

DuPont™ Tyvek™ Air Cargo Covers for Pharmaceuticals

Advanced protection for temperature-sensitive pharmaceuticals

Tyvek™ Air Cargo Covers vs. Competitive Thermal Covers: Case Study B November 11 – 13, 2014 – Homestead, Florida

TEST PROTOCOL

Objective

Measure and evaluate the temperature protection performance of each cover when exposed to identical conditions and without the influence of thermal mass (empty box test).

Pallet Configuration

- Three pallet loads, 48" x 40" x 48"
- Sixteen empty boxes (24" x 20" x 12") per pallet
- Four boxes per row

Products Tested

- Metallized spunbonded cover with approximate basis weight of 135 g/m² (MSB135)
- Metallized bubble wrap covers with approximate basis weights of 200, 235, and 415 g/m² (MBW200, MBW235, MBW415)
- Metallized Tyvek™ air cargo cover for pharmaceuticals with bottom (Tyvek™ WS)

Exposure Time

Test period from November 11 at 13:00 to November 13 at 11:00.

Weather Conditions

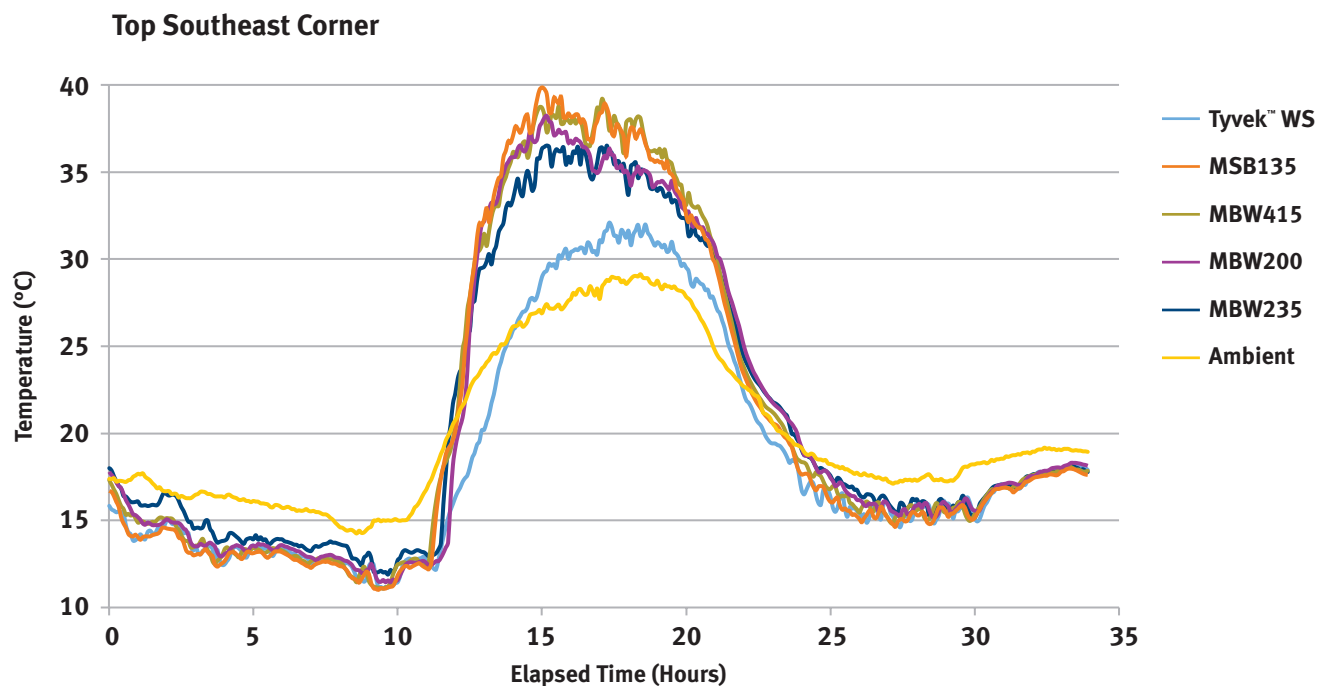
Full sun all day on November 12 with daytime temperatures in the low to mid 80°F range (26°C to 29°C).

Data Capture

Data logging conducted at known hot spot locations:

- Air temperature at top southeast corner, under cover
- Air temperature at south face center load, under cover
- Air temperature at top southwest corner, inside of box

TEST RESULTS



Observations

Graphs of temperature data demonstrate that Tyvek™ air cargo covers for pharmaceuticals offer better protection from elevated ambient temperature and upward thermal excursions caused by solar energy.

Conclusion

When exposed to high solar radiation and ambient temperature, Tyvek™ air cargo covers for pharmaceuticals mitigate upward temperature excursions, which facilitate cooler load temperatures.

**For more information, call us at 1-800-44-TYVEK
or visit www.aircargocovers.dupont.com**



All technical information set out herein is provided free of charge and is based on technical data that DuPont believes to be reliable. It is intended for use by persons having skill, at their own discretion and risk. The handling precaution information contained herein is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use are outside of our control we make no warranties express or implied in relation thereto and therefore cannot accept any liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under, or a recommendation to infringe any patents.

Copyright © 2015 DuPont. All rights reserved. The DuPont Oval Logo, DuPont™, Tyvek® and Tyvek™ are trademarks or registered trademarks of E.I. du Pont de Nemours and Company or its affiliates. K-28802 (03/15)

Technology by blueeye® is a registered trademark of Blueeye, LLC.