



To

TUBI GOMMA TORINO S.p.A.

Date, November 07th, 2016

RP n° **573-B-(eng)/2016**

Ref. Your Confirm N°861 dated 01.08.2016 | 15040 MIRABELLO MONFERRATO (AL)

Strada Statale 31, Km 39,4 n. 42

Received 12.09.2016 Start tests 19.09.2016 End tests 07.11.2016 Page 1 of 2

T E S T R E P O R T

Subject: SUITABILITY TO BE USED IN CONTACT WITH FOODS, ACCORDING TO REGULATION 1935/2004/CE and DM 21.03.73 AND SUBSEQUENT AMENDMENTS, ON A SAMPLE OF RUBBER COMPOUND SUPPLIED AS VULCANIZED RUBBER SHEETS 2 mm thick

RUBBER COMPOUND

EPDM 60 BA FDA BfR"

Test Methods

Requirements
DM 21/03/73
DM 26/04/93
N. 220

TEST CONDITIONS

Simulators of foods

A	B	C	---		
Distilled Water	Acetic Acid 3% (w/v) in water solution	Ethanol 10% (v/v) in water solution	Ethanol 50% (v/v) in water solution	DM 22/07/98 N.338 Annex Chap. I

Time and Temperature of contact

4 hours at 100°C	4 hours at 100°C	4 hours at 100°C	4 hours at 100°C	DM 22/07/98 N.338 Annex Chap. II
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TESTS

Total migration

ppm	11,1	23,7	13,4	23,8	DM 26/04/93 N. 220 Ann. III Sec. 1/B	≤ 50 (analytical tolerance +12)
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Thiurams migration

ppm	Not Detectable	Not Detectable	Not Detectable	Not Detectable	DM 1/03/73 Ann.IV Sec. 3.1	≤ 1
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T E S T R E P O R T

RUBBER COMPOUND

**EPDM 60 BA FDA
BfR"**

**Test
Methods**

**Requirements
DM 21/03/73
DM 26/04/93 N.
220**

Simulators of foods

D
Rectified olive oil

DM 22/07/98
n.338
Annex Chap. I

Time and Temperature of contact

2 hours at 175°C

DM 22/07/98
n.338
Annex Chap. II

Total migration

ppm

48,4

DM 26.04.93
n.220
Annex III
Section 1/C

≤ 50

REMARK:

On the basis of the test results and on the basis of the recipe provided by the Customer, **we certifies** that the examined rubber compound marked **EPDM 60 BA FDA BfR"** **is in compliance:**

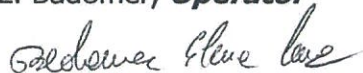
- for the contact with all **aqueous, acid, alcoholic foods with alcohol content lower than 50%, dairy products**, according to the **Requirements of DM 21.03.73 and Subsequent Amendments** in all conditions of time and temperature **when** in the space of **4 hours, 1 dm² of rubber compound comes into contact with at least 1 kg of food.**
- for the contact with **fatty foods**, according to the **Requirements of DM 21.03.73 and Subsequent Amendments** in all conditions of time and temperature **when** in the space of **2 hours, 1 dm² of rubber compound comes into contact with at least 6 kg of food.**

The sampling has been carried out by the Customer.

The contained results refer only to the tested sample.

This report cannot be partially reproduced without the laboratory approval.

E. Badomer, **Operator**



F. Negroni, **Director**






To

TUBI GOMMA TORINO S.p.A.

Date, November 07th, 2016

Strada Statale 31, Km 39,4 n. 42

TR n° **573-A-(eng)/2016**

Ref. Your Confirm N°861 dated 01.08.2016 15040 MIRABELLO MONFERRATO (AL)

Received 12.09.2016

Start tests 19.09.2016

End tests 07.11.2016

Page 1 of 1

T E S T R E P O R T

Subject: SUITABILITY TO BE USE IN CONTACT WITH FOODS, ACCORDING TO FDA, OF A RUBBER COMPOUND, MARKED "EPDM 60 BA FDA BfR", SUPPLIED AS VULCANIZED SHEETS 2 mm thick

RUBBER COMPOUND
(Sheets 2 mm thick)

EPDM 60 BA FDA BfR

Test methods

Requirements

AQUEOUS FOODS

FDA-Title 21
Parts 170 to 199
Item 177.2600
(e)

Distilled water at reflux temperature

Total extractable matter during the first 7 hours of extraction	mg/in ²	1,2	max 20
Total extractable matter during the succeeding 2 hours of extraction	mg/in ²	0,2	max 1

FATTY FOODS

FDA-Title 21
Parts 170 to 199
Item 177.2600
(f)

n-Hexane at reflux temperature

Total extractable matter during the first 7 hours of extraction	mg/in ²	13,9	max 175
Total extractable matter during the succeeding 2 hours of extraction	mg/in ²	1,8	max 4

REMARK: On the basis of the test results and on the basis of the recipe provided by the Customer, **we certifies** that the rubber compound marked "**EPDM 60 BA FDA BfR**" **is in compliance** with the Requirements of the FDA - CFR 21 - Parts 170 to 199 - Item 177.2600 Paragraph (a), (b), (c), (d) of the use in contact with dry foods, (e) of the contact with aqueous foods and (f) of the contact with fatty foods.

The sampling has been carried out by the Customer.

The contained results refer only to the tested sample.

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E. Badomer
E. Badomer, Operator

F. Negroni
F. Negroni, Director





Date, June 26th, 2017
 TR n° **349-(eng)/2016**
 Ref. Your Confirm dated 19.05.16

To
 TUBI GOMMA TORINO S.p.A.
 Strada Statale 31 – km 39,4, n. 42
 15040 MIRABELLO MONFERRATO (AL)

Received 19.05.2016 Start tests 20.05.2016 End tests 14.06.2016 Page 1 of 2

S U P P L E M E N T T O T E S T R E P O R T

Subject: SUITABILITY TO BE USED IN CONTACT WITH FOODS, ACCORDING TO **BfR – XXI RECCOMANDATION – CATEGORY 2**, ON A SAMPLE OF RUBBER COMPOUND MARKED "**EPDM 60 BA FDA BFR**" SUPPLIED AS VULCANIZED RUBBER SHEETS 2 mm thick

		<u>On the rubber compound "EPDM 60 BA FDA BFR"</u>	<u>Requirements</u>
• Content of zinc	%	0,8	≤ 3
• Content of lead	%	< 0,001	≤ 0,003
• Content of aliphatic and cycloaliphatic amines	mg/dm ²	Not detectable (<0,02)	≤ 5
• p-phenylenediamine	mg/l	Not detectable (<0,01)	≤ 0,3
• Zinc dibenzyl dithiocarbamate	mg/kg elastomer	Not detectable (<0,1)	≤ 0,1

Compound: EPDM 60 BA FDA BFR Migrations after contact of the rubber sheets with the Simulators for 24 hours at 40°C (Category 2)

Simulator: Distilled water

• Total migration	mg/dm ²	6,0	≤ 20
• Primary arylamines	µg/l	Not detectable	≤ 20
• Secondary N-alkyl arylamines	mg/l	Not detectable	≤ 1
• Formaldehyde	µg/ml	Not detectable	≤ 3
• N-nitrosamines	µg/dm ²	< 0,01	≤ 1

Simulator: Acetic acid 3% (m/v) in water

• Total migration	mg/dm ²	39,6	≤ 100
• Primary arylamines	µg/l	2,0	≤ 20
• Secondary N-alkyl arylamines	mg/l	Not detectable	≤ 1
• N-nitrosamines	µg/dm ²	< 0,01	≤ 1

Date, June 26th, 2017

TR n° 349-(eng)/2016

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S U P P L E M E N T T O T E S T R E P O R T

Requirements**Compound: EPDM 60 BA FDA BFR****Migrations after contact of the rubber sheets with the Simulators for 24 hours at 40°C (Category 2)****Simulator: Ethanol 10% (v/v) in water**

• Total migration	mg/dm ²	7,3	≤ 20
• Primary arylamines	µg/l	3,0	≤ 20
• Secondary N-alkyl arylamines	mg/l	Not detectable	≤ 1
• N-nitrosamines	µg/dm ²	< 0,01	≤ 1

NOTE: The food simulators at the end of the contact are colourless, odourless and tasteless.**REMARK:** On the basis of the test results and on the basis of the recipe provided by the Customer, **we certifies** that the examined nitrilic rubber compound marked "**EPDM 60 BA FDA BFR**" **is in compliance** with the requirements of the **Recommendation XXI Category 2 of BfR** for the use in contact with foods, including milkThe sampling has been carried out by the Customer.
----The contained results refer only to the tested sample.

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E. Badomer, **Operator**F. Negroni, **Director**