

# Results of Off-Gassing Test (Oddy Test)

**Dow Chemical Ethafoam™ & Sealed Air® CelluPlank® & CelluCushion®**

Conducted By

## **Artech Services**

*Specialists in the identification of pigments, corrosion products and the testing of materials for display and storage*

**David A. Scott, BA. BSc. CChem. PhD. FRSC. FIIC.**

Chair-UCLA/Getty Program in Archaeological and Ethnographic Conservation, and *Professor in Art History and Archaeology at UCLA, 2003 to present*

*BSc. in Chemistry, University of Reading, 1971; BA in Archaeological Conservation, Institute of Archaeology, London 1979; Ph.D. from University College London in 1982. Awarded FRSC in 1991 and FIIC in 1994. Lecturer in conservation at University College, Institute of Archaeology, Department of Conservation and Materials Science, from 1981-7. In 1987 he joined the GCI as Head of the Getty Museum Services Research Laboratory, Getty Conservation Institute, 1987-2003; and Manager, Artech Services.*

**The results of Oddy testing determined that Ethafoam™ and CelluPlank™/CelluCushion™ are safe for use in packing and the display of art objects. There were “no adverse reactions with the copper or lead coupons; no oxidation or change due to the test material was found”.**

**MASTERPAK**

145 East 57 Street – 5<sup>th</sup> Floor

New York, NY 10022

800-922-5522 – [www.masterpak-usa.com](http://www.masterpak-usa.com)

**Materials: Sample of white foam Cellulank 900 polyethylene foam**

**Date of Report: May 6th 2006**

**1. Procedures**

These materials were tested for volatile compounds which may create corrosion in display or storage using a variant of the standard "Oddy test". The production of volatile compounds was tested by isolating each sample to be tested in an air-tight glass vessel with polished metal coupons of lead, copper and silver. Distilled water was included in each vial to provide high relative humidity and accelerate any chemical reactions. A control set of coupons was also included. All coupons were exposed to temperatures of 40°C for a period of forty-eight days.

After this time period the coupons were removed and examined using a bench stereo microscope to assess the extent of corrosion present on each compared with the controls.

This procedure was augmented by use of the sodium azide test employing cut fragments of the fabric exposed under glass to the sodium azide test reagent for 3-4 minutes under the polarizing light microscope while examining the extent of the reaction under a glass cover slip.

**2. Results**

Control: no corrosion, oxidation or alteration was noted on the silver, copper or lead coupons.

Sealed Air sample: no reaction occurred with the sodium azide test, and after the usual exposure conditions to the silver foil, the silver foil did not undergo any tarnishing reactions. There were no adverse reactions with the copper or lead coupons: no oxidation or change due to the test material was found with this material

**3. Conclusions**

The scientific evaluation indicates that the Sealed Air product CelluPlank 900 is safe to use for the packing and display of art objects.

**For Artech Services by: David A. Scott, BA. BSc. CChem. PhD. FRSC. FIIC.**



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**Materials: Sample of white foam Dow-brand Ethafoam™ plank 4" & ¼" roll**

**Date of Report: June 6th 2006**

## **1. Procedures**

These materials were tested for volatile compounds which may create corrosion in display or storage using a variant of the standard "Oddy test". The production of volatile compounds was tested by isolating each sample to be tested in an air-tight glass vessel with polished metal coupons of lead, copper and silver. Distilled water was included in each vial to provide high relative humidity and accelerate any chemical reactions. A control set of coupons was also included. All coupons were exposed to temperatures of 40°C for a period of forty-eight days.

After this time period the coupons were removed and examined using a bench stereo microscope to assess the extent of corrosion present on each compared with the controls.

This procedure was augmented by use of the sodium azide test employing cut fragments of the fabric exposed under glass to the sodium azide test reagent for 3-4 minutes under the polarizing light microscope while examining the extent of the reaction under a glass cover slip.

## **2. Results**

Control: no corrosion, oxidation or alteration was noted on the silver, copper or lead coupons.

Masterpak sample: no reaction occurred with the sodium azide test, and after the usual exposure conditions to the silver foil, the silver foil did not undergo any tarnishing reactions. There were no adverse reactions with the copper or lead coupons: no oxidation or change due to the test material was found with this material

## **3. Conclusions:**

The scientific evaluation indicates that . . . Dow Ethafoam 4" and also ¼" thick are safe to use for the packing and display of art objects.

**For Artech Services by: David A. Scott, BA. BSc. CChem. PhD. FRSC. FIIC.**

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