



LABORATORIO PER LA CERTIFICAZIONE E RICERCA
SUI SISTEMI ELASTOMERICI

con il patrocinio del C.N.R.

Spett. Le

TUBI GOMMA TORINO S.p.A.

Data, 14 dicembre 2011

RP n° **612-E/2011**

Rif. Vs. Conferma del 14.09.2011

Strada Statale 31, Km 39,4 n.42

15040 MIRABELLO MONFERRATO (AL)

Camp. ricevuto il 05.10.2011 Data inizio prove: 12.10.2011 Data fine prove: 28.11.2011 Pag. 1 di 1

R A P P O R T O D I P R O V A

Oggetto: IDONEITA' AL CONTATTO CON ALIMENTI ACQUOSI, SECONDO FDA, DI UNA
MESCOLA IN GOMMA DENOMINATA "EPDM 60 BA FDA BFR" FORNITA SOTTO
FORMA DI PLACCHETTE VULCANIZZATE A SPESSORE 2 mm

MESCOLANZA

EPDM 60 BA FDA BFR

Metodi di prova

Valori limite

ALIMENTI ACQUOSI

FDA-CFR 21

Parts 170 to 199

Item 177.2600

(e)

Simulante acqua distillata alla
temperatura di riflusso

- | | | | |
|-------------------------------------|--------------------|------|--------|
| • Estratto dopo le prime 7 ore | mg/in ² | 1,44 | max 20 |
| • Estratto dopo le successive 2 ore | mg/in ² | 0,52 | max 1 |

Commento: Sulla base della composizione dichiarata dal Committente e dei risultati delle prove di migrazione, si attesta che la mescolanza in gomma vulcanizzata denominata "**EPDM 60 BA FDA BFR**" è idonea ai requisiti della FDA - CFR 21 - Parts 170 to 199 - Item 177.2600 (e) per il contatto con gli alimenti acquosi.

Il campionamento è stato eseguito a cura del Committente.

I risultati ottenuti si riferiscono esclusivamente al campione provato.

Il presente rapporto di prova non può essere riprodotto parzialmente salvo approvazione del Laboratorio.

L'OPERATORE

E. Badomer

IL DIRETTORE



F. Negroni



To

TUBI GOMMA TORINO S.p.A.

Strada Statale 31, km 39,4 – n.42

Date, 23rd June, 2010
TR n° **263-B_{bis}/2010**
Ref. Your Acceptance dated 05.05.2010

15040 MIRABELLO MONFERRATO (AL)

Received 06.05.2010 Start test: 17.05.2010 End test: 22.06.2010 Page 1 of 2

T E S T R E P O R T

Subject: MIGRATION TESTS IN THE SIMULATORS OF FOODS ON A SAMPLING OF VULCANIZED SHEETS IN RUBBER COMPOUND MARKED "EDPM 70 BA/BfR" (EPDM), ACCORDING TO BfR – XXI RECCOMANDATION – CATEGORY 2

		<u>On the rubber compound</u> <u>"EPDM 70 BA/BfR"</u>	Requirements
• Content of zinc	%	1,98	≤ 3
• Content of lead	%	0,0006	≤ 0,003
• Content of aliphatic and cycloaliphatic amines	mg/dm ²	Not detectable (<0,02)	≤ 5

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	1,87	≤ 20
• Primary arylamines	µg/l	10	≤ 20
• Secondary N-alkyl arylamines	mg/l	Not detectable (<0,02)	≤ 1
• Formaldehyde	µg/ml	Not detectable (<1)	≤ 3
• N-nitrosamines	µg/dm ²	< 0,002	≤ 1

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

• Total migration	mg/dm ²	42,83	≤ 100
• Organic part	mg/dm ²	8,12	
• Primary arylamines	µg/l	15	≤ 20
• Secondary N-alkyl arylamines	mg/l	Not detectable (<0,02)	≤ 1
• N-nitrosamines	µg/dm ²	< 0,002	≤ 1



Date, 23rd June, 2010

TR n° 263-B_{bis}/2010

Page 2 of 2

T E S T R E P O R T

Requirements

**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	2,05	≤ 20
• Primary arylamines	µg/l	5	≤ 20
• Secondary N-alkyl arylamines	mg/l	No detectable (<0,02)	≤ 1
• N-nitrosamines	µg/dm ²	< 0,002	≤ 1

NOTE: The food simulators at the end of the contact are colourless, odourless and tasteless.

REMARK: The test results obtained from the migration tests carried out on the sheets of rubber compound marked "**EPDM 70 BA/BfR**" **are compliant** with the requirements of the Recommendation XXI **Category 2** of BfR for the use in contact with foods.

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**



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To

TUBI GOMMA TORINO S.p.A.

Strada Statale 31, Km 39,4 n.42

Date, December 14th, 2011

TR n° **612-C_{bis}/2011**

Ref. Your conf. dated 14.09.2011

15040 MIRABELLO MONFERRATO (AL)

Received 05.10.2011

Start tests 12.10.2011

End tests 28.11.2011

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 **DM 21.03.73 and Subsequent Amendments** AND TO **RULE 1935/2004/CE and Subsequent Amendments**, ON A RUBBER COMPOUND MARKED "**EPDM 60 BA FDA BFR**" SUPPLIED AS VULCANIZED RUBBER SHEETS 2 mm thick

RUBBER COMPOUND
(Rubber Sheets 200x200x2 mm)

EPDM 60 BA FDA BFR

Test method

Requirements
DM 21/03/73
DM 26/04/93 N. 220
DM 24/09/96
N.572

Free monomer acrylonitrile content	ppm	Not revealable (< 0,02)	DM 18.06.79	≤ 0,02
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TESTS CONDITIONS

Simulators of food

A	B	C		
Distilled water	Acetic acid 3% (p/v) in water solution	Ethanol 10% (v/v) in water solution	DM 22/07/98 N.338 Annex Chap. I DM 24/09/96 N.572

Time and temperature of contact	4 h at 100°C	4 h at 100°C	4 h at 100°C	DM 22/07/98 N.338 Annex Chap. II
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TESTS

Total migration (∅ 13 mm)	mg/kg	9,02	27,73	6,30	DM 26/04/93 N. 220 All. III Sec. 1/B	≤ 50
Specific Migration of thiuram	mg/kg	0,014	< 0,002	0,032	DM 21/03/73 Ann.IV Sec. 3.1	≤ 1,2



Date, December 14th, 2011

RP n° **612-C_{bis}/2011**



Page 2 of 2

T E S T R E P O R T

REMARK:

On the basis of the test results and on the basis of the recipe provided by the Customer, **we certify** that the rubber compound marked **"EPDM 60 BA FDA BFR"** **is suitable** to be used in contact with **all aqueous, acid and alcoholic (with 10% maximum content of ethanol) foods** in according to the **DM 21.03.73 and Subsequent Amendments**, and to the **RULE 1935/2004/CE and Subsequent Amendments**, in all time and temperature conditions **when:**

- a linear meter of hose, with internal diameter ranging between 13 mm and 102 mm and with the examined rubber compound as lining, come into contact **at least 1 kg** of foodstuffs in **2 hours**.

The 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**