ARMOR WRAP® VCI PAPER
35M

FEATURES AND BENEFITS

ARMOR WRAP® 35M VCI paper is a corrosion-inhibiting paper designed to protect ferrous metals. It is approved by the United States Military and is listed on the Qualified Products List (QPL) for MIL-PRF-3420. **ARMOR WRAP 35M** combines our proprietary ARMOR VCI Nanotechnology® (vapor corrosion inhibitor) with virgin, neutral pH Kraft paper to create a clean, dry packaging material to keep metal parts rust-free while in process, in storage or in transport. When metal parts are wrapped or enclosed in **ARMOR WRAP 35M**, the VCI releases protective vapors that form a layer on the metal surface, preventing rust.

ARMOR coats BOTH sides of **ARMOR WRAP 35M** paper with VCI, unlike most competitors' one-sided products, eliminating the guesswork from the application process. **ARMOR WRAP 35M** can be used alone or paired with other ARMOR VCI products for extended protection.

- **Easy-to-Use:** VCI coating on both sides of paper simplifies application
- **Continuous Protection:** provides up to three years standard protection
- **Safe:** non-hazardous formulation
- **Biodegradable:** all ARMOR WRAP VCI paper is biodegradable (excluding wax and poly-coated)
- **Sustainable:** recyclable, repulpable, and made from renewable sources
- **Clean:** prevents rust without the use of messy oils or greases
- **Several Options:** available in cut sheets, rolls, and paper bags with optional wax or poly-coating

PRODUCT OVERVIEW

All Armor Protective Packaging® products utilize our proprietary and time-proven ARMOR vapor corrosion inhibitor (VCI) Nanotechnology™. Oxidation occurs when an electrolyte (water, oxygen, etc.) is present on the surface of a metal. The corrosion process begins when electrons flow through the electrolyte from high energy areas (anode) to low energy areas (cathode) of the metal. ARMOR VCI blocks this reaction by passivating the surface and inhibiting the electrochemical current flow from anode to cathode. ARMOR VCI's protective vapors adhere to a metal surface to form an invisible film only a few molecules thick to protect metal from attack.

ABOUT ARMOR

Armor Protective Packaging® offers rust prevention and rust removal products that are clean, safe, easy, and that protect metals while in-process, in transport, or in storage. ARMOR combines its VCI (vapor corrosion inhibitor) Nanotechnology™ with packaging materials such as paper and poly film to create products that displace moisture on metal and guard against rust. ARMOR also offers desiccants, emitters, foam pads and its Metal Rescue® Rust Remover Bath and Dry Coat™ Rust Preventative. For more than 45 years, ARMOR has worked with customers from around the globe to provide rust prevention and rust removal solutions and to Take the Work Out of Your Workday!

ARMOR WRAP® VCI PAPER - 35M

ARMOR WRAP® 35M VCI paper is a 42# total weight (paper and VCI chemical) neutral pH, natural Kraft paper impregnated with Vapor & Contact Corrosion Inhibitor (VCI/VPI) formulation for ferrous metals. **ARMOR WRAP 35M** is designed for long-term storage of metals and is Calcium Chloride free.

ARMOR WRAP 35M is approved for MIL-PRF-3420H (Class 3, Style A, Form b and Class 2, Style B, Form b (Creped)) and JIS Z 1535 Class 2.

CONFORMS TO:

- FDA use in equipment packaging
- Global OEM companies
- RoHS – REACH Compliant
- NACE Std TM0208-2008
- MIL-PRF-3420H and JIS Z 1535 Class 2

National Stocking Numbers (NSN) 8135-00-664-0015
8135-00-810-0064, 8135-00-664-4010, 8135-00-664-4012,
8135-00-810-0485, 8135-00-810-0481, 8135-00-985-7242

Compatibility of ARMOR WRAP with Metals

Metal to be Protected	ARMOR WRAP® Papers		
	R	MPI	Global
Aluminum	○○	★★★	★★
Aluminum Bronze	○○	★★	★★
Aluminum Magnesium alloy	○	○	○
Brass	○○	★★★	★★
Bronze	○○	★★★	★★
Cadmium	○	★★★	★★
Cast Iron	★★★	★	★★★
Chromium	○	★★	★★
Constantan	○○	★★★	★★★
Copper	○○	★★★	★★
Galvanized	○○	★★★	★★
Lead	○	○	○
Molybdenum	○○	○○	○○
Nickel	○○	★★★	★★★
Nickel Silver (CU, Ni, Zn)	○○	★★★	★★
Silver	○○	★★	○○
Solder (Pb, Sn)	○	○	○
Steel	★★★	★★	★★★
Tin (Pure)	★★★	★★★	★★★
Tinned Steel	★★★	★★★	★★★
Zinc	○○	★★★	★★

Compatibility Key

★★★ **Complete Protection**

★★ **Good Protection**

★ **This product will protect this metal from corrosion; however, a more suitable formula may be available.**

○ **Testing is recommended**

○○ **Not Compatible**

Shelf Life & Storage of ARMOR VCI Products

When ARMOR WRAP VCI paper **sheets** are stored properly (nested together and wrapped or in some sort of closed container), the shelf life is two years from the date of manufacture. Due to the way VCI is emitted from the packaging material, ARMOR WRAP VCI paper **rolls** have a longer shelf life of up to three years when stored properly. VCI papers are hygroscopic (absorbs moisture from the environment) so it is important to store in original packaging or enclosed inside a container. After VCI paper has been exposed to the atmosphere for a period of 24 hours, remove the outside layer of paper from a roll or the top four sheets from a stack of cut sheets and dispose of them prior to using the rest of the product.

For best results, do not leave ARMOR VCI packaging out in an open environment, either indoors or outdoors. Keeping it in its original packaging or enclosed inside a container ensures that the vapors remain in the packaging. As temperature and humidity levels increase, the rate of the volatilization of the chemicals contained in the packaging also increases, reducing the effectiveness and longevity of the product. Store in a dry environment with temperatures between 40°–110° F (5°– 43°C).

Note: While Shelf Life and Length of Protection are two separate characteristics of VCI packaging materials, they are somewhat interrelated. Shelf Life refers to how long the unused VCI packaging material can be stored prior to being put in use. Length of Protection refers to how long the VCI packaging materials provide protection once in use. In both cases the duration depends on the product's storage conditions.

Reusability

ARMOR WRAP is not recommended for re-use for three primary reasons:

1. The rate at which VCI chemical volatilizes out of the product into the surrounding environment when in use
2. The inability to properly track and monitor the amount of time the materials have been exposed to the environment
3. Potential contaminants on the packaging that can be transferred

For those instances when re-use is necessary, packaging must be free of dirt, holes, or other contaminants. Once these factors appear, it is best to use new, clean ARMOR VCI packaging. It is also important to note that the length of time the packaging material has been exposed to the environment (especially high heat/humidity) will greatly impact its effectiveness. Do not re-use VCI packaging more than two times. Please note, ARMOR cannot guarantee the amount of VCI that remains in the packaging upon re-use.

Length of Protection & Long-Term Storage

ARMOR VCI products are used to cover or wrap metal parts and surfaces. The continuous vaporization of this chemically treated packaging creates a safe, protective environment that effectively blocks out rust, corrosion and oxidation. Typically, ARMOR VCI packaging will protect parts for approximately three years of corrosion-free storage when used properly in normal warehouse conditions. However, by following the guidelines, it is possible to lengthen this time-frame considerably. The key element in protecting parts for long-term storage is that the part must be completely clean, prior to wrapping in ARMOR products. We recommend that parts be completely wrapped or enclosed in airtight packaging for best results and longest protection time.

Length of Protection & Long-Term Storage (continued)

ARMOR cannot control variable conditions like temperature, humidity, airflow, production and process methods, surface conditions of metals, employee training, and other factors beyond our control. Therefore, guaranteeing a specific protection duration is impossible. If warehouse conditions are expected to be severe (e.g., over 90°F and 75% RH), the use of additional rust prevention methods like Dry Coat™ RP or desiccants may be needed in conjunction with VCI packaging. Successful long-term storage requires adherence to all of these guidelines. It is important to test parts and packaging as extensively as possible prior to conducting any long-term storage project.

Guidelines for Successful Long-Term Storage

- It is necessary to wear gloves when coming in contact with metal, as fingerprints (which contain human oils and possibly contaminants) can cause a chemical reaction to the metal prior to wrapping in ARMOR packaging. Ensure that gloves are clean, and as they become dirty or contaminated, replace them with a new supply.
- Be sure your product is free of fingerprints, machining oils and acid or alkali residue. Neutral oils or a light rust inhibitor may be left on metal surfaces but may require laboratory testing to make sure there is compatibility between the VCI packaging and the oils. Make sure that coolants, RP liquids and/or other liquids used within the manufacturing process are tested regularly for concentration levels, pH, and are fully titrated regularly.
- Parts should be clean, dry, and free from corrosion before packaging. Clean your product, preferably with a petroleum solvent or solvent emulsion cleaner. ARMOR VCI packaging will help *prevent* corrosion; however, it will not remove corrosion that has already occurred. To remove rust, ARMOR offers Metal Rescue® Rust Remover Bath.
- Package clean parts immediately after processing, manufacturing or cleaning.
- Fully wrap parts with ARMOR WRAP® VCI paper without placing anything between the metal surface and the VCI paper.
- Store packaged parts in an area where the temperature and relative humidity are the most consistent possible. Do not store parts outside.
- While parts are in bins awaiting repackaging or further processing, cover them with either a sheet of VCI paper or by closing/folding the VCI bag to protect against liquids, water, and moisture. Ensure associates wear clean, dry gloves when handling parts.
- Pine, oak and corrugated are very acidic and can contribute greatly to corrosion issues. Avoid contact of metal with woods by placing ARMOR WRAP VCI paper between these materials.
- Properly train employees responsible for packaging or processing metal parts to ensure they understand the purpose and application of VCI to effectively utilize these specialized products.

Properties

Products contain no secondary amines.

ARMOR WRAP products comply with directive 2002/95/EC (RoHS and RoHS2 2011/65/EU) of the European Parliament and do not contain Sulfur or halide compounds (fluorides, chlorides, bromides, or iodides).

Wash hands thoroughly after handling this product and before eating.

Revised 02/14/25