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REST WITHOUT RUST

Comparison of Desiccants

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Test:	Comparison of Different Desiccants
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Dated	May 25, 2007

Scope:

Comparison of Hi-Tech VCI+Desiccant with Clay, Calcium Oxide, Molecular Seive, CaSO4

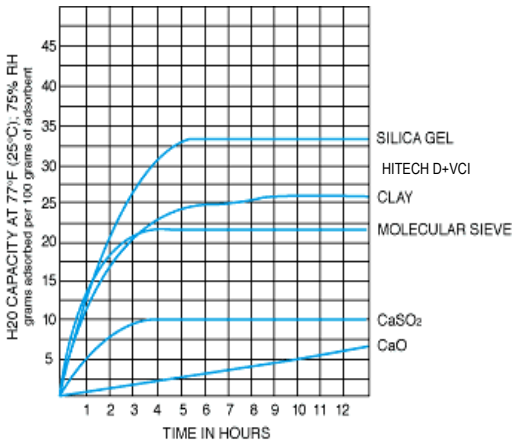
Experiment:

Samples were subjected to Climatic Chamber and the weight gain over time and over increasing humidity was calculated.

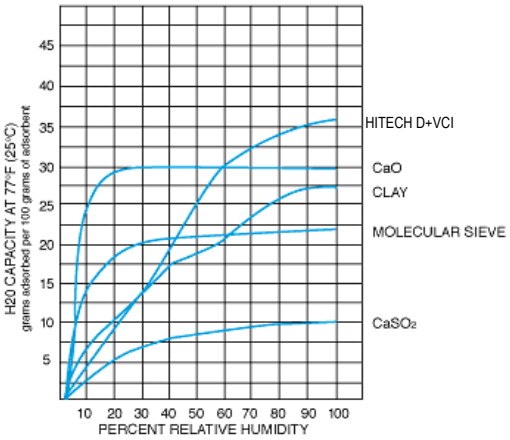
Results:

Graph1 depicting absorption capacity over Time
Graph 2 depicting absorption capacity over increasing Relative Humidity

GRAPH 1



GRAPH 2



Discussion:

Comparing the rate of absorption as well as the absorptive capacity, it is evident from the graphs above that Hi-Tech material has the highest absorption amongst different desiccants available and is 30% more effective than Clay.

Graph 1 shows that Hi-Tech D+VCI has the fastest absorption rate and highest capacity

Graph 2 shows that Hi-Tech D+VCI has the highest rate of absorption with the increasing humidity and highest capacity.

Our Desiccant +VCI pouches are bundled with special chemicals which are highly hygroscopic compared to commonly used materials. These bring down the humidity levels at a much higher rate as well as to much lower levels.

The VCI chemicals enclosed in our pouches are highly evaporative and have the tendency for complete evaporation within 4-5 hours of placing these inside the pallet. Such a quick action results in instantaneous treatment of humidity on the placement of the pouches inside the pallet.

These inferior and cheaper desiccants donot work effectively and allow room for moisture to cause ingression on the components. Also when released back to the atmosphere these can cause rusting on the components in vicinity.

We would hence like to caution you to evaluate the risk involved in choosing any inferior desiccating materials.

Lay Mans Test:

Test 1: To check the absorptive capacity
Take Hi-Tech Desiccant+VCI pouch, S1
Take any other comparitive pouch, S2
Weigh the samples S1 & S2 and note weight as W1 & W2
Submerge in water for 1 minute and take the samples S1 & S2 out of water
Weigh the samples S1 & S2 again as W3 & W4

Calculate the weight gained in terms of percentage weight absorbed over its own weight

% weight gain by sample 1= (W3-W1)/W1
% weight gain by sample 2 = (W4-W2)/W2

The above percentages will show which sample absorbed highest weight compared to its own weight.

Test 2: To check the retention capacity
Take S1 & S2 after Test 1 after soaking in water.
Leave them in the air for 24 hours.
Weigh them after 24 hours and observe on the amount of moisture lost to the atmosphere
Check percentage weight lost again as per the above formula

Expected Observation:

You would observe that Hi-Tech D+VCI will absorb the highest amount of water in percentage and also retain the highest amount of water after 24 hours.

Where as the other sample will absorb only half the amount compared to Hi-Tech and also lose much faster and more quantity to the atmosphere.

What it means in terms of Anti-Corrosion Packaging & Protection?

Hi-Tech VCI is capable of absorbing faster and higher quantities and helps in reducing the relative humidity faster and upto lower levels.

The retaining capacity indicates that the product will not lose moisture back to the atmosphere over time and even operates at higher temperatures with the better efficacy.