #1 in rust protection for years. The general opinion is still that VCI is the only effective way to protect metal shipments from rust. Yet we have seen companies add desiccants to the VCI protection, a clear sign that VCI isn't always enough.

There's also a stubborn myth that desiccants are dangerous for metal parts. This assumes that metal is damaged when it touches a desiccant bag, not due to the water but to the salt in the desiccant bag. However, desiccants of high quality (using high grade permeable materials like Tyvek®, that Absortech uses) keeps absorbed moisture as well as absorbing agents safely inside the desiccant bag. This has been proven in the several field tests we have conducted, and hopefully we can lay this myth to rest. Another issue with VCI is that many companies don't fully understand how VCI protects metal from corrosion. This leads to the overuse of material, which only increases costs.

Protection is not improved by more VCI—it's determined by the correct application. This gives a sense of false security, while increasing the time spent packaging, costs and the environmental impact.

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