

Laboratorio Accreditato EN ISO/IEC 17025 da Accredia
Numero di accreditamento: 1786L

Sample: RT FC220104.01

Sample Ref: FC220857.01

F.A.O.

JARSTY S.R.L.

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25062 CONCESIO BS

OBJECT: Food contact evaluation of JARSTY container in JRM001 in microwave.



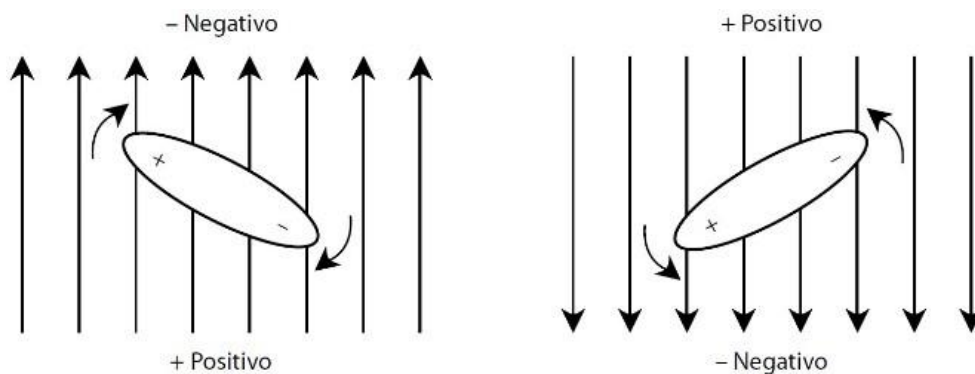
Picture 1. Sample: FC220857.01- JARSTY

PREMISE

For an accurate risk assessment on an object -JARSTY- intended for use in a microwave oven, the laboratory proposed the execution of global and specific migration tests on simulants that came into contact with the object in conditions of real use, and therefore by heating in a microwave oven.

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Microwaves are electromagnetic radiations with wavelengths between those of the shortest radio waves and those of the infrared. They have frequencies between 300 MHz and 30 GHz; They are widely used, both in domestic and industrial environments, to heat, thaw and, in part, sanitize food products, even already packaged. The behavior of food contact materials (MOCA) irradiated with this radiation is very diverse and is linked to their chemical nature and molecular organization. If the material contains polar molecules or free ions, these tend to move and orient depending on the orientation of the electric field of the radiation that invests them and that varies with high frequency as shown in the image below:



The analyses for the safety verification are usually carried out through the use of the traditional oven.

DESIGN OF RISK ASSESSMENT

Although according to the technical standards the contact between sample and simulant could be performed in the microwave, for practical aspects the laboratories always take advantage of the possibility of performing the test in a traditional oven.

The EN 13130-1 standard states:

EN 13130-1:2004 (E)

8.1.5 Contact in a microwave oven

For materials and articles intended for use in microwave ovens, migration testing can be carried out in either a conventional oven or a microwave oven provided the appropriate time and temperature conditions are selected.

A method has been prepared by a Subcommittee (SC1) of TC 194 'Utensils in contact with food' to measure the temperature, during microwave heating and during heating in a conventional oven, at the interface of food with packaging materials, see EN 14233.

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The practice is therefore to define the temperatures to perform the test in a traditional oven by selecting the test temperatures with the help of the EN 14233 standard:



English version

**Materials and articles in contact with foodstuffs - Plastics -
Determination of temperature of plastics materials and articles
at the plastics/food interface during microwave and conventional
oven heating in order to select the appropriate temperature for
migration testing**

Matériaux et objets en contact avec les denrées
alimentaires - Matières plastiques - Température à
l'interface matières plastiques/denrées alimentaires -
Détermination de la température des matières plastiques et
objets à l'interface matières plastiques/denrées
alimentaires lors du chauffage en four classique ou à
micro-ondes afin de sélectionner la température appropriée
pour les essais de migration

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln
- Kunststoffe - Bestimmung der Temperatur von
Werkstoffen und Gegenständen aus Kunststoff an der
Kunststoff-Lebensmittel-Schnittstelle während der
Erwärmung im Mikrowellengerät oder im herkömmlichen
Ofen zur Auswahl der geeigneten Temperatur für die
Migrationsprüfung

If the checks carried out according to EN 14233 confirm the possibility of using the standardized OM conditions reported in the EU Plastics Regulation 10/2011, we proceed in this direction. In practice, this is what all laboratories do, as shared in industry meetings and technical tables.

But the doubt that microwaves imply different migrations is often cited in literature works, carried out by research institutions that may deviate from the rules defined by technical standards.

This is why for particular materials, born to be used repeatedly in the microwave oven, it is appropriate to carry out a punctual risk assessment by verifying the stress actually suffered by the materials.

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Picture 2. Samples: FC220857.01- JARSTY container in contact with simulant during microwave test



Picture 3. Samples: FC220857.01- JARSTY container in contact with simulant Acetic acid 3%

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TESTS PERFORMED

For details, please refer to the sample test report: FC220857.01 and its Annex which includes details of the Screening chromatographic tests.

It should also be noted that for the Bisphenol A parameter a target migration verification was also performed in the Oil simulant also subjected to screening testing, and no migration was identified.

Through specific validation, the LOQ limit of quantification was verified, which was equal to 0.02 mg/kg food. Test recovery and repeatability were also verified.

CONCLUSIONS

From the tests conducted on the object in "real use" conditions, no critical issues were found on the finished product.

The migration and screening tests for risk assessment did not report worrying values and therefore the tested object can be considered fit for purpose. On the basis of the analysis conducted at the request of the customer with the instrumentation available to the laboratory, the sample complies with REGULATION (EU) N. 10/2011.

Il Direttore Tecnico
Marinella Vitulli



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