# Test Report
# No. 5700/05

## Testing of the water vapour absorption of different desiccant products

**Client**

**Absortech International AB**
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### Content of the order

Samples of different desiccant products were supplied to the BFSV on August 09, 15, 22, 2005 (Description of the products see page 2).

It was intended to examine the water vapour absorption of all products under the condition of daily climate changes which can occur during container transport.
The climate changes were simulated by using a climatic chamber.

Test duration: August 25, 2005 – September 25, 2005 (31 days)

### Summarizing result

The total water vapour absorption of the different desiccant products after 31 days is shown in the table on page 4.

The curves showing the absolute water vapour absorption of the desiccant products during the entire test period are shown in the diagrams in Appendix 1.

| | | |
|---|---|---|
| **Date** | **:** | October 17, 2005 |
| **Pages** | **:** | 4 |
| **Appendix** | **:** | 1 |
| **Official in Charge** | **:** | Dipl.-Ing. W. Reimers |

## 1. Description of the desiccant products

| Product | Media | Design | Gross weight |
|---|---|---|---|
| **Absorpole** | Calcium Chloride | Rigid plastic | mean: 1376 g |
| **Superdry Dry Pole 1000** | Calcium Chloride and starch powder | outside: cardboard<br>inside: flexible plastic | mean: 1168 g |
| **Superdry Type PS 1000** | Calcium Chloride and starch powder | Flexible plastic | mean: 1023 g |
| **Nordic Magnum 750** | Calcium Chloride and starch powder | Flexible plastic | mean: 836 g |
| **TCe** | Calcium Chloride | Rigid plastic | mean: 2193 g |
| **Absortop** | Calcium Chloride | Rigid Plastic | mean: 2392 g |

| Absorpole | Superdry Dry Pole 1000 | Superdry Type PS 1000 | Nordic Magnum 750 | TCe | Absortop |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

## 2. Performed test

Samples of each desiccant product were placed in a climatic chamber
(rigid products: standing, flexible products: hanging):

- Absorpole: 3 samples
- Superdry Dry Pole 1000 3 samples
- Superdry Type PS 1000 3 samples
- Nordic Magnum 750 2 samples
- Tce 2 samples
- Absortop: 3 samples

The water vapour absorption was determined by daily weighing and by calculating the mean value of the single measurements. The figures for the weekends were interpolated.

Climatic test chamber according to DIN 50 011 – 13 with continuous air circulation:

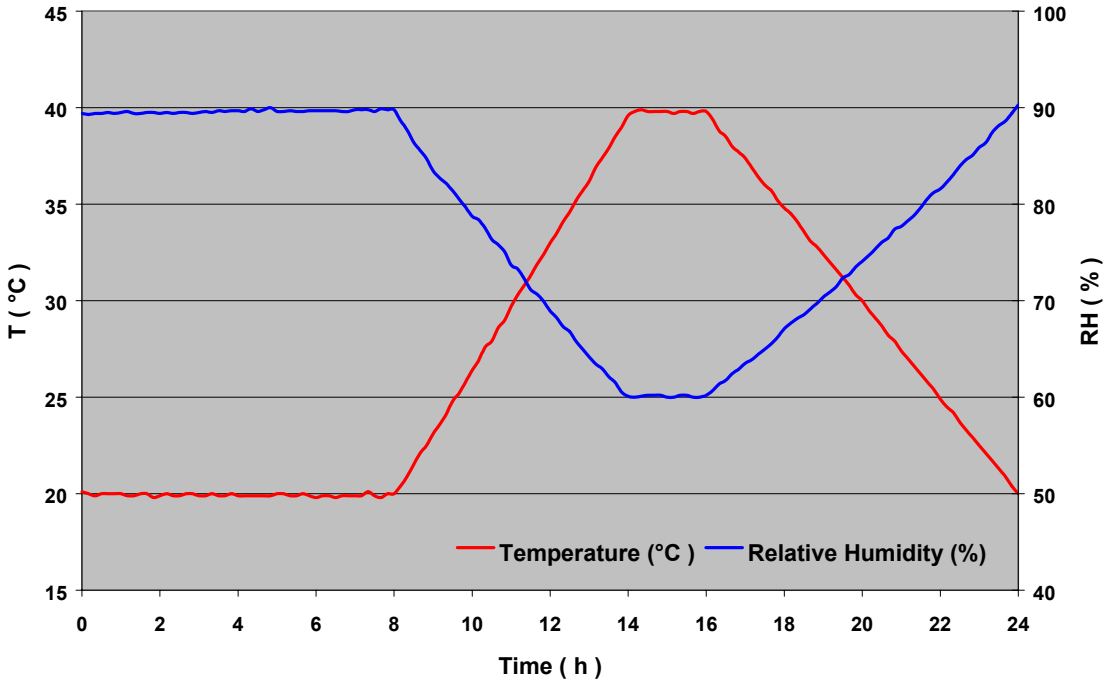
- Dimensions: 3,9 m x 3,3 m x 2,0 m
- Mean air speed: ca. 0,5 m/s
- Test climate: Simulation of daily climatic changes during container-transport:

  Climate cycle: (24 h):

  | | |
  |---|---|
  | 20 °C / 90 % RH | 8 h |
  | Changing to 40 °C / 60 % RH | 6 h |
  | 40 °C / 60 % RH | 2 h |
  | Changing to 20 °C / 90 % RH | 8 h |

- Test duration: 31 days

The following picture shows a climatic cycle (24 h) in the climatic chamber, (recorded with a temperature / humidity datarecorder).



## 3. Test results

**Total water vapour absorption of the desiccant products after 31 days:**

| Products | Absolute ( g ) | |
|---|---|---|
| | Single measurements | Mean values |
| **Absorpole** | 953 | 944 |
| | 944 | |
| | 935 | |
| **Superdry Dry Pole 1000** | 719 | 709 |
| | 657 | |
| | 750 | |
| **Superdry Type PS 1000** | 861 | 857 |
| | 838 | |
| | 871 | |
| **Nordic Magnum 750** | 596 | 572 |
| | 548 | |
| **TCe** | 485 | 525 |
| | 564 | |
| **Absortop** | 2148 | 2223 |
| | 2100 | |
| | 2421 | |

The curves showing the absolute water vapour absorption (mean values) of the desiccant products during the entire test period are shown in the diagrams in Appendix 1.
Diagram 1: All products
Diagram 2: Products without Absortop

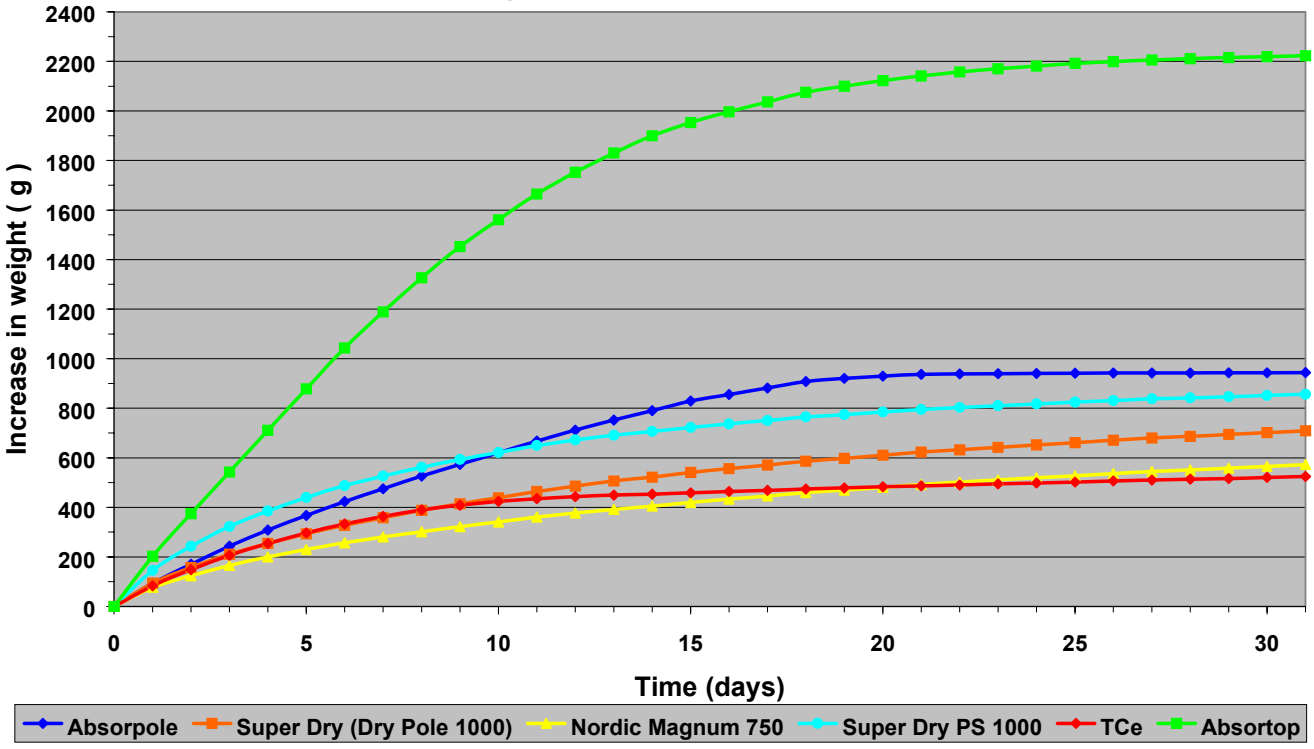
Director of the Institute — Official in Charge

Prof. Dr. H. Kontny — Dipl.-Ing. W. Reimers

Appendix 1 to Test Report No. 5700/05

# Testing of the water vapour absorption of different desiccant products

## Diagram 1: All products




## Diagram 2: Products without Absortop