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ASTM C1607-12 Test for Determination of “Microwave Safety for Reheating” of Ceramicware

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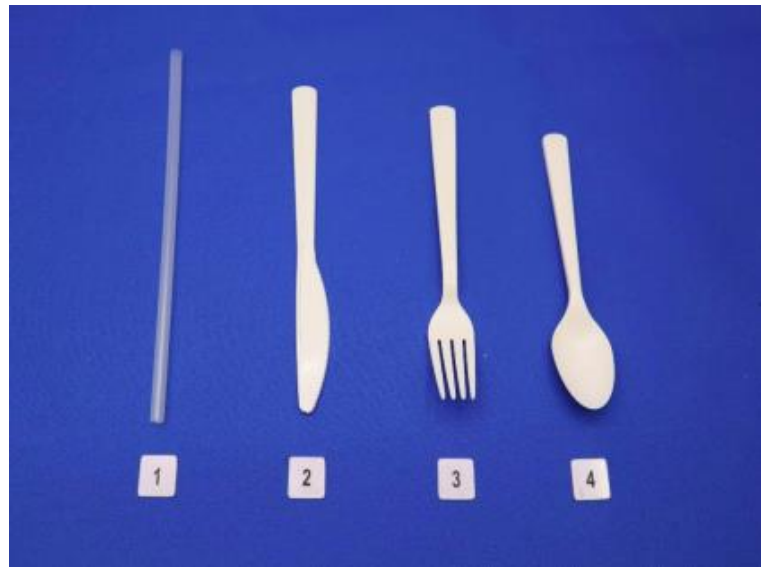
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SCOPE OF THE EXPERIMENT

Standard Test Method for Determination of “Microwave Safety for Reheating” of Ceramicware.

SAMPLE(S) NAME AND NUMBER

| SN. | NAME | NUMBER |
|-----|---------------------------|--------|
| 1. | Transparent plastic straw | 1 |
| 2. | White plastic cutter | 1 |
| 3. | White plastic fork | 1 |
| 4. | White plastic spoon | 1 |
| 5. | Light blue plastic cup | 1 |



[Images of the samples 1,2,3,4 & 5]

| Test Data | Type | Period of Microwave Cycle | Checkpoint | Surface Temp. (°C) | | | Requirement (°C) |
|-----------|----------|---------------------------|-------------|--------------------|------|------|------------------|
| | | | | 1nd | 2nd | 3rd | |
| Sample 1 | Flatware | 1-minute | Outer Rim | 25.3 | 25.2 | 25.6 | ≤ 71 |
| | | | Back Center | 25.1 | / | / | |
| Sample 2 | Flatware | 1-minute | Out Rim | 26.3 | 26.6 | 26.8 | ≤ 71 |
| | | | Back Center | 27.1 | / | / | |
| Sample 3 | Flatware | 1-minute | Out Rim | 27.6 | 27.3 | 27.4 | ≤ 71 |
| | | | Back Center | 25.3 | / | / | |
| Sample 4 | Flatware | 1-minute | Out Rim | 30.1 | 28.7 | 29.2 | ≤ 71 |
| | | | Back Center | 29.3 | / | / | |

RESULTS AND OBSERVATIONS

- **No. of specimen:** 1 piece (sample 1, 2, 3, 4) for testing. Remains as control sample.
- **Test requirement:** To be considered Microwave Safe for Reheating, the product must pass the following criteria:
 1. No sign of degradation of the ware, for example cracking, crazing, deformation or discoloration.
 2. Surface temperature at the checkpoints for Flatware:
 - a. After 1-minute Microwave Cycle ≤ 71°C (160°F).
 - b. After 5-minute Microwave Cycle ≤ 163°C (325°F).
- **Conclusion: PASS**
- No noticeable change was found on the samples 1, 2, 3, 4 after testing.
- Surface temperature at checkpoints did not exceed the max. surface temperature as specified by the standard (See table of the test data)
- **Remark 1:** Thermal shock resistance test is not included in this report but is specified by the standard (section 5.3). Ceramic products intended for microwave use must also pass the 325°F criteria as described in ASTM C554 before being tested for microwave safety.

| Test Data | Type | Period of Microwave Cycle | Checkpoint | Surface Temp. (°C) | Requirement (°C) |
|-----------|---------------|---------------------------|------------|--|------------------|
| Sample 5 | Cups and Mugs | 2-minute | Handle | Top = 35.3 Bottom = 38.5 Centre = 36.7 | ≤ 60 |
| | | | Outer Rim | Point 1 = 35.5 Point 2 = 34.8 Point 3 = 34.2 | ≤ 121 |

RESULTS AND OBSERVATIONS

- **No. of specimen:** 1 piece (sample 5) for testing. Remains as control sample.
- **Test requirement:** To be considered Microwave Safe for Reheating, the product must pass the following criteria
 1. No sign of degradation of the ware, for example cracking, crazing, deformation or discoloration.
 2. Surface temperature at the checkpoints for Cups and Mugs after 2-minutes Microwave Cycle:
 - a. Handle ≤ 60°C (140°F).
 - b. All body ≤ 121°C (250°F).
- **Conclusion: PASS**
- No noticeable change was found on the samples 5 after testing.
- Surface temperature at checkpoints did not exceed the max. surface temperature as specified by the standard (See table of the test data)
- **Remark 1:** Thermal shock resistance test is not included in this report but is specified by the standard (section 5.3). Ceramic products intended for microwave use must also pass the 325°F criteria as described in ASTM C554 before being tested for microwave safety.



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