**Microbac Laboratories, Inc.**
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

## CERTIFICATE OF ANALYSIS

| | | |
|---|---|---|
| World Centric | Project: Compostable Cutlery | Report: 12C1279 |
| 2121 Staunton Court | Project Number: Compostable Cutlery | Reported: 04/25/2012 16:45 |
| Palo Alto, CA 94306 | Project Manager: Matt Wynkoop | |

## CASE NARRATIVE

Extraction studies were performed on the submitted sample(s) in accordance with CFR Title 21 § 175.300, resinous and plymeric coatings. The sample(s) were prepared by cutting 2 spoons per extration. All analysis was performed in quadruplicate. The samples placed in extraction vessels with coatings exposed to solvents. The vessels were capped and placed in incubator at the appropriate temperature for the solvent as specified by the method.

Comments/Notes:

1. Samples were extracted according to CFR Title 21 § 175.300 Table 1 part E: Room temperature filled and stored (no thermal treatment in the container), hot filled above 150°F and hot filled below 150°F.

2. The submitted sample(s) meet the specification for resinous and polymeric coatings used in articles which come in contact with food types specified in CFR Title 21 § 175.300 Table 1 part E for the above listed tests.

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| Palo Alto, CA 94306 | Project Manager: Matt Wynkoop | |

## Compostable Cutlery: Room Temperature Extraction

**12C1279-01 (Consumer Product) Sampled: 03/22/2012 00:00; Type: Grab**

| Analyte | Result | Reporting Limit | Units | Prepared | Analyzed | Analyst | Method | Notes |
|---|---|---|---|---|---|---|---|---|
| **Microbac Laboratories, Inc., Baltimore Division** | | | | | | | | |
| **Chloroform Soluble Non-Volatile 8% Alcohol Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | FC_300_AD |
| Residue A | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| **Chloroform Soluble Non-Volatile DI Water Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | FC_300_AD |
| Residue A | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| **Chloroform Soluble Non-Volatile n-Heptane Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | FC_300_H |
| Residue A | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 032812 1045 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |

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| 2121 Staunton Court | Project Number: Compostable Cutlery | Reported: 04/25/2012 16:45 |
| Palo Alto, CA 94306 | Project Manager: Matt Wynkoop | |

## Compostable Cutlery: Hot Fillled <150°F Extraction

**12C1279-02 (Consumer Product) Sampled: 03/22/2012 00:00; Type: Grab**

| Analyte | Result | Reporting Limit | Units | Prepared | Analyzed | Analyst | Method | Notes |
|---|---|---|---|---|---|---|---|---|
| **Microbac Laboratories, Inc., Baltimore Division** | | | | | | | | |
| **Chloroform Soluble Non-Volatile 8% Alcohol Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | Z10b |
| Residue A | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| **Chloroform Soluble Non-Volatile DI Water Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | Z10b |
| Residue A | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| **Chloroform Soluble Non-Volatile n-Heptane Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | Z10 |
| Residue A | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |

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| Palo Alto, CA 94306 | Project Manager: Matt Wynkoop | |

## Compostable Cutlery: Hot Fillled >150°F Extraction

**12C1279-03 (Consumer Product) Sampled: 03/22/2012 00:00; Type: Grab**

| Analyte | Result | Reporting Limit | Units | Prepared | Analyzed | Analyst | Method | Notes |
|---|---|---|---|---|---|---|---|---|
| **Microbac Laboratories, Inc., Baltimore Division** | | | | | | | | |
| **Chloroform Soluble Non-Volatile DI Water Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | Z10c |
| Residue A | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| **Chloroform Soluble Non-Volatile n-Heptane Extractives** | | | | | | | | |
| Average Residue | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | Z10a |
| Residue A | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue B | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue C | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |
| Residue D | ND | 0.500 | mg/in² | 041012 1030 | 041212 1310 | VAS | FDA 21 CFR 175.300 | |

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| Palo Alto, CA 94306 | Project Manager: Matt Wynkoop | |

## Notes and Definitions

| | |
|---|---|
| Z10c | Samples extracted by filling with boiling water and cooling to 100°F. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| Z10b | Samples extracted at 150°F for 2-hours. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| Z10a | Samples extracted at 120°F for 15-minutes. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| Z10 | Samples extracted at 100°F for 30-minutes. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| FC_300_H | Samples extracted at 70°F for 30-minutes. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| FC_300_AD | Samples extracted at 120°F for 24-hours. The results conform to the standards listed in FDA 21 CFR 175.300. The material may be used for food contact according to the method and testing performed. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |