



המעבדה לאריזה  
PACKAGING LABORATORY

CARGAL Flexible Packaging Ltd.  
Industrial area Mishmar Hasharon  
**Kibbutz Mishmar Hasharon 40270**  
Att: Mr. Baruch Barkat

Fax: 0732402401

1/7/2012

Sir,

Re: **Migration tests according to EU Regulation, EU Directives and Israeli standard 5113 from a laminate intended for food products and manufactured by "CARGAL Flexible Packaging" OUR CODE CARGAL85E**

**Description of samples:** A DSR printed plastic laminate made from PET/PE (PET 12 $\mu$ +PE 60 $\mu$ ), manufactured by "CARGAL Flexible Packaging" and intended for food products including freezing products. The samples were selected and delivered to the Packaging Laboratory by the client.

**Purpose of tests:** Migration from the laminate to test its suitability to come in contact with food products.

**Methods of tests:** The overall migration tests were done according to EEC Directives as follows:

1. Regulation (EC) 10/2011: Commission Regulation (EU) 10/2011 "on plastic materials and articles intended to come into contact with food".
2. Framework Regulation (EC) No. 1935/2004: Regulation of the European Parliament and of the Council 27 October 2004 on Materials and Articles intended to come into contact With foods.
3. Directive 2002/72/EC and amendments 2004/1/EC and 2004/19/EC and 2005/79/EC.
4. DD ENV 1186: Materials and articles in contact with foodstuffs – Plastics, parts 1-16.
5. Israeli standard 5113: Plastic materials and plastic articles in contact with food and beverages.

Migration from the laminate was done by preparing pouches, filling with 10% ethyl alcohol and holding for 10 days at 40<sup>0</sup>C. Afterwards the stimulant was evaporated and residual extract (total migration) was determined. Ratio of volume to surface in the test was 100 ml/dm<sup>2</sup>.

Migration into a fat simulant was done by preparing pouches, filling with 95% ethyl alcohol and holding for 10 days at 40<sup>0</sup>C. Afterwards the stimulant was evaporated and residual extract (total migration) was determined. Ratio of volume to surface in the test was 100 ml/dm<sup>2</sup>.

**Results:** The overall migration is expressed as milligrams of material extracted from one square decimeter of the tested articles or into 1 kg of simulant, and is presented in the following table. The results reported are an average of 3 replicates .

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**OVERALL MIGRATION FROM THE LAMINATE**

Product	10% ethyl alcohol mg/dm <sup>2</sup>	95% ethyl alcohol mg/dm <sup>2</sup>
Laminate PET/PE	<1	2.3

In the EC Directives and Regulation relating to Plastic Materials and Articles intended to come in Contact with Foodstuffs, it is stated that: Plastic materials and articles shall not transfer their constituents to foodstuffs in quantities exceeding **10 mg per decimeter square** of surface area of material or article, or **60 mg per kilogram of simulant**.

Based on above tests, migration from the tested laminate was within the allowed limits of the Directives, the Regulation and Israeli Standard 5113 for aqueous and fatty food products, **including frozen products and meat products.**

According to the Regulation: "Testing for 10 days at 40<sup>0</sup>C shall **cover all storage times at refrigerated and frozen conditions** including storage at room temperature and heating up to 70<sup>0</sup>C for up to 2 hours, or heating up to 100<sup>0</sup>C for up to 15 minutes".

Results refer to the samples tested only.

Sincerely Yours

*Joseph Miltz N. Passy*  
Prof. Joseph Miltz      Nehama Passy  
Head of laboratory      Package Engineer

