



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.

Humidisorb Packets are filled with a self-regenerating desiccant that can absorb and release enormous quantities of moisture from surrounding air without becoming saturated. When first placed in service, a packet of granules will begin rapid absorption of moisture. The packet will absorb at least five to ten times more moisture than the conventional desiccant before coming to equilibrium with the relative humidity (RH) of surrounding air. This will usually take several weeks to occur, even in very humid environments. During periods when the enclosure RH is lower than its long-term average the packet releases moisture in vapor form. The moisture desorption process cannot wet the air above its average RH level. When enclosure RH tends to rise above its average level, the packet absorbs moisture. By absorbing moisture when the RH rises, and releasing some of the vapor phase moisture (regenerating) when the RH drops, the packet maintains a constant RH within the enclosure that is equal to the long-term average humidity.

Normally, these packets do not require replacement. During cycles of absorption and desorption the packet may change back and forth between putty-like and hard states. The packet may become putty-like as the granules absorb moisture and stick together. The granules, having once been putty-like, continue to stick together during periods of desorption; therefore, the packet may feel hard. This is a normal occurrence and will not alter the product's effectiveness.

Humidisorb packets are perfect for use in a typical electrical/electronic enclosure because with the ambient temperature changes inside each enclosure throughout the day, very large swings of RH can occur. Enclosure RH can spike to very high levels for short periods, especially early in the morning when temperatures are generally at their minimum. As the air inside the enclosure cools and contracts, moist external air is drawn into the enclosure. Moisture adsorbs on the cooler surfaces inside the enclosure. When the ambient temperature rises, air within the enclosure expands and is forced out, leaving behind some of the adsorbed moisture. Most of the corrosion and stray electrical currents that occur in enclosures result from daily RH spikes. Humidisorb packets are designed to control the spikes by maintaining a constant, low level of humidity in an enclosure over long periods of time.

Additional information such as material safety data sheets is available.

Applications

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

Benefits

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

Features

- ▶ Self-regenerating
- ▶ Five to ten times greater moisture absorbing capacity than ordinary desiccants such as silica gel
- ▶ Effective in frequently opened enclosures
- ▶ Backed with self-adhesive mounting tape
- ▶ High dielectric strength
- ▶ Non-toxic



Model Numbering & Additional Part Numbers

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

Part number	Packet size	Volume protected
HST 2x2 ¹	2" x 2"	200 cubic inches
HST 4x4 ¹	4" x 4"	2 cubic feet
HST 7x13 ²	7" x 13"	25 cubic feet

- 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).
 - These are available in multiples of 5 units (packets) only. Prices reflect cost per individual unit (packet).
- Packets are supplied with self-adhesive tape unless specified otherwise.

Choosing the Correct Packet

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 ft³ (or 5,184 in³), you would look under the column for 4 ft³ (or 6,912 in³).

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 ft³ (or 1,728 in³), 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)^A Table

Packet Size	Packet Quantity	Packet Capacity ^B	Packet Capacity Ratio (PCR) Number							
			200 in ³	1 ft ³	2 ft ³	5 ft ³	10 ft ³	15 ft ³	30 ft ³	45 ft ³
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 ^C			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

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