# VCI Masterbatch

Coraplast's next-generation Vapor Corrosion Inhibitor (VCI) masterbatch designed to offer advanced, long-term protection for metals during manufacturing, shipping, and storage. By embedding VCI molecules directly into polymer resins, makes it possible to produce films, bags, sheets, and other plastic packaging materials that actively prevent corrosion without the need for oils, greases, or additional coatings.

This innovation ensures that manufacturers and exporters can deliver corrosion-free products globally, reducing costs associated with rust claims, rework, and rejected shipments, while maintaining clean, dry, and ready-to-use metal parts straight out of the packaging.

## Proof of Performance

Coraplast VCI grade has undergone extensive validation in both laboratory conditions and real-world industrial trials. Performance was benchmarked against industry standards using methods such as ASTM B117 (Salt Spray Test), Razor Blade Method, and K-Tests commonly used in automotive and industrial sectors.

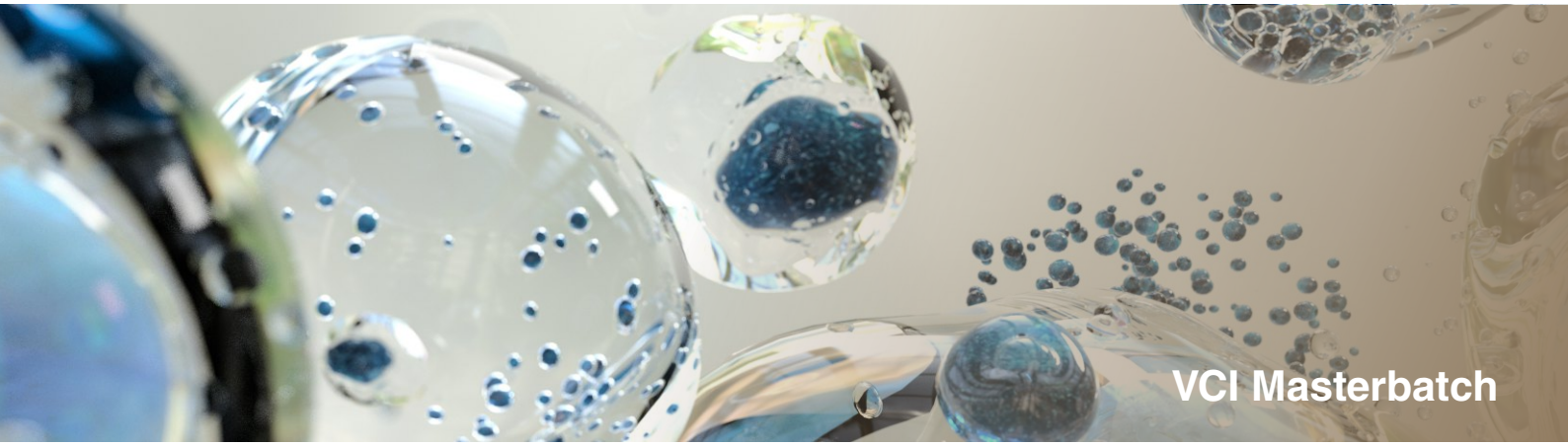
Results consistently demonstrate that delivers long-lasting protection, often exceeding 500 hours of salt spray resistance at typical dosages of 3–5%. Films produced with Coraplast VCI maintain transparency and flexibility, while ensuring robust defense against corrosion even in harsh transport and storage environments.

## Product Range

Coraplast offers VCI Masterbatch to customer needs to suit required concentration, polymer carrier, and intended applications to ensure cost-efficiency and optimal protection. Coraplast VCI 217 is designed for low-load applications such as light-duty LDPE/LLDPE films for small parts packaging, to Mid-load Masterbatch suitable for medium-to-thickness films and shrink applications, providing extended protection & for high-load, heavy-duty formulation for industrial covers, export packaging, and long-term storage in challenging environments.

## How it works:

VCI chemistry functions by releasing corrosion-inhibiting molecules into the air inside the packaging. These molecules migrate to the surface of the enclosed metal, forming a strong but invisible protective ionic layer. This barrier prevents oxygen, moisture, and other corrosive elements from attacking the metal surface. Once the packaging is removed, the protective layer dissipates, leaving the metal surface clean, dry, and immediately ready for use or further processing.



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## Key Benefits

- Comprehensive Metal Protection – Effective for ferrous and non-ferrous metals including steel, aluminum, copper, brass, and alloys.
- Dual Action Defense – Provides both vapor-phase protection (reaches recessed areas and cavities) and contact-phase protection (direct surface barrier).
- Cleaner Supply Chain – Eliminates the need for messy oils, greases, and desiccants traditionally used for corrosion protection.
- Safe and Sustainable – Nitrite-free, heavy-metal-free, and compliant with REACH and RoHS regulations. Eco-friendly options available.
- Food-Contact Safety – Certain grades meet indirect food-contact standards, enabling broader usage scenarios.
- Ease of Processing – Compatible with standard LDPE, LLDPE, and PP extrusion, thermoforming, and moulding quipment without modifications.

## Applications

- Automotive Industry – Packaging of critical engine and body components, bearings, fasteners, and spare parts.
- Electronics – Protection of sensitive circuits, connectors, and assemblies from oxidation during storage and shipment.
- Industrial Manufacturing – Wrapping and storage of semi-finished and finished machine parts, tools, and dies.
- Aerospace and Defense – Ensuring high-value precision components remain corrosion-free during long-term storage.
- Heavy Machinery – Covering large equipment and structures with VCI films for multi-month to multi-year protection.

## Compliance & Sustainability

Coraplast VCI formulations are nitrite-free, non-toxic, and compliant with major international regulations including REACH, RoHS, and applicable FDA standards. By reducing reliance on traditional corrosion prevention methods that often involve toxic chemicals or excessive plastic layering, Coraplast VCI contributes to cleaner supply chains and improved sustainability profiles.

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