

# VOLATILE CORROSION INHIBITORS (VCI)

Papers, Plastic Films, Emitters



The use of Volatile Corrosion Inhibitors or VCI's, applied to paper and plastic products, have been gaining a strong following in recent years, and in most cases, the VCI products have been used as a suitable alternative for oil-based anti-rust coatings.

Primarily used for steel or ferrous materials, VCI papers and plastics are used to wrap metal components requiring rust and corrosion protection.

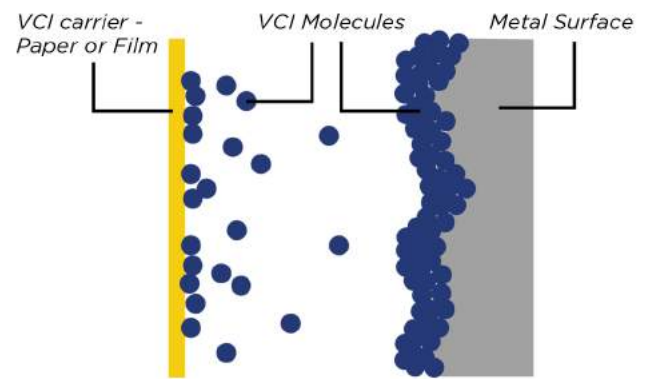
However, VCI products tailor-fit for non-ferrous metals such as Aluminum or Copper are also available in the market.

## HOW DOES IT WORK?

Papers or plastic films are coated or impregnated with VCI additives, the choice of which is dependent on the type of metal to be protected. When the metal part is enclosed or wrapped with the VCI's, vapors are emitted which saturate the surrounding air-space.

The vapors are adsorbed onto the metal surface forming a mono-molecular protective layer.

The layer remains on the metal until the package is opened, at which point the vapors escape, leaving a clean and rust-free surface.



## ADVANTAGES & BENEFITS

**1. Elimination of anti-rust oil, or at least the reduction of its usage** - while proven to be also effective in protecting metals, oils or liquids presents itself as an environmental concern, as it still needs to be disposed properly once its efficacy goes down. Reducing the use of oils obviously reduces over-all costs of production, a big consideration for most companies.

**2. Streamlining of processes** - The process to provide rust protection and packaging is consolidated into one single step, freeing up manpower to focus on more productive tasks, as well as improving the over-all cycle-time for production. Moreover, the step of degreasing or washing the anti-rust oils' coating from the metal components is also eliminated, as the unboxed or unwrapped parts will be dry, but rust and corrosion-free.

## VCI PAPERS

Kraft paper coated with VCI can be used to completely wrap metal products, as interleaves, or as case lining during storage or transport.

### 1. Choose your additive based on the type of metal to be protected

| Metal                            | Additive                       | Metal                              | Additive |
|----------------------------------|--------------------------------|------------------------------------|----------|
| Ferrous, Silicon Steel           | SFD-306-67-PO<br>SFD-306-92-PA | Silicone Steel                     | SFH-110  |
| All Ferrous Metals, and Aluminum | SFH Series                     | Galvanizing Passivated Steel Plate | SDF-305  |
| Multi-Metals                     | SFD-308                        | Tinned Steel Plate                 | SFD-318  |
| Copper and Alloys                | SFT-502                        | Electrogalvanized Steel Plate      | SFD-309  |
| Cold Rolled Plate                | SFH-104                        | Color-Coated Plate                 | SFD-310  |



## 2. Select Paper Type

Kraft



Crepe



## 3. Select Linings or Coatings

Plain, with PE coating, with Woven Fabric, with PE and Fabric

| Model | Structure   | Application  |  |  |
|-------|---|--|--|--|
| PO    | VCI Paper   | Light-duty anti-corrosion packaging  |  |  |
| PA    | PE Film<br>VCI Paper                                |  |  |  |
| WO    | VCI Paper (Crepe)                                   |  |  |  |
| WA    | PE Film<br>VCI Paper (Crepe)                        | Winding anti-corrosion packaging   |  |  |
| WB    | PE Film<br>PE Strip<br>VCI Paper (Crepe)            |  |  |  |
| WC    | Woven Fabric<br>PE Film<br>VCI Paper (Crepe)        |  |  |  |
| PC    | Woven Fabric<br>PE Film<br>VCI Paper                | Heavy-duty Anti-corrosion  |  |  |
| PZ    | Woven Fabric<br>PE Film (High Barrier)<br>VCI Paper | Packaging High barrier, Low water vapor transmission rate and high physical strength |  |  |
| PD    | PE Film<br>Woven Fabric<br>PE Film<br>VCI Paper     |  |  |  |
| PF    | PE Film<br>Cardboard Paper<br>PE Film<br>VCI Paper  | Separator, gasket, various cold-rolled sheet steel coil packaging core protection    |  |  |
| PL    | Woven Fabric<br>PE Film<br>VCI Paper<br>PE Film     | Waterproof packaging, Inner PE film has oil resistance                               |  |  |
| PM    | PE Film<br>Scrim<br>VCI Film                        | Heavy-duty anti-corrosion packaging  |  |  |

## 4. Select Thickness

from 70 gsm to 200 gsm

## 5. Select Form

Sheet, Roll or Special

## 6. Specify Dimensions

Other special paper types may be provided upon request, as well as special printing of labels for bonding purpose.



# VCI PLASTIC FILMS

Polyolefin resin is embedded with VCI to create Plastic Films in different forms to protect metal products from corrosion.

## 1. Select Film type

LDPE, Stretch Film, Bubble Wrap or Shrink Film



## 2. Select Film Color

Blue



Green



Yellow



## 3. Select Film thickness

from 40 to 120 microns

## 4. Select Linings or Coatings

Plain, with Aluminum Foil Coating, with Woven Fabric or both

## 5. Select Form

Bags (Flat, Guesset, Cube)



Sheets



Rolls



| Name                     | Model | Description | Product Format                            | Thickness (µm)              |                             |        |
|--------------------------|-------|-------------|---|-----------------------------|-----------------------------|--------|
| VCI Film                 | SF    | HF          | For ferrous metal                         | Roll type, Sheet form, Bags | 40, 60, 80, 100, 120        |        |
|                          |       | DF          | For multi-metal                           | Roll type, Sheet form, Bags | 40, 60, 80, 100, 120        |        |
|                          |       | DF          | J   | Anti static                 | Roll type, Sheet form, Bags | 80     |
|                          |       |             | JC  | Stretch film                | Roll type                   | 35, 50 |
|                          |       |             | SS  | Heat shrinking              | Roll type, Sheet form       | 180    |
|                          |       | DAF         | Safe, Nitrite free                        | Roll type, Sheet form, Bags | 80, 100                     |        |
| VCI film with lamination | SF    | HZ, DZ      | VCI film with Aluminum foil and PE fabric | Roll type, Sheet form, Bags | 195                         |        |
|                          |       | ZLF         | VCI film with Woven fabric                | Roll type, Sheet form       | Other                       |        |

## 6. Specify Dimension

Printing and special forms and sizes are available upon request.

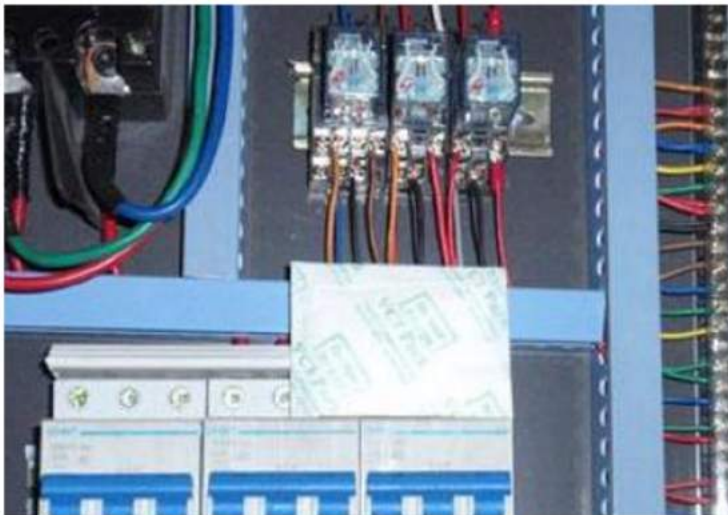




# VCI EMITTERS

VCI Powder is packed in pouch or packet to provide long lasting protection to metal surfaces even for humid conditions. Place it on wall, cabinets, and small enclosed spaces.

| Product Name     | Model    | Application   |
|------------------|----------|---|
| VCI Powder Pouch | SF/H-130 | Ferrous Metal   |
|                  | SF/D-331 | Ferrous Metal, Copper and Copper Alloy, Aluminum and Aluminum Alloy |
| VCI Emitter      | SF/D-360 |   |



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