

RUST PREVENTION

CORROSION MANAGEMENT SOLUTIONS



ARMOR POLY FILM®

Crusader™ Film

FEATURES AND BENEFITS

ARMOR film technology sets industry standards for high performance and innovation. ARMOR's proprietary Bright Idea Technology™ provides visible proof under black light that VCI is present in all **ARMOR POLY®** products.

The **CRUSADER™** is a tough co-extruded VCI film for the most demanding corrosion inhibiting applications.

The **CRUSADER™** utilizes three layers of film with specific characteristics used to prevent corrosion, provide additional barrier protection, and increase durability and puncture resistance over mono-extruded VCI films.

The multi-layer film system results in a 80% decrease in oxygen transmission (5x barrier protection) compared with standard film.

ARMOR's proprietary VCI nanotechnology comes with over 30 years of industry experience. With service on 4 continents and in more than 25 countries, ARMOR is positioned to provide corrosion management solutions wherever and whenever you need them.

Conforms/Approved By:

- FDA for use in equipment packaging
- Global OEM companies
- RoHS Compliant
- NACE Std TM0208-2008



APPLICATIONS

CRUSADER™ Premium VCI film is tough, superior corrosion inhibition with excellent barrier properties for export shipments. It is ideal for metal parts or equipment that needs to be stored corrosion-free for several years and/or re-used multiple times within a closed-loop shipping cycle.

Non-toxic, environmentally friendly, and recyclable.

WHY ARMOR?

Armor Protective Packaging® provides the industry's cleanest, easiest, safest and most effective corrosion management systems for metal products to a global customer base. ARMOR's full line of vapor corrosion inhibitor (VCI) packaging products, desiccants and our rust removal and prevention liquids are designed to protect metals before, during and after transport or storage. ARMOR's industry reputation as a trusted business partner has been built by serving our customers and preserving their investments for more than a quarter-century.



TECHNICAL DATA

ARMOR PROTECTIVE PACKAGING CORROSION MANAGEMENT SOLUTIONS

THE CRUSADER™

Product Overview

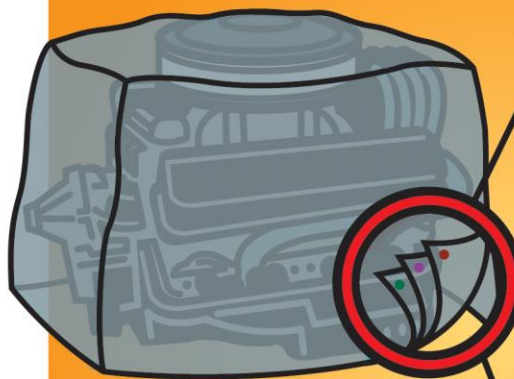
The CRUSADER™ utilizes advanced polyethylene film extrusion to form a construction of three engineered layers that provide increased durability and outstanding corrosion inhibition.

Outside Layer: Low density polyethylene with super hexene for added toughness and medium slip for proper feel and tape adhesion.

Center Layer: Proprietary high density polyethylene barrier resin provides superior strength and an excellent barrier to elements that cause corrosion.

Inside Layer: ARMOR POLY® VCI – Linear low density polyethylene with high concentration of multi-metal VCI and specialty catalyzed polymerization resin for added strength and increased permeability.

CRUSADER™ MULTI-LAYER FILM SYSTEM



● OUTSIDE LAYER :

Low density polyethylene (LDPE) with proprietary additives for superior strength and puncture resistance and medium slip for proper feel and tape adhesion.

● CENTER LAYER:

Proprietary high density blend which provides superior strength and an excellent barrier to elements that cause corrosion - a 80% DECREASE in oxygen transmission (5x barrier protection).

● INSIDE LAYER:

LDPE with high concentration of multi-metal AN-OX® VCI Technology protection and specialty catalyzed polymerization resin for added strength and increased permeability.



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Parameters

GAUGE (range available: .002" to .008")	<u>4 mil</u>	<u>6 mil</u>
TENSILE STRENGTH - ASTM TEST #D-882		
Machine Direction (PSI)	5,400 +/- 10%	5,400 +/- 10%
Transverse Direction (PSI)	5,000 +/- 10%	5,000 +/- 10%
TEAR STRENGTH - ASTM #D-1922		
Machine Direction (grams)	1,000 +/- 10%	1,150 +/- 10%
Transverse Direction (grams)	1,900 +/- 10%	2,100 +/- 10%
ELONGATION – ASTM #D-882		
Machine Direction (%)	800 +/- 10%	950 +/- 10%
Transverse Direction (%)	1,000 +/- 10%	1,150 +/- 10%
SEAL STRENGTH – ASTM #D-882		
Percent	85% of film	85% of film
Sealing Temperature	360° - 400° F	360° - 400° F
Puncture Resistance; Dart (Joules)	1.9 +/- 10%	2.7 +/- 10%
Puncture Resistance; Dart (grams)	380 +/- 10%	540 +/- 10%
Oxygen Transmission Rate (cm ³ /100in ²)	60 +/- 10%	40 +/- 10%
TYPE OF VCI COMPOUND	Proprietary	
VCI CONTENT	ARMOR VCI Resin 8% first layer	

Proper Storage

Material should be kept in original wrapping or equivalent during storage of partial rolls or sheets (overnight, weekends, or holidays).

Armor Protective Packaging® recommends testing your product's compatibility with the Crusader™ in vapor phase and as a contact inhibitor.

CAUTION: Wash hands thoroughly after handling this product and before eating.

All products manufactured Armor Protective Packaging® are warranted to be first class products and free from defects in material and workmanship. Liability under this warranty is limited to the net purchase price of any of such products proven defective or at our option to the repair or replacement of said products upon their return to us transportation prepaid. All claims on defective products must be made in writing 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. We make no warranty, express or implied, as to the suitability of any of our product for any particular use, and we shall not be subject to liability from any damages resulting from their use in operations not under our direct control. This warranty is exclusive of all other warranties, express or implied, and no representative of ours or any other person is authorized to assume for us any other liability in connection with the sale of our products.

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