Test Report
No. 5296/04

Testing of the water vapour absorption of different desiccant products

Client

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Content of the order

Samples of different desiccant products were supplied to the BFSV on January 05, 2004 (Description of the products see page 2).

It was intendet 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: January 07, 2004 – February 06, 2004 (30 days)

Summarizing result

The total water vapour absorption of the different desiccant products after 30 days is shown in the table on page 4:

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

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Official in Charge	**:**	Dipl.-Ing. W. Reimers

1. Description of the desiccant products

Product	Media	Design	Gross weight *)
Absorpole	Calcium Chloride	Pole (rigid plastic)	1527/1520/1526 mean: 1524 g
Absorbag	Calcium Chloride	Pole (flexible plastic)	1607/1577/1600 mean: 1595 g
Esorb	Fiber + $CaCl_2$	Pole (flexible plastic)	1213/1209/1197 mean: 1206 g
Esorb	Mineral + $CaCl_2$	Bag	1012/1011/1011 mean: 1011 g
Super Dry	Calcium Chloride	Pole (rigid cardboard)	1261/1315/1367 mean: 1314 g
Hydrotrap	Calcium Chloride	Pole (flexible plastic)	1424/1413/1408 mean: 1415 g

*) delivery state

Absorpole	Absorbag	Esorb (Pole)	Esorb (Bag)	Super Dry	Hydrotrap
					

2. Performed test

Three samples of each dessiccant product were placed in a climatic chamber.

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

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

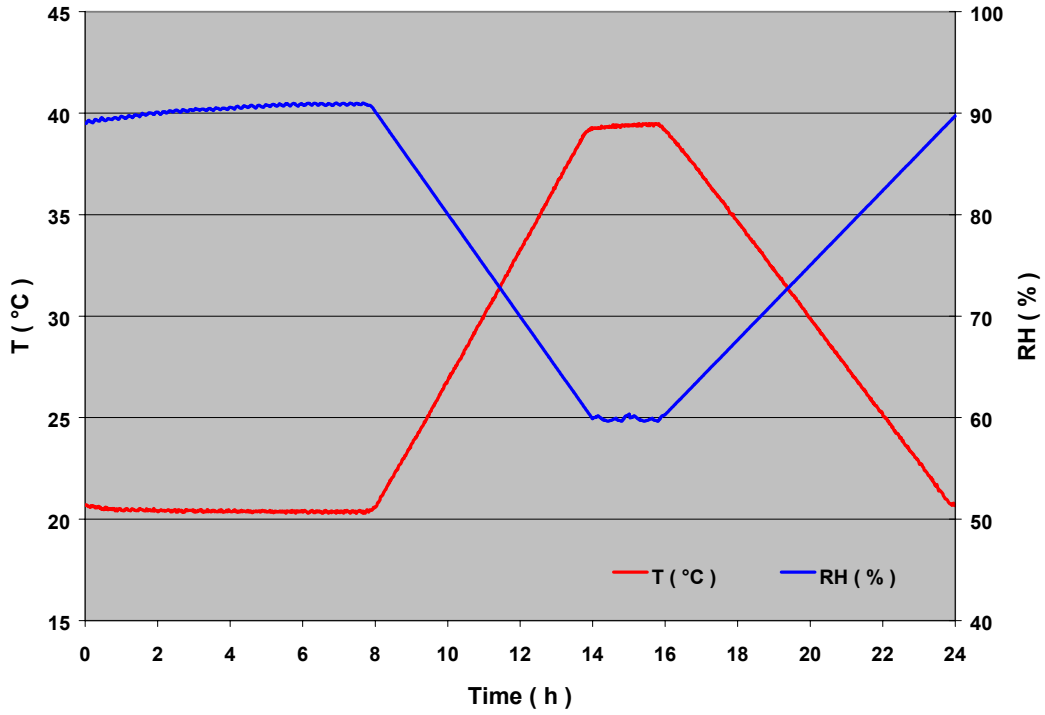
- Dimensions: 3,9 m x 3,3 m x 2,0 m
- Mean air speed: ca. 0,5 m/s
- Test climate: Simulation of daily climatic changes during container-transport:

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: January 07, 2004 – February 06, 2004 (30 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 30 days:

Products	Absolute (g)		Relative (%) (applied to the media weight)	
	Single measurements	Mean values	Single measurements	Mean values
Absorpole	737	734	64,5	64,4
	745		65,6	
	721		63,2	
Absorbag	1197	1182	80,5	80,1
	1087		74,6	
	1261		85,2	
Esorb (Pole)	736	764	69,4	72,6
	783		74,2	
	773		74,0	
Esorb (Bag)	442	438	44,0	43,6
	437		43,5	
	435		43,3	
Super Dry	340	360	34,6	34,7
	369		35,6	
	372		34,1	
Hydrotrap	480	461	35,2	34,1
	463		34,3	
	440		32,7	

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

Director of the Institute — Official in Charge

Prof. K.-R. Eschke — Dipl.-Ing. W. Reimers

Appendix 1 to Test Report No. 5296/04

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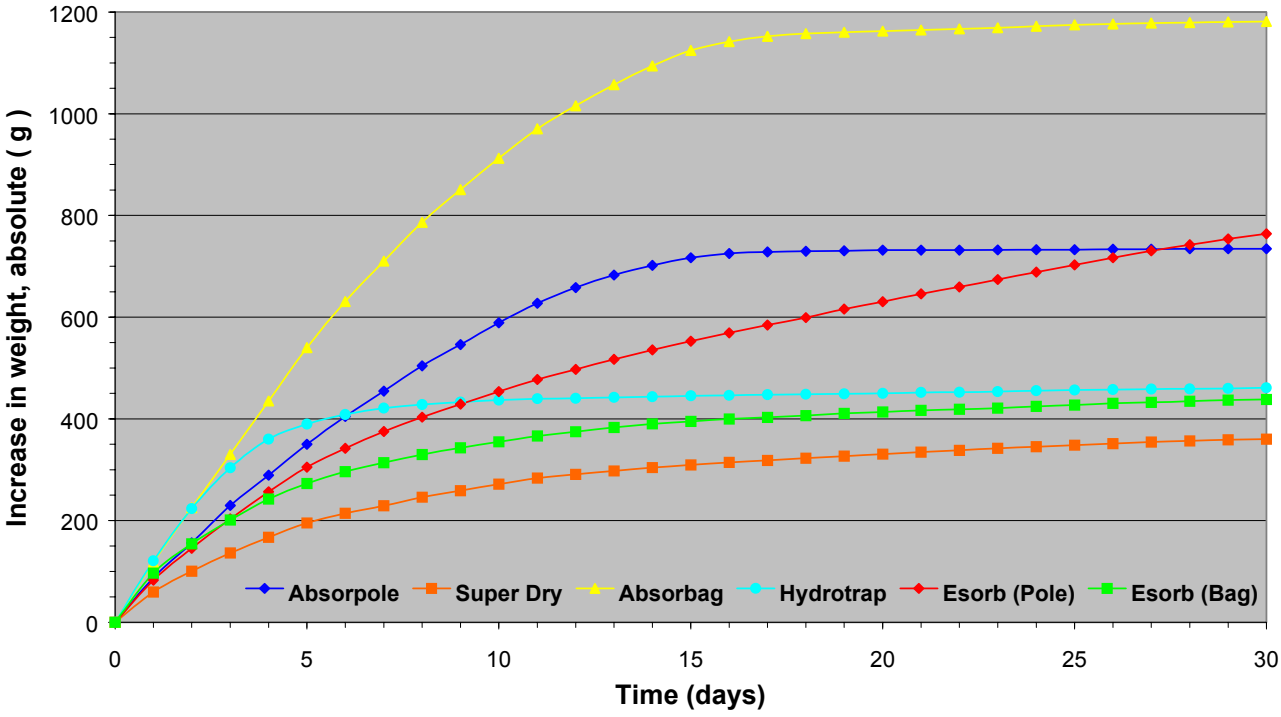
Water vapour absorption (absolute)



Water vapour absorption (relative)