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## Applications

- ▶ Electronic and mechanical enclosures
- ▶ Transmitter housings
- ▶ Equipment cases
- ▶ Field mounted equipment
- ▶ Stored equipment
- ▶ Goods during shipment
- ▶ Moisture sensitive products
- ▶ Computers
- ▶ Paper goods

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## Benefits

- ▶ Economical
- ▶ Easy installation
- ▶ Helps improve safety of personnel and equipment

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## Features

- ▶ Effective in frequently opened enclosures
- ▶ Backed with self-adhesive mounting tape
- ▶ High dielectric strength
- ▶ Non-toxic

## Quick Study

### Moisture and Corrosion Control Packets

provide the best protection against damage from relative humidity and corrosion for any enclosure or piece of equipment that is operating, in transit, or in storage. The contents of each packet will not affect or damage non-metal material and can withstand maximum temperatures of 176°F (80°C) and contact with bulk liquid water without impacting their effectiveness. All packets come with self-adhesive mounting tape, which allows for easy installation into any enclosure, even if the enclosure is frequently opened. They are constructed of a heat-sealed, semi-permeable membrane material filled with Humidisorb, X-Corrode, or Humidisorb Plus X-Corrode, depending on your application needs.

**X-Corrode Packets** provide protection against airborne contaminants that cause corrosion, such as Hydrogen Sulfide (H<sub>2</sub>S), Chlorine (Cl<sub>2</sub>), and salts. The X-Corrode formula provides a durable passivation of the surface of circuit component metals; other metals, such as aluminum and steel that may be present in an enclosure, are also passivated, but to a smaller degree. Tests have shown that once a metal surface was initially passivated by X-Corrode, the packet could be removed with corrosion protection remaining for weeks after. This means that frequently opened enclosures are also well protected by the X-Corrode packet.

When a packet is removed from its shipping bag and placed in an enclosure, the granules begin to slowly vaporize. The vapors diffuse through the packet material into the surrounding air space. Metal surfaces contacted by the vapor become passivated against corrosion by airborne contaminants. Metals commonly associated with electrical and electronic components receive maximum protection. These may include copper, copper alloys, tin, lead, zinc, chromate passivated iron, silver, cadmium and nickel chrome plate. Most other metals, including iron and aluminum, are also passivated, but not to the extent of protection afforded to copper and its alloys. Non-metal surfaces are not affected by the vapor. Vapors are carried throughout the enclosure by diffusion and thermal convection. As the air within the enclosure becomes saturated with X-Corrode vapors, vaporization of the inhibitor compound diminishes to the minimum rate required for replenishing lost vapor. The vapor concentration is typically in the lower parts per million range and, therefore, does not present any flammable or explosive hazard.

Typically, these packets last up to two years. X-Corrode packets are frequently used in conjunction with Humidisorb packets. Together they provide long-term moisture and corrosion control.

Additional information such as material safety data sheets is available.



# Model Numbering & Additional Part Numbers

Your model number is determined by your specific needs. Choose options below.

Part number	Packet size	Volume protected
<b>XC-1<sup>1</sup></b>	<b>2" x 2"</b>	<b>1 cubic foot</b>
<b>XC-5<sup>1</sup></b>	<b>4" x 4"</b>	<b>5 cubic feet</b>
<b>XC-40<sup>1</sup></b>	<b>4" x 4"</b>	<b>40 cubic feet</b>

1. 2" x 2" and 4" x 4" packets are shipped standard in quantities of 10 units (packets) per poly-zip shipping bag. As an option, packets are available in individual, heat-sealed, poly shipping bags. To order this option, simply add "I" to the end of the part number, (i.e. HST 4x4-I). These are available in multiples of 10 units (packets) only. Prices reflect cost per individual unit (packet).

Packets are supplied with self-adhesive tape unless specified otherwise.

## Understanding Relative Humidity

When choosing the correct packet for your particular application, there are two factors you should consider before making a decision. First, you need to calculate the volume of the enclosure for which you intend to protect by multiplying it's length, width, and height. Different sized packets have a direct relationship to the size of the intended enclosure; thus, the bigger the enclosure, the bigger the packet is needed to protect it. Second, you should determine whether the enclosure will be opened frequently or remain closed for the most part.

Once you have the volume of the enclosure, you must find the correct Packet Capacity Ratio (PCR) for that particular volume in the table below. Please note that you should always use the largest value that is closest to the volume of your enclosure. For example, if the volume of your enclosure is 3 ft<sup>3</sup> (or 5,184 in<sup>3</sup>), you would look under the column for 4 ft<sup>3</sup> (or 6,912 in<sup>3</sup>).

The numbers listed under each column refer to the Packet Capacity Ratio, which is the relative measure of the packet's capacity as compared to the amount of water vapor in an enclosure at 70°F with a 50% Relative Humidity level—the ratio of moisture in the air to the moisture capacity of air at a given temperature.

Choose a packet size and quantity based on the PCR numbers associated with the enclosure volume. The higher the PCR number, the more effective the packet size will be for a given enclosure. Keep in mind that frequently opened enclosures or enclosures that are susceptible to rapid changes in RH conditions require a higher PCR number, typically 10 or above. Enclosures that are always stored indoors and/or infrequently opened require a lower PCR number of 5 to 9.5. For example, if you look under the column for 1 ft<sup>3</sup> (or 1,728 in<sup>3</sup>), the best protection for an enclosure with that volume would be from two 4" x 4" packets because it has the highest PCR number associated.

**Packet Capacity Ratio (PCR)<sup>A</sup> Table**

Packet Size	Packet Quantity	Packet Capacity <sup>B</sup>	Packet Capacity Ratio (PCR) Number							
			200 in <sup>3</sup>	1 ft <sup>3</sup>	2 ft <sup>3</sup>	5 ft <sup>3</sup>	10 ft <sup>3</sup>	15 ft <sup>3</sup>	30 ft <sup>3</sup>	45 ft <sup>3</sup>
2" x 2"	1	0.3	9.5	1.0	-	-	-	-	-	-
2" x 2"	2	0.6	19.0	2.0	-	-	-	-	-	-
4" x 4"	1	5.8	191.0	22.0	11	4.5	-	-	-	-
4" x 4"	2	11.6	382	44	22	9.0	-	-	-	-
7" x 13"	1	43.2	-	-	83	33.0	16.5	11.0	5.5	4.0
7" x 13"	2	86.4	-	-	165.5	66.0	33.0	22.0	11.0	8.0
Total Water Vapor <sup>C</sup>			0.0302	0.260928	.521856	1.30464	2.60928	3.91392	7.82784	11.74176

A. PCR is derived by dividing Humidisorb's capacity at 50%RH level by the grams of water vapor in an enclosure at the 50% RH level.

B. Packet's capacity in grams of water vapor.

C. Total amount of water vapor in the indicated size enclosure at 50% RH and 70°F

### Local Distributor:

### Manufacturer

**A+ Corporation, LLC**

**41041 Black Bayou Rd.**

**Gonzales, LA 70737**

*Call for expert product application assistance:*

