ISRAEL PLASTICS & RUBBER CENTER

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Report No.: R/3061-Metals Date: 11/05/2020

Food Contact Plastic

Test Report

For Trace Metals & Heavy metals

Conformity with: Regulation (EU) No. 10/2011 (Annex I & II), Directive 94/62 EEC, requirements of CONEG - Model Toxics in packaging legislation and Israeli Standard 5113

IPRC Job No.	R/3061
Client:	**VIVA SRL**
Contact person:	MR MALTINTI
Client's Address:	Via Caciagli 11 Zona Ind. terrafino Empoli 50053 italy
Item tested:	stretch film
Item designation:	All foodstuff types
Use:	Room temperature filled and stored at room temperature or refrigerated or frozen storage conditions
Arrival in Lab:	26-Apr-2020
Testing Period:	27-Apr-2020- 11-May-2020

Test Conducted:

1. Trace metal by specific migration: Al, Ba, Co, Cu, Fe, Li, Mn, Ni, Zn.
2. Amount of heavy metals: Pb, Hg, Cr, Cd.

Conclusion:

Test Conducted	Result
Specific Migration – Trace Metals- **stretch film**	**PASS**
Specific Migration – Amount of Heavy Metals - - **stretch film**	**PASS**

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Test Specifications:

Test Method:
1. Trace metals: sample preparation is performed according to EN 13130, Part 1.
2. Heavy Metals: sample preparation is performed according to EN 13130, Part 1.

Determination: The determination of amount of Mercury that was released is done via Atomic absorption spectroscopy (AAS) with reference to method EPA 30B. The determination of amount of metals that were released is done via inductively coupled plasma optical emission spectrophotometry (ICP-OES) with reference to ISO 11885:2007.

Limits according:
1. Trace metals - Regulation (EU) No. 10/2011 (Annex II).
2. Heavy Metals - Directive 94/62 EC & U.S TPCH

Test Duration / Temp.: For trace metals and amount of heavy metals:
3% Acetic acid (v/v) for 10 days at 60 °C, single use

MDL: Mercury: 15 mg/l (method detection limit
All other metals: 0.01 mg/l (method detection limit)

Results:

1. Trace Metals:

	Al	Ba	Co	Cu	Fe	Li	Mn	Ni	Zn
SML [mg/Kg]	1	1	0.05	5	48	0.6	0.6	0.02	5
SAPIR - stretch film	0.39	0.02	ND	<0.01	0.06	<0.01	ND	ND	0.08

2. Heavy Metals:

	Cd	Cr	Hg	Pb
Limit [ppm]	Sum of Cd, Cr, Hg and Pb < 100 ppm			
SAPIR - stretch film	ND	ND	<3.90	<0.01

Note: Total amount of Cr is determined, including Hexavalent Cr.

Abbreviations: ppm = parts per million; mg/Kg = milligram per kilogram food; mg/l = milligram per liter; ND = Not Detected;
SML [mg/kg]: the specific migration limit applicable for the substance. It is expressed in mg substance per kg food or food simulant.

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Conclusions:

1. **For Trace Metals**: The submitted samples, comply with the requirements of Regulation (EU) No. 10/2011 (Annex II) and its amendments and Parliament and Council Directive 94/62/EC on Packaging and Packaging Waste Directive and Israeli Standard 5113.
2. **For Heavy Metals**: The sum concentration levels of lead, mercury, cadmium and hexavalent chromium added together do not exceed more than 100 parts per million by weight. The submitted sample complies with the requirements for heavy metals content requirements of the Coalition of Northeastern Governors ("CONEG") model Toxics in packaging legislation as enacted by various states and the heavy metals content requirements of the European Parliament and Council Directive 94/62/EC on Packaging and Packaging Waste.

The submitted samples are shown in the following figures No. 1-2:

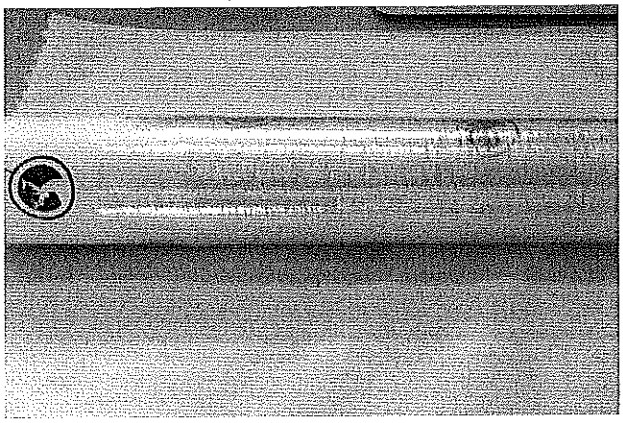

Fig. No. 1: SAPIR - stretch film, R/3061 sample.

Approved By:

Naum Naveh
Head of Haifa Branch

Israel Plastics and Rubber Center Tested by IPRC

Noga Steiner Gelman
Polymer Eng. – Chemical Eng.

*****End of Report*****

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Food Contact Plastic

Test Report

Conformity with:

Overall migration limit according to: Regulation (EU) No. 10/2011 as amended and the Israeli Standard 5113.

IPRC Job No.	R/3061
Client:	**VIVA SRL**
Contact person:	MR MALTINTI
Client's Address:	VIA CACIAGLI 11 ZONA IND. TERRAFINO EMPOLI 50053
Item tested:	stretch film
Item designation:	All foodstuff types
Use:	Room temperature filled and stored at room temperature or refrigerated or frozen storage conditions
Arrival in Lab:	26-Apr-2020
Testing Period:	27-Apr-2020- 03-May-2020

Summary of test results:

Test Conducted	Result
Overall Migration Test – **SAPIR - stretch film**	**PASS**

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Overall Migration test:

Test Requested:

Overall migration of extractives from packaging, using solvents that are simulating types of foodstuffs for compliance with EU Regulation (EU) No. 10/2011 and its amendments: "Plastics materials and articles intended to come into contact with food", and overall migration according to Israeli standard 5113.

Applied Test Method:

Test Method	Principle
EN 1186 - 3	Test methods for overall migration into aqueous food simulants by total immersion
EN 1186 - 14	Exposure into iso-octane and 95 % aqueous ethanol

Standardized Testing Conditions:

Test Number	Contact time in days [d] or hours [h] at Contact temperature in [°C]	Intended food contact conditions
OM5	2 h at 100 °C or at reflux or alternatively 1 h at 121 °C	High temperature applications up to 121 °C.

Test Results:

Item	Simulant	Test method	Test conditions	Overall Migration Results (mg/dm^2)		Max. Per. Limit (mg/dm^2)
				Single results	Average	
stretch film	A	EN 1186 - 3	2 hr at 100 °C	0.90; 1.10; 1.00	1.00	10
	B	EN 1186 - 3	2 hr at 100 °C	1.30; 1.20; 1.30	1.27	10
	D2(*)	EN 1186 - 14	3.5 hr at 60 °C	1.40; 1.10; 1.30	1.27	10

Note: Simulant A: Ethanol 10% (v/v) Simulant B: Acetic Acid 3% (w/v)
Simulant D2: Fatty simulant
mg/dm^2: milligram per square decimeter
ND = Not Detected; d=day; hr=hour; °C: degree Celsius

(*) Due to technical challenges in the conditioning procedure of the samples; a change in mass between two consecutive weighing, of less than 5 mg/dm², could not be achieved. Therefore, alternative test method for the assessment was employed, as described in EN 1186-14: "Exposure into Iso-octane and 95 % ethanol". That is, the higher migration result is presented in the report as required in Commission Regulation 2016/1416 "Amending and correcting (EU) No 10/2011 on plastic materials and articles intended to come into contact with food". Therefore, in this case the highest results were received from migration in 95% Ethanol.

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Conclusions:

The submitted samples comply with the overall migration requirements of Regulation (EU) 10/2011 as amended; according to section 4 of Annex III and Chapter 3 of Annex V of the Regulation, for OML test conditions OM5 testing the combination of simulants A, B and D2 allows to conclude on compliance for all types of foods. It covers High temperature applications up to 121 °C and less sever conditions including any long term storage at room temperature or below (refrigerated and frozen conditions) .

The submitted sample is shown in the following figure No. 1:

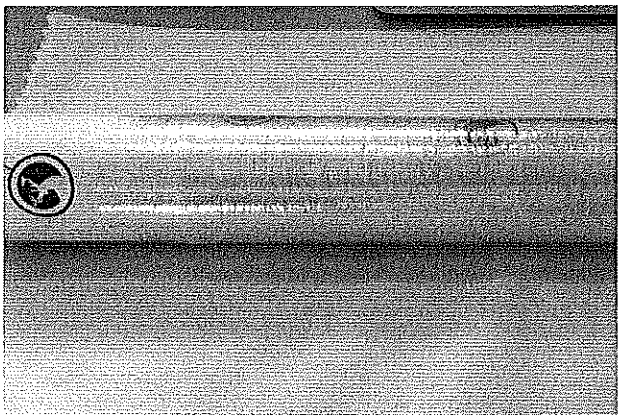

Fig. No. 1: stretch film, R/3061 sample.

Note: This report replaces report No. R/3061

Approved By:

Naum Naveh
Head of Haifa Branch

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Polymer Eng. – Chemical Eng.

End of Report