

JRC VALIDATED METHODS, REFERENCE METHODS AND MEASUREMENTS REPORT



Report of an inter-laboratory comparison from the European Union Reference Laboratory for Food Contact Materials

ILCO1 2015 – Temperature control during migration tests by article filling

Emmanouil Tsochatzis, Anja Mieth, Catherine Simoneau and Eddo Hoekstra 2016



European Commission

Joint Research Centre Institute for Health and Consumer Protection

Contact information

Catherine Simoneau Address: Joint Research Centre, Via Enrico Fermi 2749, TP 260, 21027 Ispra (VA) Italy E-mail: JRC-FCM@ec.europa.eu Tel.: +39 0332 78 5889

JRC Science Hub https://ec.europa.eu/jrc

Legal Notice

This publication is a Validated Methods, Reference Methods and Measurements Report by the Joint Research Centre, the European Commission's in-house science service. It aims to provide evidence-based scientific support to the European policy-making process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

All images © European Union 2016

JRC100836 EUR 27826 EN

ISBN 978-92-79-57669-0 (PDF)

ISSN 1831-9424 (online)

doi:10.2788/536852

Luxembourg: Publications Office of the European Union, 2016

© European Union, 2016

Reproduction is authorised provided the source is acknowledged.

Printed in Italy

Abstract

This report presents the results of an inter-laboratory comparison (ILC) on the temperature control during migration tests by article filling organised by the EURL-FCM, Ispra (Italy). Participants carried out a migration test by article filling in provided polypropylene cups (volume 0.3 L) with food simulant D1 (ethanol 50 %, v/v) at 70°C for 2 h and monitored the temperature of the food simulant inside one of the test specimen during the contact phase and provide details for the operating procedure. The participation to the ILC was satisfactory. The results show that 30% of the 53 migration experiments performed by the 45 laboratories were successful (scoring 100%) meaning that the temperature of the food simulant was in the desired range during the full contact time. It is clear that this result will trigger further discussion to improve the temperature control during a migration test. The information provided by the laboratories through the questionnaire gives a first insight in the factors that can be important to reach a satisfactory score. This discussion should lead to the selection of one or more methods for temperature control during migration testing. These selected methods need to be compared in a future ILC.



Report of the inter-laboratory comparison

ILC 01 2015 – Temperature control during migration tests by article filling

EC-JRC-IHCP, CAT Unit

2016

No SANTE/ AA SI2.701410

Emmanouil Tsochatzis, Anja Mieth, Catherine Simoneau and Eddo Hoekstra

Table of contents

1.	Summary	5
2.	Introduction	6
3.	Scope	6
4.	Time frame	6
5.	Test material	7
6.	Instructions to participants and requested results	7
7.	Evaluation of results	8
	7.1. Performance scores	8
	7.2. Applied scoring and evaluation system	8
8. R	esults and Conclusions	9
	8.1. Participation	9
	8.2. Results from the participants	9
	8.2.1. Oven temperature	11
	8.2.2. Food simulant preheating	11
	8.2.3. Test specimen preheating	13
	8.2.4. Oven/incubator volume	
	8.2.5. Oven fan and interval air exchange operation	14
	8.2.6. Test specimen filling	15
	8.2.7. Covering of test specimen during migration	17
	8.2.8. Food simulant loss during migration	18
9.	Final Conclusions	18
10.	Acknowledgements	18
11.	References	22
12.	Annexes	23
	12.1. Invitation letter and documents sent to the participants	23
	12.2. Results reported by participants	33
	12.3. Achieved point and overall laboratory performance	<u>40</u>

1. Summary

The Institute of Health and Consumer Protection (IHCP) of the Directorate-General Joint Research Centre of the European Commission hosts the EU Reference Laboratory for Food contact material (EURL-FCM). One of its main tasks it to organize interlaboratory comparisons (ILCs) among appointed National Reference Laboratories (NRLs).

The report presents the results of an ILC which focused on the temperature control during migration tests by article filling and on a root-cause-analysis for the identification of the best-practice approaches concerning the preheating, filling and contact phase which can ensure that migration tests by article filling are performed at the correct temperature according to EU Reg. 10/2011 [1].

The general aim of the present exercise was to assess the best practices of laboratories to ensure that required contact temperature for migration during testing is reached within acceptable range. The exercise was designed as a proficiency testing and consequently the participants were free to use any experimental approach corresponding to the best of their expertise.

In the present exercise, the participants received polypropylene cups (volume 0.3 L) and were asked to perform a migration test by article filling with food simulant D1 (ethanol 50%, v/v) at 70°C for 2 h. The participants were required to monitor the temperature inside one of the test specimens during the contact phase and provide details of their operating procedure. There were no requirements to identify or quantify any migrating substances at that stage due to the insufficient homogeneity of test articles of that nature (article filling) for the scope of the exercise.

Samples were sent to 45 laboratories (26 NRLs, 10 German Official Control laboratories, 4 Spanish Official Control Laboratories, 4 Belgian Official Control Laboratories and 1 Italian Offical Control Laboratory) and all the participating laboratories submitted results.

Results showed that 30% of the 53 migration experiments performed by the 45 laboratories obtained a scoring of 100% success meaning that the temperature of the food simulant was in the tolerance range of $\pm 2^{\circ}$ C during the entire contact time of 2 h at the contact tempature of 70°C chosen for the exercise [2].

The laboratories were also asked to provide their experimental procedure of the migration experiment by answering a questionnaire in order to identify different factors that potentially could have an effect on the contact temperature during migration tests by article filling as rot cause for variations.

The results indicated that the main factors that have a direct or an indirect, individual or combined effect in the temperature of the food simulant during the migration experiment by article filling, were the initial temperature of the food simulant, the volume of the thermostatic oven, preheating of the test specimen, the operation of fan and the interval air exchange, the filling time, the material of the filling place, the persons required for the experiment, the covering of the test specimen during migration and finally the food simulant volume loss.

2. Introduction

ILC studies are important for the laboratory quality assurance and allow individual laboratories to check their performance.

It is one of the core duties of the European Union Reference Laboratories to organise ILCs, as stipulated in Regulation (EC) 882/2004 of the European Parliament and of the Council [3].

In accordance with the above requirements, the European Union Reference Laboratory for Food contact Materials (EURL-FCM) organised ILCs for the network of National Reference Laboratories (NRLs) in 2015.

3. Scope

The objectives of this ILC were:

- To assess the ability of the NRLs to perform a specific migration test by article filling with food simulant D1 (i.e. ethanol 50% v/v) for 2 h at 70±2°C [2] inside a thermostatic oven or incubator with a focus on temperature control protocols.
- 2. To perform a root-cause analysis as to be set up recommendations for migration tests by article filling.

The assessment of all measurement results was undertaken on the basis of requirements laid down in international standards ([4]). Some national official control laboratories also participated.

4. Time frame

Invitation letters were sent by e-mail to all NRLs and interested national official control laboraories on the 8th of October 2015 (see Annex 12.1, Figure 12). Laboratories were asked to fill in a letter of confirmation of their participation (see Annex 12.1, Figure 13).

The samples were dispatched to the participants on the19th of October 2015 together with a sample receipt letter, their lab code, a shipping kit letter, instructions for the compilation of the results (see Annex 12.1, Figures 14, 15, 16, 17), a print copy for the compilation of the results and a questionnaire form to be filled (see Annex 12.1, Figures 18, 19).

The deadline to report results was set on the 30th of November 2015.

5. Test material

Polypropylene cups (0.3 L) were purchased. All participants received five cups, wrapped in alumium foils, the test specimens.



Figure 1. Polypropylene (PP) cups (left) as prepared for shipment (right)

6. Instruction to participants and requested results

Instruction were given to all participants in the letter that accompanied the samples (see Annex, Figure 16).

The laboratories were asked to perform a specific migration test by article filling with food simulant D1 (i.e. ethanol 50% (v/v)) at 70°C for 2 h inside a thermostatic oven or incubator by filling three of the provided test specimens to within 0.5 cm from the top, expose them simultaneously and monitor the temperature of the food simulant inside the third test specimen, i.e. the one filled last and/or placed into the thermostatic oven/incubator last. The NRLs were instructed to use a calibrated thermometer to carry out the temperature measurements. The EURL-FCM also provided to the participating laboratories a digital probe, in case they did not have a suitable calibrated thermometer to monitor the temperature of the food simulant. Additionally, the laboratories were asked, if possible, to record also the temperature displayed at the thermostatic oven/incubator itself.

The temperature values were requested to be recorded in specific timeframes. The first value was to be recorded immediately after the third test specimen was placed into the thermostatic oven/incubator and it was set as t = 0 min. Subsequently, the temperature measurements were set every 1 min (until t = 10 min), every 5 min from t = 10 min to t = 30 min and 15 min from t = 30 min to t = 120 min. Additionally, the laboratories were asked to record the temperature of the preheated food simulant, before it was filled into the test specimens, during the preheat (inside the oven/liquid bath, on a hotplate) or immediately after having removed the food simulant from the heating source.

The participants were asked to monitor the food simulant temperature only during one migration test. There was no need to perform a second test and also there were no requirements to identify or quantify any migrating substances at that stage due to an inherent lesser homogeneity of the type of test articles (article filling).

As the exercise aimed at a proficiency testing, the participants were free to use any suitable method or instrumentation of their own choice for the realization of the specific migration by article filling while making sure that the food simulant reaches the desired test temperature of $70^{\circ}C \pm 2^{\circ}C$ [2] as soon as possible after placing the filled test specimens inside the thermostatic oven.

7. Evaluation of results

7.1. Performance scores

As described in ISO/IEC 17043:2010 Annex B, B.3.3 [4], the performance of a laboratory can be evaluated "on the basis of more than one result in a single proficiency testing round". Based on this, a combined performance score was calculated to assess the overall laboratory performance.

Performance scores were defined based on the general concept described in ISO/IEC 17043:2010 Annex B [4]. To assess the laboratory performance for qualitative data, ISO/IEC 17043 states "to compare a participant's result with the assigned value. If they are identical, then performance is acceptable. If they are not identical, then expert judgement is needed to determine if the result is fit for its intended use" (see [4] Annex B, B.3.2.1). Due to the temperature control during the migration experiment by article filling, a "passed/failed"-decision based on the fact whether all measured temperatures were located inside the acceptable range (70°C $\pm 2^{\circ}$ C) [2], was appropriate and could be characterised as "satisfactory".

7.2. Applied scoring and evaluation system

The scoring system was based on "yes/no"-decisions. For each requested subtask, i.e. measurement of the food simulant temperature in specific timeframes, a result was either correct and the participant obtained 1 point or it was incorrect and the participant obtained 0 points, which in the present exercise meant reporting a temperature outside the acceptable temperature range of the contact temperature of $70^{\circ}C\pm2^{\circ}C$ (acceptable were from $68^{\circ}C-72^{\circ}C$) [2]. Similar scoring system has also been applied for the ILC 02 2013 and ILC 02 2014 [5, 6]. No penalty scores were given [6].

In the present exercise, the percentage of achieved points (i.e. the sum of points achieved in the analysis of temperatures, max. 21, was used as a parameter to evaluate the overall performance of a laboratory. No threshold was set as all the points, which were temperature measurements in specific timeframe, must be inside the target temperature range of $70^{\circ}C \pm 2^{\circ}C$ [2]. The overall laboratory performance

was regarded as "satisfactory" when the participant obtained 100% of the total achievable points. Therefore the percentage of achieved points other than 100% does not say anything about the relative performance of the laboratory and is only used for root-cause analysis.

8. Results and Conclusions

8.1. Participation

Samples were sent to 45 laboratories (26 NRLs, 10 German Official Control laboratories, 4 Spanish Official Control Laboratories, 4 Belgian Official Control Laboratories and 1 Italian Offical Control Laboratory) and all the participating laboratories submitted results. This corresponded to a 100 % participation.

8.2. Results from the participants

The rounded results of the participants are presented in Annex 12.2, in Table 1. Additionally the results of the participating laboratories are visualised in Annex 12.2, Figure 20.

The total achieved points of each laboratory in the exercise are listed in Annex 12.3, Table 2 (Annex 12.3) and visualised in Figure 2. This figure also shows which result is obtained by either a constant or gradient temperature programme.

In some cases, some participating laboratories reported results for different configurations of the migration method. Those results were taken into account and will be also used for a further root-cause analysis.

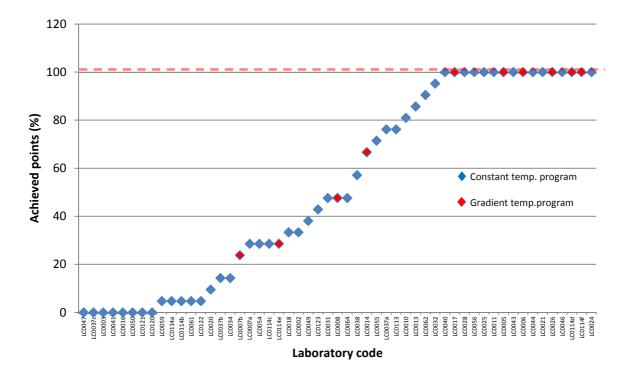


Figure 2. Achieved point per laboratory depending on applied temperature program

Fifteen out of 53 migration experiments (30%) reached a 100 % performance score of satisfactory result.

8.2.1. Oven temperature

The participating laboratories used mainly 2 types of oven temperature programs for the realisation of the specific migration by article filling. Those were the **constant** temperature program, where the incubator temperature was kept constant throughout the migration experiment and the **gradient** temperature program, where the temperature was changed, based on a time-temperature program (see Figure 3). In the latter case, different approaches were followed and reported by the participating laboratories.

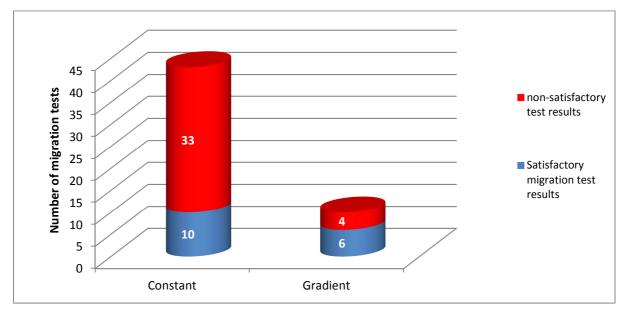


Figure 3. Temperature programs applied and indicating the number of laboratories and their scoring performance

In 81% of the migration experiments (43) a constant temperature was used and 10 of them reached satisfactory results. In 19% of the migration experiments (10) a gradient temperature program was used and 6 of them reached satisfactory results.

8.2.2. Food simulant preheating

For the initial food simulant temperature, the results for constant and gradient temperature programs can be categorised in 3 main groups. In case of constant temperature programs, the food simulant was preheated in a temperature lower ($T_{simulant} < T_{oven}$), equal ($T_{simulant} = T_{oven}$) or higher ($T_{simulant} > T_{oven}$) than the oven temperature. In case of gradient temperature programs, the food simulant was preheated in a temperature lower than the minimum temperature of the program ($T_{simulant} < T_{min, oven program}$), in a temperature inside the range of the temperature

program ($T_{simulant}=T_{oven temp. program}$), or in a temperature higher than the maximum temperature of the program ($T_{simulant}>T_{max, oven program}$).

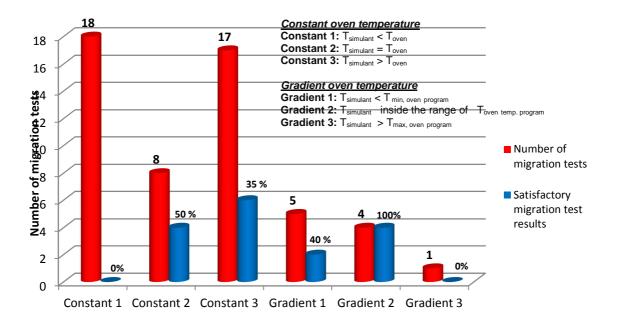


Figure 4. Food simulant preheating temperature options and scoring performance

Figure 4 shows the total number of migration experiments for the different initial food simulant temperature options and the number of migration experiments that were satisfactory. In the case of migration experiments with a constant temperature program, the preheating of food simulant to a temperature lower than the oven temperature appeared not to lead to a 100% performance score. The preheating of food simulant to a temperature seemed to be more effective, where the 100% performance scores was reached by 50% and 35% respectively of the respective migration experiments. The participating laboratories applied different patterns of preheating the food simulant.

In the case of migration experiments using a gradient temperature program, the initial food simulant temperature within the minimum and maximum of the temperature oven programs seemed most effective in reaching the 100% performance score. However the number of migration experiments with these conditions was low. In the other cases where the temperature was inside oven temperature program ($T_{simulant} < T_{min, oven temp. program$) or higher than the maximum temperature of the oven program ($T_{simulant} > T_{max, oven program$), not all laboratories reached 100% performance score. The participating laboratories also applied different patterns of preheating the food simulant.

8.2.3. Test specimen preheating

Some participating laboratories preheated the test specimens prior to the migration by article filling. The preheating included preheating contact times that ranged from 15 min up to 300 min and contact temperatures that ranged from 40°C up to 90°C.

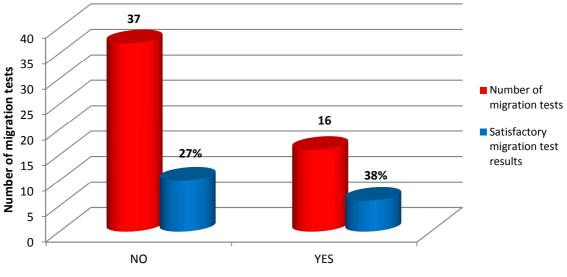


Figure 5. Application of specimen preheat and scoring performance

Figure 5 shows how satisfactory the preheating of the test specimen was. In 37 migration experiments the test specimen was not preheated, while in 16 migration experiments the test specimen was preheated. The results indicated that test specimen preheating led to satisfactory results for 6 migration experiments (38%), whilst no preheating led to satisfactory results for 10 migration experiments (27%).

8.2.4. Oven/incubator volume

The participants used different types of incubators with a variety of volumetric capacities. The volumes ranged from 49 up to 1333 L. Eleven laboratories used oven's with a volume of 108 L and ten laboratories used oven's with 53 L volume. The majority of the volume of the thermostatic ovens was below 100 L (36%), followed by 100-200 L (32%) and more than 200 L (23%). Additionally, 2 of the participating laboratories (4%) did the migration in a water bath and 3 of the laboratories (6%) did not gave any details regarding the volume of their oven.

Based on the obtained results of the participating laboratories, it seemed that the increment of the oven volume had a positive effect on the temperature control, though the participating laboratories had operated and realised migration in different oven's volumes following different experimental conditions. It should be noted that apart from the volume, the contact temperature could be also affected by other factors such as the opening and the closing time of door of the oven and the angle of door opening.

8.2.5. Oven fan and interval air exchange operation

Figure 6 shows the effect of the fan speed on the performance score of the migration experiments. In 15 migration experiments an oven without a fan was used or the fan was switched off. In 3 migration experiments the fan was operated at low level, in 14 migration experiments at medium level and in 19 migration experiments at maximum level. In 2 migration experiments a water bath was used.

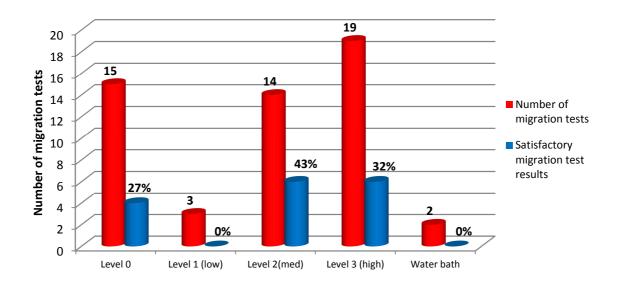


Figure 6. Application of fan operation speed (Level 0 = no fan; Level 1 = low; Level 2 = medium; Level 3 = Maximum) and scoring performance

Fan operation at medium or high level exhibited a relatively higher satisfactory scoring percentages of 43% and 32% respectively. The absence of use of fan or a use in low speed resulted in relatively low satisfactory scoring percentages.

Apart from the fan operation on the oven, the participating laboratories were asked to provide information as to whether they applied any air exchange of the oven during the migration experiment. The results indicated that in most migration experiments (43) no air exchange was applied (Figure 7). In the remaining 10 migration experiments air exchange was applied. The satisfactory scoring percentage without interval air exchange was 28%, while with interval air exchange a 40% had satisfactory scoring.

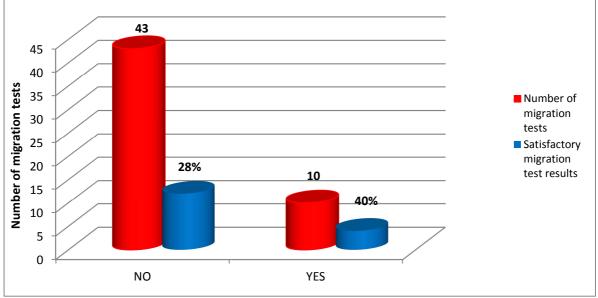


Figure 7. Application of fan interval air exchange (YES) or not (NO) and scoring performance

8.2.6. Specimen filling

Figure 8 shows the effect of the place where the test specimen was filled. In 15 migration experiments the test specimens were filled inside a thermostatic oven, and 33% of them had a satisfactory scoring. In 37 migration experiments the test specimens were filled outside the thermostatic oven/incubator, where 30% of them had satisfactory scoring. In one migration experiment the test specimen was filled inside a water bath with no satisfactory scoring.

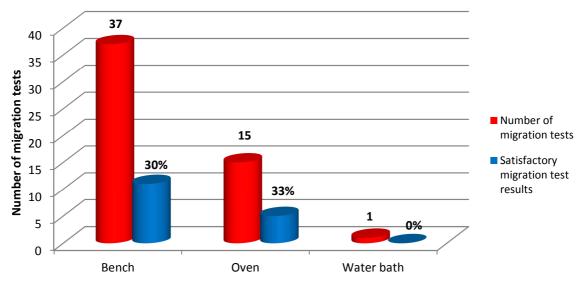


Figure 8. Different filling places and scoring performance

Apart from the different filling places, the participating laboratories were asked to indicate the different types of materials on which the test specimen was placed for filling outside the oven and the distance from the filling place to the oven. They reported 7 different surface materials, i.e. ceramic (insulated, non-insulated, + paper

or + metal) plastic, metal, wood) and distances varying from 0.1 up to 6.5 m, from the filling place to the thermostatic oven.

The different filling place surface materials, along with their relative scoring percentages results, are presented in Figure 9.

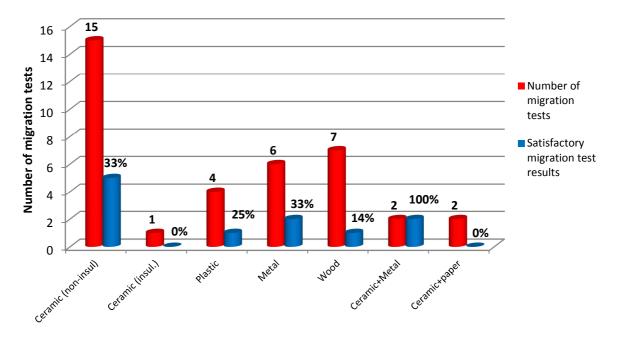


Figure 9. Different types of filling place materials and scoring performance

The participating laboratories were asked to report the time between starting of filling each test specimen and placing it into the oven or the time of filling and closing the door of the oven, in the case where the test specimens were filled inside the oven. The results showed large time variability ranging from 0.5 min up to 5 min.

An additional feedback from the participants, was the indication of intentional breaks/intervals between the filling of the test specimens. Only 4 laboratories reported intentional time breaks between the filling of 2 test specimens, either outside or inside the oven/incubator. Those intentional time breaks varied from 0.16 min up to 3 min.

Laboratories reported different numbers of persons that they required during the filling procedure of the specimen and the realisation of the migration experiment (Figure 10). 38 migration experiments used one person of which 32% had a satisfactory scoring percentage, 13 migration experiments used 2 persons of which 15% had a satisfactory scoring percentage and 2 migration experiments used 3 persons of which 100% had a satisfactory scoring percentage.

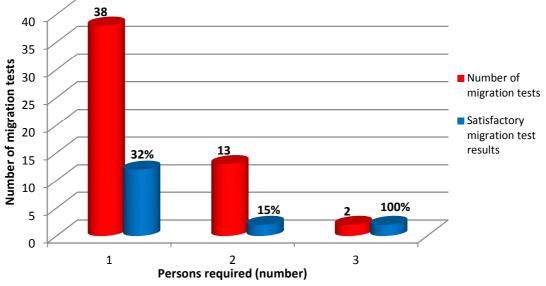


Figure 10. Different types of personnel required and scoring performance

8.2.7. Covering of test specimen during migration

During the migration experiment, the test specimens were covered by 9 different materials or combinations thereof (Figure 11). Aluminium foil was mainly used in 51% of the migration experiments, followed by glass plate (28%), silicon lid (1.9%), cling film (3.8%) and combination of the aforementioned materials such as aluminun foil-glass (5.7%) and aluminium foil-metal plate (1.9%). No covering of the test specimen was reported for one migration experiment.

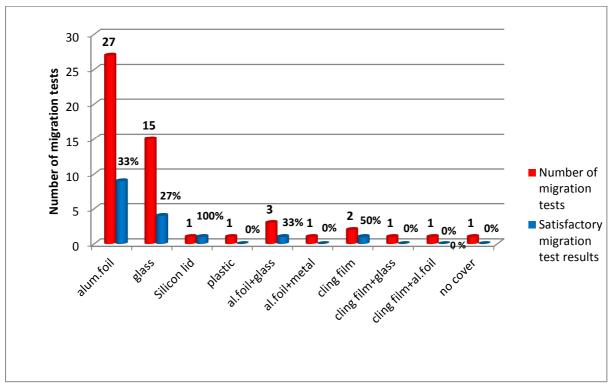


Figure 11. Materials used for covering the specimen and scoring performance

8.2.8. Food simulant loss during migration

The initial food simulant temperature, the temperature program and the covering of the test specimen during the migration experiment had a combined effect on the food simulant losses. In general increased temperatures and the use of specific glass cover led to higher losses of food simulant. The results indicated great variations in food simulant losses, ranging from 0 mL up to 60 mL. Among the applications no similar test specimen's trends could be identified in food simulant loss results.

It should be noted that significant loss of food simulant D1 can lead to the change of the composition of the food simulant. So it must be controled and loss of the food simulant during the migration testing should be minimised.

9. Conclusions

The participation in the ILC 01 2015 was satisfactory. The results showed that 30% of the 53 migration experiments performed by the 45 laboratories were successful (scoring 100%) meaning that the temperature of the food simulant was in the tolerance range constantly during the entire contact time. It is clear that these results trigger further discussion to improve the temperature control during a migration test. The information provided by the laboratories through the questionnaire gave a first insight in the factors that are of relevance to reach satisfactory score and optimal testing conditions. This discussion should lead to the selection of one or more methods for temperature control during migration testing. These selected methods will need to be further assessed in a future ILC.

10. Acknowledgements

The NRLs and OCLs who participated in this exercise (see the list below) are kindly acknowledged.

NRLsAustriaÖsterreichische Agentur für Gesundheit und
Ernährungssicherheit (AGES) Abt. Gebrauch-
sgegenstände, ViennaBelgiumScientific Institute of Public Health, Consumer Safety,
BruxellesBulgariaNational Center of Public Health and Analyses,
Chemical Substances and Mixtures & Food Contact
Materials, Sofia

Croatia	Croatian National Institute of Public Health Food Contact Materials and Articles, Zagreb
Czech republic	National Institute of Public Health, Unit for Chemical Safety of Products, Prague
Denmark	Technical University of Denmark, National Food Institute Analytical Food Chemistry, Søborg
Denmark	Danish Veterinary and Food Administration Laboratory Århus, Lystrup
Estonia	Health Board Central Chemistry Laboratory, Tallinn
Finland	Finnish Customs Laboratory, Espoo
France	LNE (Laboratoire National de Metrologie et d'Essais), Trappes
France	SCL Service Commun des Laboratoires, Pessac
Germany	Bundesinstitut für Risikobewertung (BfR) (Federal Institute for Risk Assessment), Berlin
Greece	General Chemical State Laboratory, Laboratory of Articles and Materials in Contact with Foodstuffs, Athens
Hungary	National Food Chain Safety Office Food and Feed Safety Directorate Food Toxicological NRL, Budapest
Ireland	Public Analyst Laboratory, Sir Patrick Dun's, Dublin
Italy	Istituto Superiore di Sanità, Laboratorio Esposizione e rischio da materiali, c/o Dipartimento ambiente e connessa prevenzione primaria, Roma
Lithuania	National Public Health Surveillance Laboratory of Chemistry Department, Vilnius
Luxembourg	Laboratoire National de Santé Service de Surveillance Alimentaire, Luxembourg
Poland	National Institute of Public Health - National Institute of Hygiene, Laboratory of Department of Food Safety, Warsaw
Portugal	Escola Superior de Biotecnologia Universidade Católica Portuguesa CINATE, Porto

Romania	National Institute of Public Health Environment and food chemical and microbiological laboratory, Bucharest
Slovakia	National Reference Centre and Laboratory for materials and articles intended to come into contact with food, Regional Public Health Authority In Poprad (RUVZ), Poprad
Slovenia	National Laboratory of Health, Environment and Food Center for Environment and Health Laboratory for Consumer Products, Ljubljana
Spain	Agencia Espanola de Seguridad Alimentaria y Nutrición (AECOSAN) Centro Nacional Alimentación, Madrid
Sweden	National Food Agency Department of Chemistry Division of Science, Uppsala
United Kingdom	The Food and Environment Research Agency (FERA), York
OCLs	
Belgium	Belgisch Verpakkingsinstituut (BVI), Zellik
Belgium Belgium	Belgisch Verpakkingsinstituut (BVI), Zellik SGS Belgium N.V Division IAC , Antwerpen
-	
Belgium	SGS Belgium N.V Division IAC , Antwerpen Federaal Laboratorium voor de Voedselveiligheid
Belgium Belgium	SGS Belgium N.V Division IAC , Antwerpen Federaal Laboratorium voor de Voedselveiligheid (FLVVG), Gentbrugge Laboratoire Fédéral pour la Sécurité Alimentaire Liège
Belgium Belgium Belgium	SGS Belgium N.V Division IAC , Antwerpen Federaal Laboratorium voor de Voedselveiligheid (FLVVG), Gentbrugge Laboratoire Fédéral pour la Sécurité Alimentaire Liège (LFSAL), Wandre Chemisches und Veterinäruntersuchungsamt Fellbach
Belgium Belgium Belgium Germany	SGS Belgium N.V Division IAC , Antwerpen Federaal Laboratorium voor de Voedselveiligheid (FLVVG), Gentbrugge Laboratoire Fédéral pour la Sécurité Alimentaire Liège (LFSAL), Wandre Chemisches und Veterinäruntersuchungsamt Fellbach Abt. Bedarfsgegenstände, Fellbach
Belgium Belgium Belgium Germany Germany	 SGS Belgium N.V Division IAC , Antwerpen Federaal Laboratorium voor de Voedselveiligheid (FLVVG), Gentbrugge Laboratoire Fédéral pour la Sécurité Alimentaire Liège (LFSAL), Wandre Chemisches und Veterinäruntersuchungsamt Fellbach Abt. Bedarfsgegenstände, Fellbach Landeslabor Schleswig-Holstein, Neumünster Landesamt für Verbraucherschutz (LAV) FB 2.4

Germany	Landesuntersuchungsamt Rheinland-Pfalz, Institut für Lebensmittelchemie, Koblenz
Germany	Chemisches und Veterinäruntersuchungsamt MEL (CVUA-MEL), Bedarfsgegenstände, Muenster
Germany	Thüringer Landesamt für Verbraucherschutz, Dezernat 46, Bedarfsgegenstände, Kosmetische Mittel, Kontaminanten, Bad Langesalza
Germany	LAVES -Institut für Bedarfsgegenstände, Lüneburg
Germany	Zentrales Institut des Sanitätsdienstes der Bundeswehr KOBLENZ Laborabteilung III, Lebensmittelchemie und Ökochemie, Koblenz
Italy	Istituto Zooprofilattico Sperimentale LER, Laborario chimico, Bologna
Spain	Centro de salud publica de Alicante, Alicante
Spain	Hospital Monte San Isidro, 1ª planta Servicio Territorial Bienestar Social Salud Pública León, León
Spain	Ministerio de Economía y Competitividad, Laboratorio Cental Soivre, Madrid
Spain	Centro de Salud Pública de Valencia, Laboratorio de Salud Pública, Valencia

11. References

- [1] Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food. OJ L 12, 15.1.2011, p. 1–89. Last amended by Commission Regulation (EU) No 202/2014 of 3 March 2014. OJ L 62, 04.03.2014, p. 13
- [2] EN 13130-1:2004. Materials and articles in contact with foodstuffs. Plastics substances subject to limitation. Guide to test methods for the specific migration of substances from plastics to foods and food simulants and the determination of substances in plastics and the selection of conditions of exposure to food simulants
- [3] Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules. Last amended by Regulation (EU) No 652/2014 of the European Parliament and of the Council of 15 May 2014. OJ L 189, 27.06.2014, p. 1
- [4] ISO/IEC 17043:2010(E). Conformity assessment General requirements for proficiency testing
- [5] Report of an inter-laboratory comparison from the European Reference Laboratory for Food Contact Materials: ILC02 2014 – Identifying the composition of multilayer plastic packaging films. EUR 27172 EN, Luxembourg: Publications Office of the European Union, 2015
- [6] Report of an inter-laboratory organised by the European Reference Laboratory for Food Contact Materials. ILC002 2013 – Identification of polymeric materials. EUR 26467 EN, Luxembourg: Publication Office of the European Union, 2013.

12. Annexes

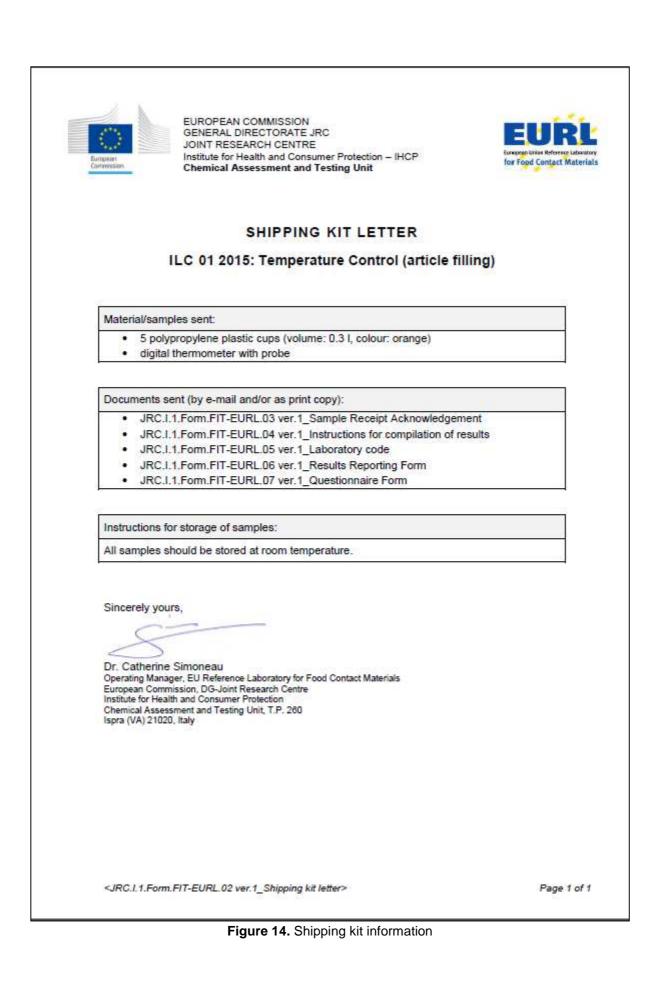
12.1. Invitation letter and documents sent to the participants

	EUROPEAN COMMISSION	f. Ares(2015)4179416 - 08/10/20
175	GENERAL DIRECTORATE JRC	EUR
Bumpean Commission	JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP	for Food Contact Materia
Carstropper.	Chemical Assessment and Testing Unit	
	INVITATION LETTER	
Inter-lab	oratory Comparison (ILC) Exercise on Temperature Migration Tests by Article Filling – ILC01-201	
Dear Sir or M	ladam,	
a comparati	the EURL for Food Contact Materials, I would like to invite ve trial/inter-laboratory comparison (ILC) exercise on temper ts by article filling.	
contact temp after an (un affects migra of samples, preheating, 1	national reference laboratories and the EURL-FCM indicate perature when performing migration tests by article filling is acceptably) long period of time or even not at all. As the ation results, it may also affect the decision about compliance This ILC therefore aims at identifying best-practice approace illing and exposure phase which can ensure that migration to at the correct test temperature.	often reached only contact temperature e or non-compliance ches concerning the
provided pol at 70°C to the one of the to procedure be any of the m	ILC, participants will be asked to carry out a migration te ypropylene cups (volume 0.3 I) with food simulant D1 (ethan be best of their knowledge, monitor the temperature of the st specimens during the exposure phase and provide deta a answering a questionnaire. There will be no requirements to igrating substances. Based on the obtained data, the EURL nalysis. The results will be used to set up recommendation ng.	nol 50%, v/v) for 2 h food simulant inside ils of their operating o identify or quantify -FCM will perform a
organised b For this reas	to remind you that it is a duty for you as an NRL-FCM to pa y the EURL-FCM since the work programme is decided w son we encourage all of you to actively participate in this en articipation. Feel free to involve your local controls.	ith your agreement.
participation Once we ha The shipme instructions documents). information,	rm your participation until 16 th October 2015 by sending form to Emmanouil TSOCHATZIS (<u>Emmanouil.TSOCHAT</u> , ve received your confirmation of participation, we will send nt of the sample kits is foreseen for 19 th October 2015. Y concerning the requested results in the sample kits (and ex The deadline for submission of results is 30 th November please contact Emmanouil <u>TSOCHATZIS@ec.europa.eu</u> , phone: +39 0332 78 9548).	ZIS@ec.europa.eu). a sample kit to you. ou will find detailed ante in the attached
Sincerely yo	urs,	
C		
0		
European Comm	e Simoneau er, EU Reference Laboratory for Food Contact Materials ission, DG-Joint Research Centre h and Consumer Protection ment and Testing Unit, T.P. 260	
	cient and resulty officiency of the cou	
Chemical Assess Ispra (VA) 21020		

Figure 12. Invitation letter

GENERAL D JOINT RESE Institute for H	COMMISSION IRECTORATE JRC ARCH CENTRE lealth and Consumer Protection – IHCP ssessment and Testing Unit	EUR representations food Contact Mate
ILC 01 2	FIRMATION OF PARTICIPATION 015: Temperature Control (article filling)	
	e, complete the form and return it until 16 th October 20 7) or e-mail (Emmanouil.TSOCHATZIS@ec.europa.eu)	
DETAILS OF	THE INTERLABORATORY COMPARISON EXERCISE	
ILC code	ILC 01 2015	
ILC Title	Temperature Control (article filling)	
Year	2015	
Sample type	polypropylene plastic cups (volume: 0.3 l, colour: orange)	
Parameters for determination	monitor the food simulant temperature inside a test specim performing a migration test (2 h, 70°C, ethanol 50% v/v) by filling	
Sample quantity	5 test specimens	
Packaging	padded cardboard box	
Shipment conditions	no special precautions	
Sample dispatch	19 th October 2015	
Deadline for results	30 th November 2015	
-	PARTICIPATING INSTITUTION	
Organisation		C
Laboratory		12
	CONTACT INFORMATION	13
Contact person		16
Address for sample dispatch		
Telephone		
Fax		
	N. Contraction of the second se	

Figure 13. Confirmation of participation



	TORATE JRC	EUR Europenthile Referrer Labor for Food Contact Mater
	IPT ACKNOWLEDGEMENT emperature Control (article fi	
Please complete the preser fax (+ 39 0332 785707) or e-mail (E	nt form to acknowledge the sample receipt a mmanouil.TSOCHATZIS@ec.europa.eu) w sample receipt	nd return it by ithin 14 days after the
а.		
LABORATORY NAME:		
LABORATORY CODE:		
SAMPLE CODE:	2	î
DATE OF RECEIPT:		
STATE OF SAMPLE:	÷.	
	l	
COMMENTS:		
Date	Name/Signa	ature

	EUROPEAN COMMISSION		
() I	GENERAL DIRECTORATE JF JOINT RESEARCH CENTRE	RC	EURI
Europewy	Institute for Health and Consul	mer Protection – IHCP	European Union Reference Laborator
Commission	Chemical Assessment and T	esting Unit	for Food Contact Materia
	INSTRUCTIONS AND	REQUESTED RESULT	rs
	ILC 01 2015: Tempera	ture Control (article filling	1)
at 70°C inside 0.5 cm from the inside the thi oven/incubator you do not hav EURL-FCM to n	thermostatic oven or incubate top, expose them simultaneous d test specimen, i.e. the o ast. Use a calibrated thermon a suitable calibrated thermon	with food simulant D1 (i.e. etha with food simulant D1 (i.e. ethal y and monitor the temperature of the filled last and/or placed in neter to carry out the temperature theter, you can use the digital pro- tood simulant. If possible, record a itself.	specimens to within of the food simulant nto the thermostatic ure measurements. If robe provided by the
the third test sp temperature eve	cimen is placed into the therm	g frequency: Read out the first va ostatic oven/incubator (t = 0 min t = 10 min to t = 30 min, read o sure time (t = 120 min).	n). Then read out the
specimens. If yo hotplate, measu hotplate or imm plate. If you pre	u preheat the food simulant in re the temperature as long as ediately after having removed	eheated food simulant before it side a thermostatic oven, inside the simulant is still inside the ov the preheated simulant from the ve oven, measure the temperate e microwave oven.	a liquid bath or on a /en/liquid bath/on the e oven/liquid bath/hot
	form a second test. There are	nt temperature only during one r also no requirements to identify	
temperature) to which the migra specimens and perform the mi operating proce simulant reache	preheat the test specimens, the tion test is carried out afterwa whether/how you cover the test gration test to the best of you dures that are in place in you	tere, for how long, at which tem food simulant and the thermost ards. It is also up to you how/ st specimens during the migrati ur knowledge , following eventu ir laboratory and trying to make $f (70 \pm 2)$ °C as soon as possible	atic oven/incubator in where to fill the test on test. You should ally present standard e sure that the food
Form.doc" or fill possible on the and the complet	in the print copy. Please also fil procedure that you have applied	"JRC.I.1.Form.FIT-EURL.06 ver in the questionnaire and provid to perform the migration test. So 32 78 5707) or by e-mail to Emm 30 th November 2015.	de as much details as end back your results
	nation, please contact Emman CHATZIS@ec.europa.eu).	ouil TSOCHATZIS (phone: +39 (0332 78 9548, e-mail:
Sincerely yours,	I		
C			
\bigcirc			
European Commiss	noneau EU Reference Laboratory for Food Con on, DG-Joint Research Centre Id Consumer Protection	tact Materials	
	nt and Testing Unit, T.P. 260		
	IT-EURL.04 ver.1 Instructions		Page 1 of 1

Figure 16. Instructions for the compilation of results

peen multoo	EUROPEAN COMMIS GENERAL DIRECTO JOINT RESEARCH C Institute for Health and Chemical Assessment	RATE JRC ENTRE I Consumer Protection – IHCP	EURI Liveran Urian Reference Laborat for Food Contact Materi
		BORATORY CODE	ing)
			1
200200000	DRY NAME:		
		17	
European Comm Institute for Healt	Simoneau ger, EU Reference Laborato ission, DG-Joint Research (th and Consumer Protection sment and Testing Unit, T.P		

		RATE JRC	n – IHCP	EU Europen tries Refer for Food Contact
	ILC 01 2015: To	TS REPORTING	ol (article filling)	
Use this form 30 th November 201	to submit your results 15 (deadline) by fax (+3	by entering data in the sp 9 0332 785707) or e-mai	ace provided below an (Emmanouil.TSOCHA	id return it until TZIS@ec.europa.eu)
	LABORATO	RY CODE	6	
	the preheated food	simulant:	°C ture monitored duri	ing the exposure:
t [min]	Toven, set [°C]	Toven, display [°C]	T _{simulant} [°C]	remarks
0	An 100000-0000 -00			S-
1	1			8
2	6	3	· · · · · · · · · · · · · · · · · · ·	0
3	8	8		2
4	Î.	1		
5	-			-
6	8	2 2		8
7	K	\$\$		6
8	5	÷		ž.
9	6		,	2
10	2	8 8		0
15			(
20				
25	8	8		6
30	8	»	-	< <u> </u>
45	5	÷		5
60	-			
75		2		
90	1	-		-
105	1			2
120	ć.	÷		ć.
where: t Town, set Town, display Tstradard	thermostatic oven/in set temperature of the temperature value si	is started immediately a cubator te thermostatic oven/incu hown at the display of the ood simulant inside the 3 ¹	bator oven/incubator itself	n is placed into the
PLACE AND	DATE I	ABORATORY MANAGE	R SI	GNATURE

Figure 18. Results reporting form

JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EURL Rearran Trin Televisia for Fand Contact Materials	GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	Nor Food Contact M
QUESTIONNAIRE		5) For how long did you let the simulant	
ILC 01 2015: Temperature Control (ar	ticle filling)	preheat (t [min])?	
Complete the form and return it until 30 th November 2015 (deadli	ine) by fax (+39.0332.785707)		
or e-mail (Emmanouil.TSOCHATZIS@ec.eu	iropa.eu)	8) How did you verify that the simulant reached the desired temperature during the	
LABORATORY CODE:		preheating step? (e.g. Did you put a probe inside the simulant portion OR did you put	
EXPERIMENTAL PART		a probe inside a separate simulant portion that was treated in the exact same way but	
PART I. Preheating of simulant, thermostatic oven and test sp	pecimens	was not used afterwards to fill the test specimens for the migration test? Did you	
Simulant		immerse the probe in the simulant portion during the entire preheating phase OR did	
 Did you preheat the simulant in single portions (each portion sufficient to fill one 		you insert it at the end of the preheating phase? Did you cover the simulant portion	
test specimen) or in one big portion (sufficient to fill all test specimens)? How		which contained the probe and, if so, how did you do it?)	
big was/were the portion(s) of simulant that you preheated (V [m])?		7) Please insert here a picture of the	
2) In what kind of glassware (or other inert	7	experimental setting (to preheat the simulant), if available.	
material) did you fill the simulant for preheating (e.g. a glass bottle, Erlenmeyer			
flask,)? Did you close or cover the device (e.g. with a glass stopper, screw cap, glass		8) Other comments on the preheating of the	
plate, watch glass, aluminium foil,)?		simulant	
 Where did you preheat the simulant portions (e.g. inside the same thermostatic 			
oven/incubator as used for the migration test afterwards, inside a separate		Thermostatic oven/incubator for migration ex	periment
thermostatic oven, on a hot plate, in a		9) What kind of thermostatic oven/incubator or	•
water bath, inside a microwave oven,)? 4) To which temperature did you preheat the		other device did you use to perform the migration test afterwards? Please specify	
simulant in order to carry out the migration test at 70°C (T (°C))?		the model, dimensions, volume, electric power, temperature range in which the	
		thermostatic oven can operate, possibility	
		for air circulation (fan) inside the oven, possibility for intervallic exchange of air.	
EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE	EURL	EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE	EU
EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit	P EURIC Krange Kate Advances for Find Conget Materials	EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EU Receipt face to for Figure Con
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards	P EURE Francisco de la compañía de	GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP	
GENERAL DIRECTORATE JAC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [°C])?	P EURE Renerge han before to hanny for freed Content Materials	GENERAL DIRECTORATE JRC JOINT AL SPRING GENERAL DIRECTORATE JRC JOINT AL SPRING JOINT ALS ARACH CONTREE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EU Register Brighter
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards	P EURE Renge from bitmen to haveny for Fred Conget Materials	GENERAL DIRECTORATE JRC JOHNST RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EU Program from Gerfund con
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oveninoublator in which you carried out the migration test afterwards (T (°C))? 11) For how long did you let the thermostatic	P EURIE Rennys trace blows to base for Field Conget Materials	GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC JOST JOST GENERAL DIRECTORATE JRC JOST GENERAL DIRECTORATE JRC JOST GENERAL DIRECTORATE JRC JOST JOST GENERAL DIRECTORATE JRC JOST JOST	EU Programme for Fred Cont
GENERAL DIRECTORATE JAC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [*C])? The second second second second second second second oven/incubator preheat (t [min])?	P EFFECT And a start of the second start of th	GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC JONN GENERAL DIRECTORATE JRC JONN Interpretation Test specimen T7) Did you preheat the test specimens? If so, how did you do it, meaning at which temperature (T (*G)), for how long (t (min)) and where (t (e_g), inside the same	EU Program too to for Prod Cost
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oveninoublator in which you carried out the migration test afterwards (T (°C))? 11) For how long did you let the thermostatic	P EFFECT And a start of the second start of th	GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 16) Other comments on the preheating of the thermostatic oven/incubator Test specimen 17) Did you preheat the test specimens? If so, how did you do it, meaning at which temperature (T (CI), for how long (kmin))	EU Program too to for Proof Cost
GENERAL DIRECTORATE JAC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [°C])? 11) For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the	P EFFECT to the the table to tab	GENERAL DIRECTORATE JRC JORN GENERAL DIRECTORATE JRC JORN GENERAL DIRECTORATE JRC JORN GENERAL DIRECTORATE JRC JORN JORN GENERAL DIRECTORATE JRC JORN JOR JORN JOR JORN JOR JORN JORN JOR JOR JORN JORN JORN	EU Program from the for Proof cost
GENERAL DIRECTORATE JAC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. To the importance of the migration test afterwards (T [CC])? To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [CC])? To how long did you let the thermostatic oven/incubator preheat (t [min])? To you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you dot (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air	P EFFECT Control that the training the training of the trainin	GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC	EU Program from the for Proof cost
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit. In the international of the internation overlinoubator is measure the air temperature) Isolary on beack inside the international of th	p	GENERAL DIRECTORATE JRC JONCOMPT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 16) Other comments on the preheating of the thermostatic oven/incubator Test specimen 17) Did you preheat the test specimens? If so, how did you do it, meaning at which temperature (T [rC]), for how long (t [min]) and where (e.g. inside the same thermostatic oven, in a heated/preheated metal block, inside a microwave oven,?	EU Program from for Proof cost
GENERAL DIRECTORATE JAC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [*C])? 11) For how long did you let the thermostatic oven/incubator preheat (t[min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do ti (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you ock whether the heat inside the thermostatic oven/incubator	P EFFECT Control that the two of t	GENERAL DIRECTORATE JRC JORN	EU Program from for Proof cost
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T (°C))? 11) For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you check whether the heat inside the fibermostatic oven/incubator was homogeneously distributed? If yes, how did you do it (e.g. several probes placed in	P	GENERAL DIRECTORATE JRC JORN	EEU Program from the Production
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T (°C))? 11) For how long did you let the thermostatic oven/incubator preheat (t [rmi])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you check whether the heat inside the thermostatic oven/incubator? Was homogeneously distributed? If yes, how did	P	GENERAL DIRECTORATE JRC JORNER STATE JRC JORNER STATE AND A LINE TO THE SEARCH OF LEWE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 18) Other comments on the preheating of the thermostatic ovenlinoubator Test specimen 17) Did you preheat the test specimens? If so, how did you do it, meaning <u>at which isemerature</u> (T (PC)). for how long (L (min)) and <u>whene</u> (e.g. inside the same thermostatic ovenlinoubator as used for the migration test afterwards, inside a separate thermostatic ovenlinoubator as used for the migration test afterwards, inside a separate thermostatic ovenlinoubator as used for the experimental setting (to preheat the test specimens), if available.	EU Program too be for Field car
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [*C])? 11)For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do ti (e.g. probe placed in an empty beaker inside the thermostatic over/incubator to measure the air temperature)? 13) Did you overlincubator is measure the air temperature)? 13) Did you check whether the heat inside the thermostatic oven/incubator was homogeneously distributed? If yes, how did you do it (e.g. several probes placed in different spots inside the thermostatic over/incubator - olose to the botton/veiling/side walls, in the centre??		GENERAL DIRECTORATE JRC JOINT RESEARCH OENTRE If () Other comments on the preheating of the thermostatic oven/incubator Test specimen 17) Did you preheat the test specimens? If so, how did you do it, meaning at which themperature (T (*G)), for how long (t (min)) and where (e.g. inside the same thermostatic oven/incubator as used for the migration test afferwards, inside a separate thermostatic oven/incubator as used for the migration test afferwards, inside a separate thermostatic as microwave oven)? 18) Please insert here a picture of the experimental setting (to preheat the test specimental setting (to preheat the test specimental setting to the test specimental setting to preheat specim	EU Program from the Proof cost
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. (10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T (°C))? (11) For how long did you let the thermostatic oven/incubator preheat (t [min])? (12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? (13) Did you ock whether the heat inside the thermostatic oven/incubator was homogeneously distributed? If yes, how did you do it (e.g. several probes placed in different spots inside the thermostatic oven/incubator - a close to the bottom/celling/side walls, in the ontre)? (14) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTR	EU Program for the for Field out
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. (1) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T (°C))? (1) For how long did you let the thermostatic oven/incubator preheat (t [fmin])? (1) For how long did you let the thermostatic oven/incubator preheat (t [min])? (12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you dot (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? (13) Did you obek whether the heat inside the thermostatic oven/incubator was homogeneously distributed? If yes, how did you do it (e.g. several probes placed in different spots inside the thermostatic oven/incubator - o lose to the bottom/celling/side walls, in the centre)? (14) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you turn it on during the preheating phase? If so, at which level		GENERAL DIRECTORATE JRC JORNERAL DIRECTORATE JRC MARKING ASSESSMENT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 16) Other comments on the preheating of the thermostatic oven/lincubator 17/ Did you preheat the test specimen 17/ Did you preheat the test specimens 19/ Diferse inset here a picture of the experimental setting (to preheat the test specimens), if available. 19/ Other comments on the preheating of test specimens 19/ Other comments on the preheating of test specimens PART II. Filling procedure	EU Program for the for Field out
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. (10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [*C])? (11) For how long did you let the themostatic oven/incubator preheat (t [min])? (2) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do ti (e.g. probe placed in an empty beaker inside the thermostatic over/incubator to measure the air temperature)? (13) Did you verify the temperature of the itemperature)? (13) Did you check whether the heat inside the thermostatic oven/incubator to was homogeneously distributed? If yes, how did you do ti (e.g. several probes placed in different spots inside the thermostatic oven/incubator is used in itemperature)? (14) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you tmit on during the preheating phase? If so, at which level (low/medium/ligh)? Did you notice effects		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTRE JOINT RESEARCH CENTR	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Instituté for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. (1) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T (FC))? (1) For how long did you let the thermostatic oven/incubator preheat (t [min])? (1) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? (13) Did you verify the temperature of the thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? (13) Did you verify the temperature of the does to the bottom/ceiling/side walls, in the centre)? (14) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you thm it on during the preheating phase? If so, at which level (low/medium/high)? Did you notice effects on the homogeneity of the temperature distribution inside the thermostatic		GENERAL DIRECTORATE JRC JORNER SCHORAGE JRC JORNER SCHORAGE JRC JORNER JRC JOR JORNER	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHC Chemical Assessment and Testing Unit. The second sec		GENERAL DIRECTORATE JRC JORNERAL DIRECTORATE JRC JORNERAL ADDRESSION CONTRESSARCA CONTREE JORNERAL ADDRESSION CONTRESSARCA CONTREE JORNERAL ADDRESSION AND CONTRESSARCA CONTRESSARC	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [°C)]? 11)For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do t (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you verify the temperature did the mostatic oven/incubator is to weak whether the heat inside the thermostatic oven/incubator was homogeneously distributed? If yes, how did you do it (e.g. several probes placed in different spots inside the thermostatic oven/incubator - close to the botom/roueling/side walls, in the centre)? 14) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you turm it on during the preheating phase? If so, at which level (low/medium/sigh? Did you notice effects on the homogeneity of the temperature distributotor inside the thermostatic oven/incubator? 15) In case your thermostatic oven/incubator		GENERAL DIRECTORATE JRC Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 18) Other comments on the preheating of the thermostatic oven/incubator 17) Did you preheat the test speciments? If so, how did you do it, meaning at which temperature (T [C]), for how long (t [mit]) and wheng (e.g. inside the same thermostatic oven/incubator as used for the migration test aflerwards, inside a separate thermostatic oven/incubator as used for the experimental setting (to preheat the test specimens), if available. 19) Other comments on the preheating of test specimens 19) Other comments on the preheating of test specimens 10) Other comments on the preheating of test specimens 10) Other comments on the preheating of test specimens 20) Where did you fill the test specimens (e.g. under the furme hood, inside the thermostatic oven/incubator, on a work bench)? 21) In case you filled the test specimens	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [CO])? 11)For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you heck whether the heat inside the thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you thm it on during the preheating phase? If so, at thermostatic oven/incubator		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 18) Other comments on the preheating of the thermostatic oven/incubator 17) Did you preheat the test specimens? If so, how did you do it, meaning at which temperature; (T [CI), for how long (t [min]) and where; (e.g. inside the same thermostatic oven/incubator as used for the migration test afterwards, inside a separate thermostatic oven/incubator as used for the experimental setting (to preheat the test specimens), if available. 19) Other comments on the preheating of test specimens. If available. 19) Other comments on the preheating of test specimens. If available. 20) Where did you fill the test specimens (e.g. under the fume hood, inside the thermostatic oven/incubator, on a work bench? 21) In case you filled the test specimens guidide the thermostatic oven/incubator, how long was the approximate distance to	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHC Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [*C])? 11) For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you verify the temperature distributor? If you do to (e.g. several probes placed in different spots inside the thermostatic oven/incubator in the oenter)? 14) In case your thermostatic oven/incubator inside, did you notice effects on the homogeneity of the temperature distribution inside the thermostatic oven/incubator? If you notice teffects on the homogeneity of the temperature distribution inside the thermostatic oven/incubator? If you notice effects on the homogeneity of the temperature distribution inside the thermostatic oven/incubator? If you notice effects on the homogeneity of the temperature distribution inside of air, did you enable it during the preheating phase? If so, at which frequency? Did you notice effects on		GENERAL DIRECTORATE JRC JONNER TRESERACY CENTRE JONNER ASSARDMENT RESERACY CENTRE JONNER ASSARDMENT AND TRESERACY CENTRE JONNER ASSARDMENT AND TRESERACY CENTRE JONNER ASSARDMENT AND TRESERACY CENTRE Information of the theme and testing that Information of the test specimens of the thermostatic over/incubator as used for the migration test afferwards, inside a separate thermostatic over/incubator as used for the migration test afferwards, inside a separate thermostatic over/incubator as used for the migration test afferwards, inside a separate thermostatic over/incubator as used for the experimental setting (to preheat the test specimens), if available. 10) Other comments on the preheating of test specimens 10) Other comments on the preheating of test specimens 20) Where did you fill the test specimens (e.g. under the furme hood, inside the thermostatic over/incubator, on a work bench)? 21) In case you filled, the test specimens guttide the thermostatic over/incubator,	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHO Chemical Assessment and Testing Unit. 10) To which temperature did you preheat the thermostatic oven/incubator in which you carried out the migration test afterwards (T [CO])? 11)For how long did you let the thermostatic oven/incubator preheat (t [min])? 12) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you verify the temperature of the preheated thermostatic oven/incubator? If yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 13) Did you heck whether the heat inside the thermostatic oven/incubator is equipped with a fan to enable air circulation inside, did you thm it on during the preheating phase? If so, at thermostatic oven/incubator		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 18) Other comments on the preheating of the thermostatic oven/incubator 17) Did you preheat the test specimens? If so, how did you do it, meaning at which temperature; (T [CI), for how long (t [min]) and where; (e.g. inside the same thermostatic oven/incubator as used for the migration test afterwards, inside a separate thermostatic oven/incubator as used for the experimental setting (to preheat the test specimens), if available. 19) Other comments on the preheating of test specimens. If available. 19) Other comments on the preheating of test specimens. If available. 20) Where did you fill the test specimens (e.g. under the fume hood, inside the thermostatic oven/incubator, on a work bench? 21) In case you filled the test specimens guidide the thermostatic oven/incubator, how long was the approximate distance to	

Figure 19. Questionnaire form (continued)

EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EURL Internet Contract Materials	EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Haith and Consume Protection – IHCP Chemical Assessment and Testing Unit	for Feed Cont
22)In case you filled the test specimens		28) Did you do intentional breaks in between	
<u>outside</u> the thermostatic oven, where were		the filling of two test specimens <u>outside</u> or	
the test specimens placed on while being		inside the oven/incubator, meaning that	
filled (e.g. a non-insulated, insulated,		you waited e.g. for one or more minutes	
preheated or heated surface)? What was		after having filled one test specimen (and	
this surface made of (e.g. ceramics, wood,		having it placed into the oven/incubator)	
PTFE, metal,)?		and before filling the next test specimen? If	
23) In case you filled the test specimens		so, how long was the intentional delay	
outside the thermostatic oven/incubator, did you fill all test specimens at once and		between the filling of two test specimens (t[min])?	
did you fill all test specimens at once and place them into the thermostatic		(t [min])? 27) Did you cover the filled test specimens? If	
oven/incubator at once or did you fill each		so, when did you do it (e.g. immediately	
test specimen separately and place each		after filling the test specimens OR once the	
item into the thermostatic oven/incubator		test specimens were placed inside the	
immediately? Did you close the		thermostatic oven/incubator,)? What did	
thermostatic oven/incubator in between		you use to cover the test specimens (e.g.	
placing the different test specimens inside? 24) In case you filled the test specimens		one or more glass plates, watch glass,	
outside the thermostatic oven/incubator,		aluminium foil,)? 28) Did you place the test specimens as such	
how long did it take you to fill each test		inside the thermostatic oven/incubator or	
specimen/all test specimens and place		did you put them in a glass beaker, metal	
it/them inside the thermostatic		block,(with/without insulation material)?	
oven/incubator (time between removing the			
simulant from the place where it was		29) Did you take special precautions to prevent	
preheated until placing the filled test		extensive heat losses of the simulant once	
specimen(s) into the thermostatic overvincubator [min])?		it was removed from the place where it had	
25) In case you filled the test specimens inside		been preheated? If yes, please specify which.	
the thermostatic over/incubator, for how			
long did the door of the thermostatic		30) Was the filling done by a single person or	
oven/incubator remain open? Did you close		did you work in teams of two or even more persons in order to proceed faster?	
it in between filling the different test specimens?		herenza ur arder to hronigg (9366):	
specimens r			
		31) What was the ambient temperature of the laboratory when filling the test specimens?	
2.5		4 N	
EUROPEAN COMMISSION GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Hasting of Consumer Protection – IHCP		EUROPEAN COMMISSION GENERAL DIRECTORATE IRC JOINT RESEARCH CENTRE Institute for Health and Forsmer Protection – IHCP	EUR
GENERAL DIRECTORATE JRC	EURE Konge to kolome takanay for Food Conget Materials	GENERAL DIRECTORATE JRC	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EUR Response Sections for Find Conget W
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test	ter faar Cetter h
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available.		GPNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [mi])?	EUR Provide Autor for Find Conjust
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit		GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available.		GENERAL DIRECTORATE JRC JONT RESEARCH CENTRE Distuite for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [mi])? 38) Did you set a constant temperature for the	The Food Contact W
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available.		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC	EUR Internet for Angel
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available.		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 32) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC	the Face Contact by
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure PART III. Exposure phase		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filing procedure PART III. Exposure phase 34) What kind of data logger/thermometer did		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Consumer And Testing Unit State of the approximation of the experimental setting (to fill the test specimens), if available. Solution		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC	the frag Contact th
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit General Assessment and Testing Unit Galaxies (to fill the test specimens), if available. Galaxies (to fill the test specimens),		GENERAL DIRECTORATE JRC GONERAL DIRECTORATE JRC	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure PART III. Exposure phase 34) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Chemical Assessment and Testing Unit S7) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? S8) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator during the memostatic oven/incubator during the exposure during the set value once the exposure or the set value once the oven/incubator during the exposure phase (T [°C])? If you changed	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 4) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Unit RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [mi])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure on did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator during the exposure and then lowered the set value once the oven/incubator during the exposure phase (T [*G])? If you changed the set temperature, inside the themostatic oven/incubator during the exposure phase (T [*G])? If you changed the set memperature inside the themostatic oven your set	the first details
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure PART III. Exposure phase 34) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in case you used an additional data		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Chemical Assessment and Testing Unit Tore of the Standard Seessment and Testing Unit (V [m])? S8) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator or the simulant reached again the desired temperature? What was/were the set temperature? What was/were in set temperature? What was/were when did you changed the set temperature, when did you change if? Do you know to which air temperature inside the thermostatic oven your set walkes correspond?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 4) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC District for Health and Consume Protection – IHOP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? 30) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature, at the beginning of the exposure and then lowered the set value once the oven/incubator during the exposure phase (T(C))? If you changed the set temperature, when did you change if 20 boy uk now to which air temperature inside the thermostatic oven your set values correspond? 30) Did you very the temperature of the	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please insert here a picture of the experimental setting (to fill the test speciments), if available. 33) Other comments on the filling procedure 7AT III. Exposure phase 34) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Instruit for Health and Consumer Protection – HCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator during the exposure and then lowered the set value once the oven/incubator during the exposure the set temperature? What was/were the set temperature? What was/were the set temperature; You changed the set temperature, when did you change the set temperature, when did you change the set temperature, when did you change the set temperature or the thermostatic oven your set values correspond? 30) Did you werify the temperature of the themestatio oven/incubator during the exposure phase (TP(C))?	The second
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHOP Chemical Assessment and Testing Unit 32) Please Insett here a picture of the experimental setting (to fill the test specimens), if available. Solution of the setting of the test you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in case you used an additional data logger/thermometer, please specify the model, shaped/mersions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator throughout the exposure and then lowered the set value once the oven/incubator or the simulant reached again the beginning of the exposure phase (T [*G])? If you changed the set temperature(s) for the themostatic oven/incubator during the exposure phase (T [*G])? If you change the set temperature inside the thermostatic oven your set values correspond? 30) Did you verify the temperature of the themostatic oven/indubator during the exposure phase (T [*G])? If you changed the set temperature of the thermostatic oven/indubator during the exposure phase (T [*G])? If you change the set temperature inside the thermostatic oven your set values correspond?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHOP Chemical Assessment and Testing Unit 32) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 94XT III. Exposure phase 94/What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in case you used an additional data logger/thermometer, please specify the model, shaped/immensions of the probe, temperature range in which the probe can operate, acouragy, whether it is settemally calibrated and, if so, the frequency of the		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Unit RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit (/ [m])? (38) Did you set a constant temperature for the thermostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a value once the oven/incubator throughout the exposure and then lowered the set value once the oven/incubator during the exposure and then lowered the set value once the oven/incubator during the exposure phase (T [*G])? If you change it? Do you know to which air temperature inside the thermostatic oven/incubator during the exposure phase (T [*G])? If yes, how did you do it (e.g., probe placed in an empty beaker	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 94) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you and not use the digital thermometer provided by the JRC or in case you used an additional data logger/thermometer (the probe. temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control.		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Mathematical Assessment and Testing Unit Strate for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit Strate assessment assessment and Testing Strate Assesstrate Assessment and Testing Strate Assessment and Testing	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 24) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the model, shaped/imensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control.		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Market for Halth and Consumer Protection – IHOP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? 30) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature, at the beginning of the exposure or did you change the themostatic oven/incubator during the exposure phase (T (C))? If you change the set temperature, when did you change it? Do you know to which air temperature inside the thermostatic oven/incubator during the exposure phase(T yes, how did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please insert here a picture of the experimental setting (to fill the test specimental setting (to fill the test speciments), if available. 33) Other comments on the filling procedure 43() What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the model, shapeldimensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control. 35() In order to monitor the temperature of the simulant during the exposure phase of the		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Mathematical Assessment and Testing Unit Strate for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit Strate assessment assessment and Testing Strate Assesstrate Assessment and Testing Strate Assessment and Testing	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 9		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Mathematical Assessment and Testing Unit Strate for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit Strate associated approximately from the filled test specimers during the migration test (V [m])? S8) Did you set a constant temperature for the themostatic overvincubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the overvincubator of the simulant reached again the desired temperature? What was/were the set temperature? What was/were the set walue once the overvincubator during the exposure phase (T [*0])? If you changed the set temperature, when did you do the set temperature, when did you do the exposure phase? If yes, how did you do the optower in an empty basker inside the themostatic oven/incubator to measure the air temperature?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit Signature		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC District for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the the mostatic oven/incubator throughout the exposure and then lowered the set value once the oven/incubator the simulant reached again the beginning of the exposure and then lowered the set value once the oven/incubator throughout the exposure and then lowered the set value once the oven/incubator or the simulant reached again the beginning of the exposure phase (T [*C])? If you changed the set temperature(s) for the thermostatic oven/incubator during the exposure phase (T [*C])? If you changed the set temperature of the thermostatic oven/incubator during the exposure phase (T [*C])? If you changed the set temperature of the thermostatic oven/incubator during the exposure phase (T [*C])? If you olver to values correspond? 30) Did you verify the temperature of the thermostatic oven/incubator to measure the air temperature)? 40) Did you check whether the heat inside the thermostatic oven/incubator to measure the air temperature)?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Mit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 4 4 4 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 5 4 5 4 5 5 4 5 5 4 5		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Unstruct for Health and Consumer Protection – HCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [mi])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the set temperature(s) for the themostatic oven/incubator during the exposure phase (T [*0])? If you changed the set temperature, when did you change it? Do you know to which air temperature inside the themostatic oven/incubator during the exposure phase (T [*0])? Up you changed the set temperature, when did you do tit (e.g., probe placed in an empty beaker inside the themostatic oven/incubator to measure the air kennerature? 40) Did you chanket the heat inside the themostatic oven/incubator to measure the air kennerature.	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Inset: here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 24) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the model, shaped/imensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the preventional outrol. 30 in order to monitor the temperature of the simulant during the exposure phase of the prevent migration test, did you insert a probe in one of the filed test specimens (first/second or third replicate?) or did you insert a probe in a separate protino of		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimers during the migration test (V [m])? 38) Did you set a constant temperature for the themostatic overlincubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the overfinicubator of the simulant reached again the desired temperature? What was/were the set temperature? What was/were the set temperature? What was/were when did you changed the set temperature, when did you do it (e.g. probe placed in an empty beaker inside the thermostatic overlincubator to measure the air temperature? 40) Did you werky the temperature of the thermostatic overlincubator to measure the air temperature? 40) Did you werky the temperature of the the mostatic overlincubator to measure the air temperature? 40) Did you check whether the heat inside the thermostatic overlincubator to measure the air temperature? 40) Did you check whether the heat inside the thermostatic overlincubator in was homogeneously distributed during the exposure phase? If yes, how did you do it (e.g. several probes placed in different spots inside the thermostatic	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Mit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 4 4 4 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 5 4 5 4 5 5 4 5 5 4 5		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Consume Protection – IHOP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure and then lowered the set value once the oven/incubator the semilart reached again the beginning of the exposure and then lowered the set value once the oven/incubator throughout the exposure and then lowered the set value once the oven/incubator of the simulant reached again the beginning of the exposure phase (T [*C])? If you changed the set temperature(s) for the thermostatic oven/incubator during the exposure phase (T [*C])? If you changed the set temperature of the thermostatic oven/incubator during the exposure phase (T [*C])? If you changed the set temperature of the thermostatic oven/incubator during the exposure phase (T [*C])? If you changed the set temperature? You write the temperature of the thermostatic oven/incubator during the exposure phase (T #\$, show did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature)? 40) Did you check whether the flat middle during the exposure phase (T #\$, show did you do it (e.g. serveral probes placed in different spots inside the thermostatic onverlincubator to measure the air temperature)?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 34) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the model, shaped/imensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control. 35) In order to monitor the temperature of the simulant during the exposure phase of the probe in one of the filled test specimens (first/second or third replicate?) or did you insert a probe in a separate portion of simulant (e.g. in a glass botte) not in		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Stand Sessence ACTINE Instruct for Health and Consume Protection – HCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the the messatic overincubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the overincubator during the exposure and then lowered the set value once the overincubator during the exposure and then lowered temperature? What waslwere the set temperature(s) for the thermostatic overincubator during the exposure phase (T [*0])? If you changed the set temperature, when did you during the exposure phase (T [*0])? Use used values correspond? 30) Did you verify the temperature of the themostatic overincubator to messate values correspond? 30) Did you verify the temperature of the themostatic overincubator to measure the air temperature (s) measure the air temperature (s) measure the air temperature of the thermostatic overincubator to measure the air temperature (s) the tempostatic overincubator to measure the air temperature (s) the temperature (s) the temperature (s) the temperature (s) the temperature (s) so (s) Did you verify the temperature of the themostatic overincubator to measure the air temperature (s) the air temperature (s) the set temperature (s) the set temperature (s) the te	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 94 What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer, please specify the model, shaped/imersions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control. 35) In order to monitor the temperature of the simulant during the exposure phase of the present ingration test, did you insert a probe in one of the filed test speciments (first/second rotid regioner) or did you insert a probe in a separate portion of simulant during the exposure phase bottie) not in contact with a test specime but tested in		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Consume Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the the mostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator or the simulant reached again the desired temperature? What was/were the set walue once the oven/incubator or the simulant reached again the desired temperature? What was/were when did you changed the set temperatures (s) for the thermostatic oven/incubator during the exposure phase (T [CI])? If you changed the set temperature (s) the the set temperature (s) the set temperater (s) the set temperate (s) the set temperate (s)	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consumer Protection – IHCP Chemical Assessment and Testing Unit. 32) Please insert here a picture of the experimental setting (to fill the test speciments), if available. 33) Other comments on the filling procedure 33) Other comments on the filling procedure 9ART III. Exposure phase 94) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you used an additional data logger/thermometer, please specify the model, shaped/mensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the predictal control. 35) in order to monitor the temperature of the simulant during the exposarie phase of the present migration test, did you insert a probe in one of the filled test specimens (first/second or third replicate?) or did you insert a probe in a separate portion of simulant (e.g. in a glass bottle) not in contact with a test specimen but treated in the exact same way?		GBNERAL DIRECTORATE JRC GANERAL DIRECTORATE JRC Mathematical Sessement characterization of the protection – HCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filed test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the thermostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the set temperature(s) for the thermostatic oven/incubator during the exposure phase (T [*0])? If you changed the set temperature, inside the thermostatic oven/incubator during the exposure phase (T [*0])? Usu changed the set temperature of the thermostatic oven/incubator during the exposure phase (T [*0])? Usu changed the set temperature inside the thermostatic oven/incubator to measure the air temperature inside the thermostatic oven/incubator to measure the air temperature of the thermostatic oven/incubator to measure the air temperature (s) indid the temperature of the thermostatic oven/incubator to measure the air temperature (s) indid the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) on (s) used the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature (s) the thermostatic oven/incubator to measure the air temperature(s) the thermostatic oven/incubat	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. Consume Protection – IHCP Consume Protection – IHCP Consumer Protecti		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Consume Protection – IHCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the themostatic oven/incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the oven/incubator of the simulant reached again the desired temperature? What was/were the set temperature? What was/were the set temperature? What was/were when did you or hanged the set temperature, when did you do it (e.g. probe placed in an empty beaker inside the thermostatic oven/incubator to measure the air temperature? 40) Did you verify the temperature of the thermostatic oven/incubator to messure the air temperature? 40) Did you verify the temperature of the thermostatic oven/incubator to measure the air temperature? 40) Did you verify the temperature of the thermostatic oven/incubator to measure the air temperature? 40) Did you verify the temperature of the thermostatic oven/incubator to measure the air temperature? 40) Did you verify the temperature of the thermostatic oven/incubator to measure the air temperature? 40) Did you verify these the heat inside the thermostatic oven/incubator to measure the air temperature? 40) Did you verify these the heat inside the thermostatic oven/incubator to measure the air temperature? 41) In case your thermostatic oven/incubator is equipped with a fan to enable air circulation inside did you that in the dentre?	
GeNERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit. 32) Please Insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 33) Other comments on the filling procedure 4 33) Other comments on the filling procedure 4 4 4 4 4 4 5 4 5 4 5 4 5 4 5 4 5 4 5		GBNERAL DIRECTORATE JRC GANERAL DIRECTORATE JRC Chemical Assessment and Testing Unit Simulation of the Second and Testing Unit Simulation of the Second and Testing Unit Simulation of the Second Se	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Demical Assessment and Testing Unit. Consume Protection – IHCP Consume Protection – IHCP Consumer Protection – IHCP Construction		GENERAL DIRECTORATE JRC GENERAL DIRECTORATE JRC Instrute for Health and Consume Protection – HCP Chemical Assessment and Testing Unit 37) How much simulant evaporated approximately from the filled test specimens during the migration test (V [m])? 38) Did you set a constant temperature for the the mostatic over-incubator throughout the exposure or did you set a higher temperature at the beginning of the exposure and then lowered the set value once the over-fincubator of uning the exposure and then lowered the set value once the over-fincubator of uning the exposure and then lowered the set value once the over-fincubator of uning the exposure phase (T[CQ])? If you changed the set temperature, when did you do it (e.g. probe placed in an empty basker inside the thermostatic oven/incubator to measure the at temperature of the themostatic oven/incubator to measure the at temperature of the temperature; 40) Did you verky the temperature of the themostatic oven/incubator to measure the at temperature; 40) Joid you verky the temperature of the thermostatic oven/incubator to measure the at temperature; 40) Did you check whether the heat inside the thermostatic oven/incubator to measure the at temperature; 40) Joid you check whether the heat inside the thermostatic oven/incubator to measure the at inside the thermostatic oven/incubator to measure the at temperature; 41) In case your thermostatic oven/incubator is bottor/veiling/side walls, in the centre;? 41) In case your thermostatic oven/incubator is inside, did you turn it on during the exposure phase? If so, at which level (low/meliminkipity) Did you notee effects 10 the set of the set of the the oncubation incubation incubation inside, did you turn it on during the exposure phase? If so, at which level (low/meliminkip	
GENERAL DIRECTORATE JRC JOINT RESEARCH CENTRE Institute for Health and Consume Protection – IHCP Chemical Assessment and Testing Unit 20) Please insert here a picture of the experimental setting (to fill the test specimens), if available. 33) Other comments on the filling procedure 33) Other comments on the filling procedure 33) Other comments on the filling procedure 34) What kind of data logger/thermometer did you use to monitor the simulant temperature during the migration test? In case you did not use the digital thermometer provided by the JRC or in case you used an additional data logger/thermometer, please specify the model, shape/dimensions of the probe, temperature range in which the probe can operate, accuracy, whether it is externally calibrated and, if so, the frequency of the periodical control. 35) In order to monitor the temperature of the simulant during the exposure phase of the present migration test, did you insert a probe in one of the filed test specimens (first/second the stet specimen but treated in the exact same way? 36) Did you cover the Item where the probe was inside? If so, what did you use to cover it (e.g. with one or more glass plates, a watch glass, aluminium fol, a special		GBNERAL DIRECTORATE JRC GANERAL DIRECTORATE JRC Chemical Assessment and Testing Unit Simulation of the Second and Testing Unit Simulation of the Second and Testing Unit Simulation of the Second Se	

Figure 19. Questionnaire form (continued)

EUROPEAN COMMISSION GENERAL DIRECTORATE (RC JOINT RESEARCH CONTRE Instatute for Hanh and Consumer Protection – IHCP Chemical Assessment and Testing Unit	EUROPEAN COMMISSION General International Consumer Protection – HCP Chemical Assessment and Testing Unit
42) In case your thermostatic over\incubator provides the possibility for an automated intervallic exchange of air, did you enable it during the exposure phase? If so, at which frequency? Did you notice effects on the temperature constancy inside the over\incubator?	GENERAL COMMENTS 47) Please put any other comment here.
43) What was the sample load of the thermostatic oven/incubator during the exposure phase (very crowded/half- full/almost empty)? Did you have other test specimens inside, in addition to the ones required for this ILC?	
44) Please insert here a picture of the experimental setting of the filled test specimers and data logger/thermometer inside the thermostatic over/incubator, if available. You can take the picture at the end of the exposure phase when you have just opened the door of the thermostatic over/incubator.	
45) Other comments on the exposure phase	
PROCEDURE FOR CONSECUTIVE MIGRATIO (REPEATED-USE ARTICLES)	TS
46) If you perform three consecutive migration tests by article filling in order to assess the migration from repeated-use articles, do you usually perform the three tests immediately one after the other while the test specimens are still warm from the previous migration test or do you wait for the test specimens to cool down before you proceed with the next migration test? (Please note that this question is not directly related to the migration test camied out in the present ILCI)	

Figure 19. Questionnaire form

12.2. Results reported by the participants

Table 1. Rounded results and achieved points

S	pid: bid: bid: bid: bid: bid: bid: bid: b	bd	100	24	24	19	67	100	0	100	100	48	0	0	81	100	0	0	38	0	48	0	100	0	100	33	14	100	100	62	95	48	100
s	pid: b9	bd	21	5	5	4	14	21	0	21	21	10	0	0	17	21	0	0	8	0	10	0	21	0	21	2	3	21	21	13	20	10	21
	120		71	60	63	62	65	71	67	71	71	70	66	65	71	69	52	65	69	68	70	66	70	62	69	71	70	71	70	70	71	68	71
	105		71	60	63	62	65	71	67	71	71	70	66	65	71	69	52	65	69	68	20	66	70	62	70	71	69	71	70	70	71	68	71
	95		71	60	62	62	65	71	99	71	71	70	66	65	71	69	51	65	69	67	70	66	70	62	70	71	68	71	70	70	71	69	71
	75		71	60	62	62	66	71	64	70	71	70	66	65	71	69	51	64	69	67	02	65	70	62	70	70	67	71	70	69	71	69	71
	09		71	61	62	63	66	71	62	70	71	69	66	65	71	69	51	64	69	66	02	65	70	62	70	70	67	71	70	69	71	69	71
	45		71	62	63	63	67	71	62	70	71	69	66	65	71	69	52	64	68	99	20	65	70	62	70	69	99	71	69	69	71	70	71
	30		71	63	63	65	68	71	61	70	71	69	66	64	71	69	53	64	68	65	69	65	69	63	71	68	65	71	69	69	70	70	71
	25		71	64	64	65	68	71	61	69	71	69	66	64	71	69	54	63	68	65	69	65	69	63	71	68	64	71	69	69	71	70	71
	20	ູ່ວ	70	65	64	99	69	71	61	69	71	68	67	64	71	69	55	63	68	65	69	65	69	63	72	67	63	71	70	69	70	69	7
(min)	15	ture (70	99	65	68	69	71	61	69	71	68	67	64	71	69	57	63	68	64	68	65	69	64	72	67	63	71	71	69	71	68	71
Time (min	10	emperature	70	67	99	20	70	71	61	69	71	68	67	64	70	69	-	63	68	64	67	65	68	64	71	99	62	71	71	68	71	67	71
F	6	Tem	70	67	99	71	70	71	61	69	70	68	67	64	70	69		63		-	67	65		64	71	99	62	71	71	68	71	67	71
	8		70	67	67	71	70	71	61	69	70	68		64	70	69	59	63		64	67	65	68	65	71	99	62	71	71	68	71	67	71
	2		70	67	67	-	70	71	61	69	70	68	67	63	70			63						65		99	62	71	71	68	71	67	7
	ၑ		70	68	_	73	70	71	61	69	70		67	63	69			63			99			_	70	65	62	71	71	68	72	99	71
	2	9. s	70		68			71	61	68	_	68		63	69 (63	. 68	64	99	. 64		65	20	92	61	71		68		99 (
	4	i) i	70	68	-	5 74		71	61	89 8		67		62	69 8			63				_		65		65	62	71	27	, 68	27		_
	e	a ,	70	68		3 75		71	61	89 8	69 (61	68			3 63				_		_		1 65		71	72	79 7	2 72	3 66	
	2		70	69 (3 76		71	61	3 68	_	7 67	3 68) 61	3 67	69 (_	3 63				3 64	-		_	t 64	3 62	71	71	7 67	2 72	-	71
	-		07 C	69 C	8 69			1 71	1 61	8 68	1 70	7 67	8 68	09 C	99 GG			3 63	_	-			_	5 65	_			1 71	1 71	5 67	2 72		
	0		70	70		o 76			61	68		a 67				69		63		_	9	-	68	_		63			71	66		65	7
	de. bo		LC0040	LC0018	LC0007a	LC0007b	LC0055	LC0017	LC0047	LC0028	LC0056	LC0037a	LC0037b	LC0037c	LC0013	LC0025	LC0003	LC0041	LC0113	LC0020	LC0031	LC0016	LC0011	LC0050	LC0005	LC0049	LC0034	LC0043	LC0006	LC0010	LC0044	LC0008	LC0021

S	bid: bid: bid: bid: bid: bid: bid: bid:	bd	57	100	43	10	29	91	5	24	100	5	5	24	100	14	100	0	100	24	0	0	0	29				
	bid: bə nic		12	21	6	2	9	19	1	5	21	٢	1	5	21	3	21	0	21	5	0	0	0	6				
	120		63	70	69	68	69	71	67	68	71	63	67	75	70	67	69	68	71	71	55	68	59	69				
	105		63	71	69	68	69	71	67	68	71	63	66	72	70	67	69	67	71	70	56	67	59	69				
	95		63	69	69	68	69	71	67	68	71	63	66	71	70	66	69	67	70	70	57	67	59	69				
	75		63	70	69	68	69	20	99	67	11	63	65	02	69	99	69	99	20	69	58	99	59	69				
	09		64	70	69	68	68	20	99	67	17	63	65	69	69	65	69	99	20	69	58	99	60	69				
	45	99	-	-	-	-	65	69	69	68	68	20	65	99	71	64	64	68	70	65	70	65	20	68	57	64	60	68
	30						99	66	69	68	67	68	20	65	67	71	64	64	67	70	65	70	65	69	99	57	63	61
	25		67	70	68	67	68	20	65	67	71	64	64	99	70	65	70	65	69	99	57	62	61	68				
	5 0	(°)	67	71	68	67	68	20	64	67	71	65	64	99	70	99	70	65	69	65	58	62	62	68				
Time (min)	15	ature (68	72	68	67	68	20	64	67	71	65	64	99	70	99	70	65	69	64	58	61	62	67				
Time	9	Temperature	69	70	60	67	68	20	64	68	71	65	65	99	69	67	69	65	69	64	59	60	63	67				
	ရ	Ter	69	70	60	67	68	20	64	68	71	65	65	99	69	67	69	65	69	64	09	60	63	. 67				
	8		70	9 68	09 (29 2	3 68	02 6	3 63	3 68	71	5 65	5 65	99 (69 (79 7	69 (5 65	69 (3 63	09	09 (3 63	8 67				
	6 7		70 7C	1 69	59 60	67 67	68 68	69 69	63 63	68 68	1 71	65 65	65 65	66 66	69 69	67 67	69 69	65 65	69 69	63 63	1 61	59 59	64 63	<u>66 66</u>				
	с С		70 7	69 71	59 5	67 6	68 6	69 69	63 6	68 6	71 71	66 6	65 6	66 6	69 6	68 6	69 6	65 6	69 69	63 6	61 61	58 5	n/a 6	66 6				
	4		71 7	68 (58 5	67 (68 (9 69	63 (68 (2 12	66 (65 (999	69 (68 (69 (999	9 69	62 (62 (57 5	64 r	66 6				
	ო		71	70	58	67	68	69	63	68	71	99	66	99	69	68	70	99	69	62	62	57	64	99				
	2		72	69	58	67	68	68	63	68	71	66	66	67	69	68	70	99	69	62	63	56	n/a	65				
	-		72 70	70	57	67	67	68	63	68	71	67	67	67	69	69	70	99	69	61	63	55	65	65				
	0		73	70	57	67	67	67	68	69	71	68	68	68	69	69	70	67	69	61	64	56	64	64				
	d6- bo		LC0038	LC0026	LC0064	LC0054	LC0062	LC0032	LC0059	LC0014	LC0046	LC0114a	LC0114b	LC0114c	LC0114d	LC0114e	LC0114f	LC0061	LC0024	LC0002	LC0121	LC0122	LC0120	LC0123				

Table 1.	Rounded	results	and achieved	points	(continued)
	Rounaca	results		pointo	(continueu)

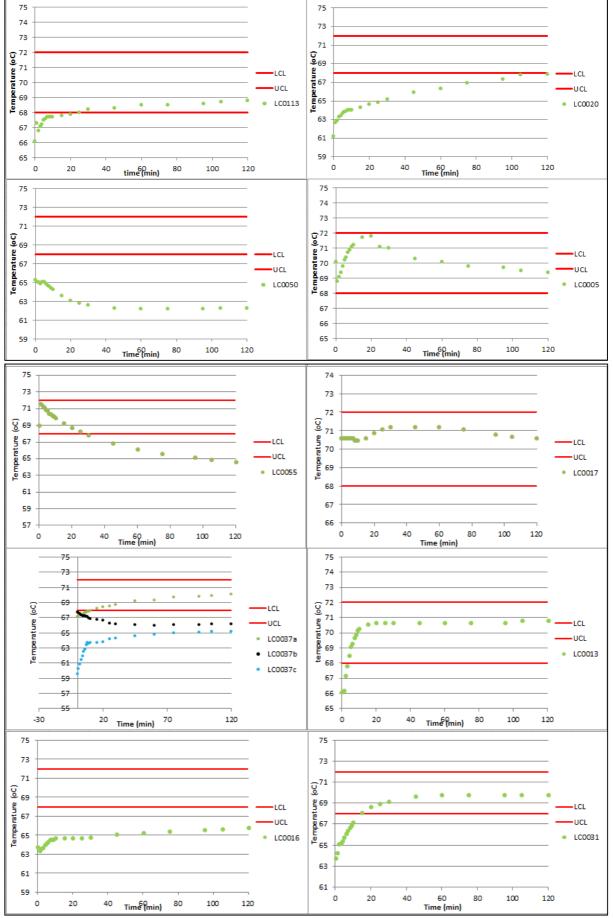


Figure 20 Graphical representation of participant's results (continued)

EURL-FCM

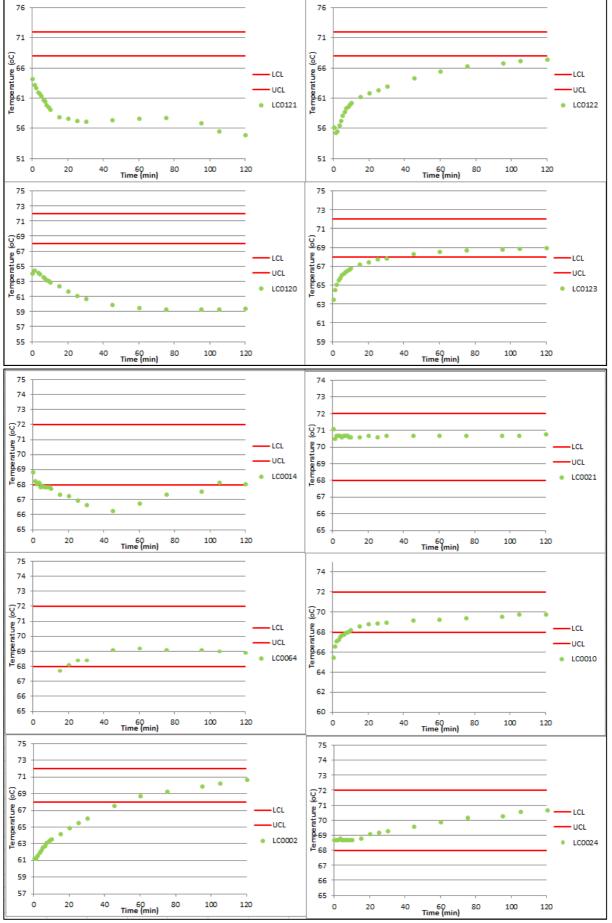


Figure 20 Graphical representation of participant's results (continued)

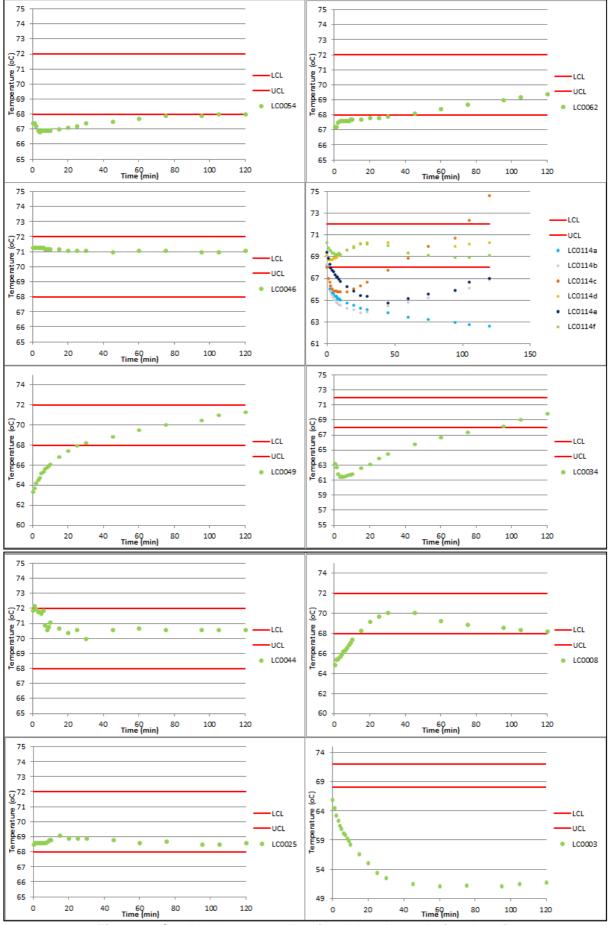


Figure 20 Graphical representation of participant's results (continued)

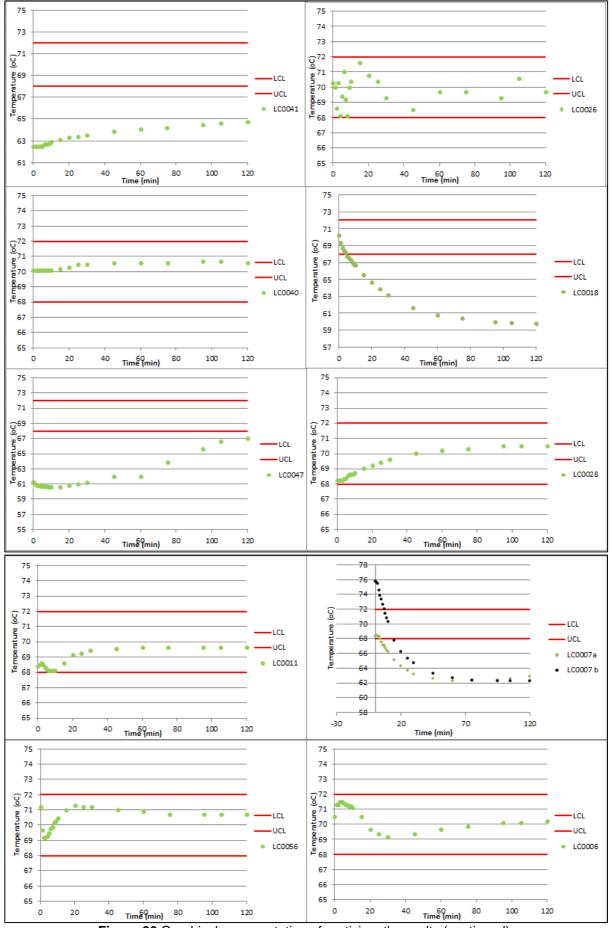


Figure 20 Graphical representation of participant's results (continued)

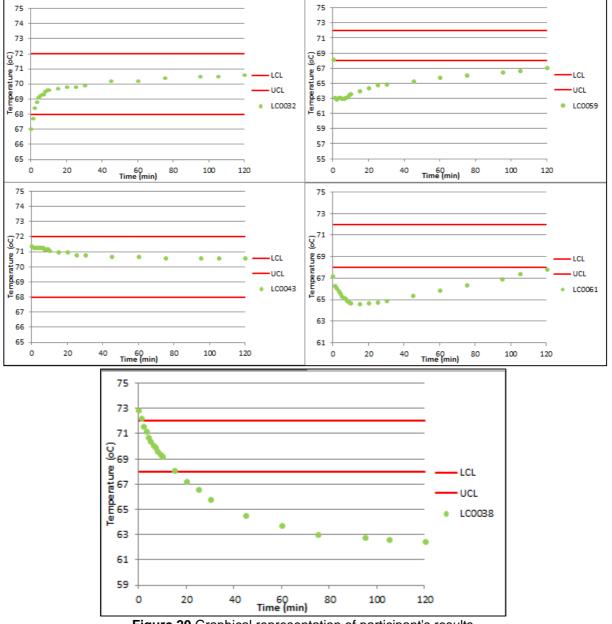


Figure 20 Graphical representation of participant's results

12.3. Achieved points

Table 2 Total of achieved points

Lab code	total of achieved points (max. 21 points)	total achieved points [%]	Lab code	total of achieved points (max. 21 points)	total achieved points [%]	Lab code	total of achieved points (max. 21 points)	total achieved points [%]
LC0040	21	100	LC0031	10	48	LC0032	20	95
LC0018	7	33	LC0016	0	0	LC0059	1	5
LC0007a	6	29	LC0011	21	100	LC0014	14	67
LC0007b	5	24	LC0050	0	0	LC0046	21	100
LC0055	15	71	LC0005	21	100	LC0114a	1	5
LC0017	21	100	LC0049	8	38	LC0114b	1	5
LC0047	0	0	LC0034	3	14	LC0114c	6	29
LC0028	21	100	LC0043	21	100	LC0114d	21	100
LC0056	21	100	LC0006	21	100	LC0114e	6	29
LC0037a	16	76	LC0010	17	81	LC0114f	21	100
LC0037b	3	14	LC0044	21	100	LC0061	1	5
LC0037c	0	0	LC0008	10	48	LC0024	21	100
LC0013	18	86	LC0021	21	100	LC0002	6	33
LC0025	21	100	LC0038	12	57	LC0121	0	0
LC0003	0	0	LC0026	21	100	LC0122	1	5
LC0041	0	0	LC0064	10	48	LC0120	0	0
LC0113	16	76	LC0054	6	29	LC0123	9	43
LC0020	2	10	LC0062	19	90			

Europe Direct is a service to help you find answers to your questions about the European Union Freephone number (*): 00 800 6 7 8 9 10 11 (*) Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server *http://europa.eu*.

How to obtain EU publications

Our publications are available from EU Bookshop (*http://bookshop.europa.eu*), where you can place an order with the sales agent of your choice.

The Publications Office has a worldwide network of sales agents. You can obtain their contact details by sending a fax to (352) 29 29-42758.

European Commission EUR 27826 EN – Joint Research Centre – Institute for Health and Consumer Protection

Title: Report of an inter-laboratory comparison from the European Union Reference Laboratory for Food Contact Materials: ILCO1 2015 - Temperature control during migration tests by article filling

Author(s): Emmanouil Tsochatzis, Anja Mieth, Catherine Simoneau and Eddo Hoekstra

Luxembourg: Publications Office of the European Union

2016 – 40 pp. – 21.0 x 29.7 cm

EUR – Scientific and Technical Research series – ISSN 1831-9424 (online) ISBN 978-92-79-57669-0 (PDF) doi:10.2788/536852

JRC Mission

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new methods, tools and standards, and sharing its know-how with the Member States, the scientific community and international partners.

Serving society Stimulating innovation Supporting legislation

doi:10.2788/536852

ISBN 978-92-79-57669-0

