



February 27, 2008
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IPS TE 00396-08

Ms. Mary McGuigan
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Bridge-Gate Alliance Group
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Sample identification: Seven samples of food containers

Date received: February 19, 2008

Tests requested: Infrared analysis and microwave durability testing

Purchase Order: VISA

Analyses of Food Containers

Integrated Paper Services, Inc. performed infrared analysis on three food containers and microwave durability testing on six types of food containers provided by Bridge-Gate Alliance Group. The results of the infrared analyses are summarized in Table 1 on page 1. Copies of the IR spectra are included with the hard-copy report. The results of the microwave durability testing are summarized in Tables 2 and 3.

If you have any questions, please call me.

Signed

Lucy A. Hayter
Associate Scientist, Paper Testing
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Infrared Spectroscopy

Three food containers were submitted for infrared (IR) analysis to determine the presence of proteins.

- 1) 100% Wheat straw (Jason's Deli)
- 2) Bagasse mixed container (3 compartments)
- 3) 100% Bagasse plate

Sample one, 100% wheat straw, is smooth on the outside with a patterned roughness on the inside. Samples two and three have smooth surfaces on the inside and a patterned roughness on the outside. Attenuated total reflectance infrared spectroscopy (ATR-IR) was performed on the inside and outside surfaces of each container. All six spectra were similar. There was little or no evidence for presence of a protein. The samples were then extracted with hot water. The extracts were examined using the cast film technique on an infrared (IR) transparent crystal. The extracts did not appear to have detectable amounts of protein present. However, the water extracts from sample three had relatively less natural carbohydrate extractives and more carboxylic acid salt(s) than sample two. The results are summarized in the following table. The IR spectra are enclosed.

Table 1. Infrared Spectroscopic Identifications

Sample Identification	Possible Infrared Spectroscopic Interpretations
Sample 1 - 100% Wheat straw (Jason's Deli)	
Outside surface (ATR)	Carbohydrates (e.g. cellulose) and an ester compound.
Inside Surface (ATR)	Carbohydrates (e.g. cellulose) and an ester compound.
Water Extracts (Bench)	Natural carbohydrate extractives from cellulose, carboxylic acid salt(s), and a small amount of an ester compound.
Sample 2 - Bagasse mixed container (3 compartments)	
Outside surface (ATR)	Carbohydrates (e.g. cellulose) and an ester compound.
Inside Surface (ATR)	Carbohydrates (e.g. cellulose) and an ester compound.
Water Extracts (Bench)	Natural carbohydrate extractives from cellulose, carboxylic acid salt(s), and little or no ester compound.
Sample 3 - 100% Bagasse plate	
Outside surface (ATR)	Carbohydrates (e.g. cellulose) and an ester compound.
Inside Surface (ATR)	Carbohydrates (e.g. cellulose).
Water Extracts (Bench)	Carboxylic acid salt(s), natural carbohydrate extractives from cellulose, and little or no ester compound.

Analysis by TFL

Quality review by JML

Date(s) of analysis: February 20-22, 2008