

# RUST PREVENTION

## CORROSION MANAGEMENT SOLUTIONS



### ARMOR POLY FILM®

#### Defender™ 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 **DEFENDER™** is an economical, co-extruded VCI film that provides a high level of protection, without the high costs. The **DEFENDER™** 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 **DEFENDER™** multi-layer film system results in a 60% decrease in oxygen transmission (2.5x 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.

Non-toxic, environmentally friendly, and recyclable.



#### APPLICATIONS

ARMOR'S **DEFENDER™** saves money because unlike 99% of VCI bags in the packaging industry, the **DEFENDER™** contains resin on the inside layer only, not on the outside layer where it's never utilized. This results in a 10-15% product savings.

#### 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 DEFENDER™

#### Product Overview

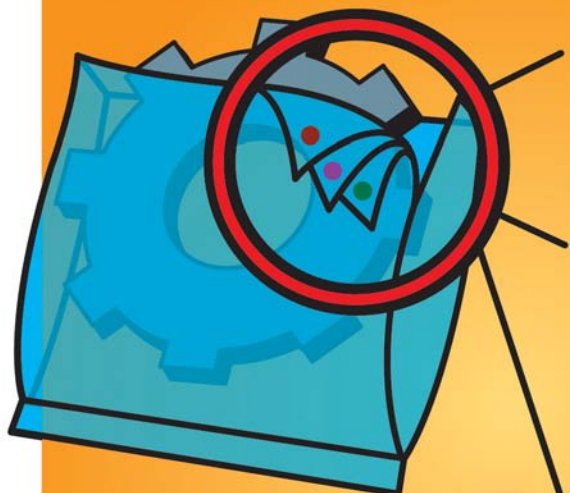
**DEFENDER™** poly film utilizes advanced polyethylene film extrusion to form a construction of three engineered layers that provide increased durability and outstanding corrosion inhibition.

**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.

### DEFENDER™ MULTI-LAYER FILM SYSTEM



- **OUTSIDE LAYER:**  
Low density polyethylene (LDPE) with additives for strength 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 60% DECREASE in oxygen transmission (2.5 X barrier protection).
- **INSIDE LAYER:**  
LDPE with high concentration of multi-metal AN-OX® VCI Technology protection, where you need it most.



# TECHNICAL DATA

## ARMOR PROTECTIVE PACKAGING CORROSION MANAGEMENT SOLUTIONS

### Parameters

GAUGE (range available: .002" to .008")	<u>2 mil</u>	<u>3 mil</u>
<b>TENSILE STRENGTH - ASTM TEST #D-882</b>		
Machine Direction (PSI)	4,400 +/- 10%	4,900 +/- 10%
Transverse Direction (PSI)	4,300 +/- 10%	4,800 +/- 10%
<b>TEAR STRENGTH - ASTM #D-1922</b>		
Machine Direction (grams)	550 +/- 10%	850 +/- 10%
Transverse Direction (grams)	1,000 +/- 10%	1,400 +/- 10%
<b>ELONGATION – ASTM #D-882</b>		
Machine Direction (%)	650 +/- 10%	800 +/- 10%
Transverse Direction (%)	800 +/- 10%	950 +/- 10%
<b>SEAL STRENGTH – ASTM #D-882</b>		
Percent	85% of film	85% of film
Sealing Temperature	340° - 380° F	340° - 380° F
Puncture Resistance; Dart (Joules)	0.9 +/- 10%	1.2 +/- 10%
Puncture Resistance; Dart (grams)	180 +/- 10%	240 +/- 10%
Oxygen Transmission Rate (cm <sup>3</sup> /100in <sup>2</sup> )	240 +/- 10%	105 +/- 10%
TYPE OF VCI COMPOUND	Proprietary	
VCI CONTENT	VCIR CT 102 Per FM 4.8.5	

### 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 Defender® 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.

Revised 01/6/11