



## Test Report

Sample Serial No. : 201201411001 ~ 201201411005

<b>Applicant</b>	FAGA TYRES (PVT) LTD.
<b>Address</b>	#02, UDUGALLA ESTATE, PARAGASTHOTA, BANDARAGAMA, SRI LANKA.
<b>Sample name</b>	Industrial solid resilient tyre
<b>Type/ model</b>	FAGA MASTER BRAND
<b>Description</b>	Black solid
<b>Test Period</b>	Nov. 23, 2012 ~ Dec. 6, 2012
<b>Test Requirement</b>	According to the ISO21461:2012 in annex XVII of Regulation (EC) No. 1907/2006 (REACH), the polyaromaticity should be analyzed by Nuclear Magnetic Resonance (NMR).
<b>Test Method(s)</b>	ISO21461:2012
<b>Test Result(s)</b>	Please refer to next page(s)

Complied by Zhang Meiting

Inspected by Qu hua juan

Approved by Walt Lin  
Walt Lin/ General Manager

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Zhejiang, P.R. China



### Part 1: Tread Compound Layer + Sidewall Layer

The test result(s) are as following:

Item	1	2	3
Recovery value	49.2	48.3	48.8

Item	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>
Average value	22.9	21.4	1.00	427

Item	MCV	MDL	Results
Percentage of Bay protons	0.35%	0.01%	0.22%
Comment	-	-	Pass

Remark(s):

1. MCV= Maximum Concentration Values.
2. MDL= Method Detection Limits; N.D.= Not detected (<MDL).
3. Tyres and treads for retreading do not exceed the limit of 0.35% Bay protons as measured by ISO21461 can be considered as complied with the REACH Annex XVII requirement for eight (8) Polycyclic aromatic hydrocarbons (PAH) including Benzo[a]pyrene (BaP); Benzo[e]pyrene (BeP); Benzo[a]anthracene (BaA); Chrysene (CHR); Benzo(b)fluoranthene (BbFA); Benzo(j)fluoranthene (BjFA); Benzo(k)fluoranthene (BkFA) and Dibenzo(a, h)anthracene (DBAhA).
4. I<sub>0</sub>=The aromatic area, from 6.0ppm to 9.5ppm, including the CHCl<sub>3</sub> signal(residue contained in CDCl<sub>3</sub>)
5. I<sub>1</sub>=The pure aromatic area (I<sub>0</sub>-I<sub>CHCl<sub>3</sub></sub>)
6. I<sub>2</sub>= The area of the bay region from 8.3ppm to 9.5ppm
7. I<sub>3</sub>=The area of the aliphatic and ethylenic regions from 0.2ppm to 5.8ppm

Photo(s):



201201411001

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## Part 2: Center Compound Layer

The test result(s) are as following:

Item	1	2	3
Recovery value	34.2	30.2	32.2

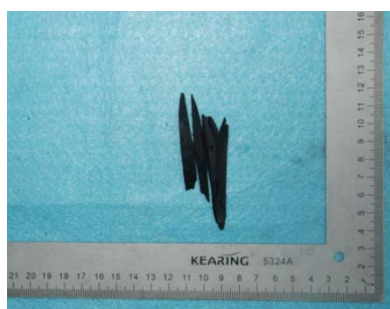
Item	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>
Average value	25.7	23.7	1.00	401

Item	MCV	MDL	Results
Percentage of Bay protons	0.35%	0.01%	0.24%
Comment	-	-	Pass

Remark(s):

1. MCV= Maximum Concentration Values.
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4. I<sub>0</sub>=The aromatic area, from 6.0ppm to 9.5ppm, including the CHCl<sub>3</sub> signal(residue contained in CDCl<sub>3</sub>)
5. I<sub>1</sub>=The pure aromatic area (I<sub>0</sub>-I<sub>CHCl<sub>3</sub></sub>)
6. I<sub>2</sub>= The area of the bay region from 8.3ppm to 9.5ppm
7. I<sub>3</sub>=The area of the aliphatic and ethylenic regions from 0.2ppm to 5.8ppm

Photo(s):



201201411002

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### Part 3: Base Compound Layer

The test result(s) are as following:

Item	1	2	3
Recovery value	63.9	64.6	64.2

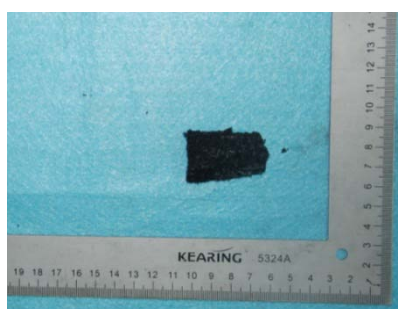
Item	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>
Average value	28.5	26.2	1.00	711

Item	MCV	MDL	Results
Percentage of Bay protons	0.35%	0.01%	0.14%
Comment	-	-	Pass

Remark(s):

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4. I<sub>0</sub>=The aromatic area, from 6.0ppm to 9.5ppm, including the CHCl<sub>3</sub> signal(residue contained in CDCl<sub>3</sub>)
5. I<sub>1</sub>=The pure aromatic area (I<sub>0</sub>-I<sub>CHCl<sub>3</sub></sub>)
6. I<sub>2</sub>= The area of the bay region from 8.3ppm to 9.5ppm
7. I<sub>3</sub>=The area of the aliphatic and ethylenic regions from 0.2ppm to 5.8ppm

Photo(s):



201201411003

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**Part 4: Bead Wires + Bead Rings Compound bondings**

The test result(s) are as following:

Item	1	2	3
Recovery value	46.3	44.5	45.4

Item	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>
Average value	29.0	27.4	1.00	490

Item	MCV	MDL	Results
Percentage of Bay protons	0.35%	0.01%	0.20%
Comment	-	-	Pass

Remark(s):

1. MCV= Maximum Concentration Values.
2. MDL= Method Detection Limits; N.D.= Not detected (<MDL).
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4. I<sub>0</sub>=The aromatic area, from 6.0ppm to 9.5ppm, including the CHCl<sub>3</sub> signal(residue contained in CDCl<sub>3</sub>)
5. I<sub>1</sub>=The pure aromatic area (I<sub>0</sub>-I<sub>CHCl<sub>3</sub></sub>)
6. I<sub>2</sub>= The area of the bay region from 8.3ppm to 9.5ppm
7. I<sub>3</sub>=The area of the aliphatic and ethylenic regions from 0.2ppm to 5.8ppm

Photo(s):



201201411004



## Part 5: Clip Base

The test result(s) are as following:

Item	1	2	3
Recovery value	42.0	42.2	42.1

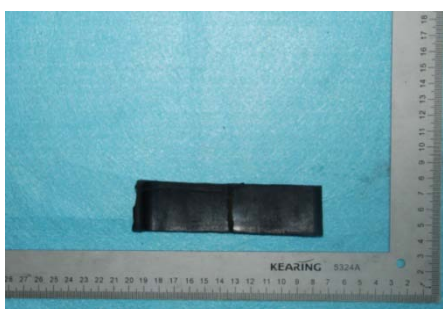
Item	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>
Average value	20.8	19.1	1.00	356

Item	MCV	MDL	Results
Percentage of Bay protons	0.35%	0.01%	0.26%
Comment	-	-	Pass

Remark(s):

1. MCV= Maximum Concentration Values.
2. MDL= Method Detection Limits; N.D.= Not detected (<MDL).
3. Tyres and treads for retreading do not exceed the limit of 0.35% Bay protons as measured by ISO21461 can be considered as complied with the REACH Annex XVII requirement for eight (8) Polycyclic aromatic hydrocarbons (PAH) including Benzo[a]pyrene (BaP); Benzo[e]pyrene (BeP); Benzo[a]anthracene (BaA); Chrysene (CHR); Benzo(b)fluoranthene (BbFA); Benzo(j)fluoranthene (BjFA); Benzo(k)fluoranthene (BkFA) and Dibenzo(a, h)anthracene (DBA<sub>h</sub>A).
4. I<sub>0</sub>=The aromatic area, from 6.0ppm to 9.5ppm, including the CHCl<sub>3</sub> signal(residue contained in CDCl<sub>3</sub>)
5. I<sub>1</sub>=The pure aromatic area (I<sub>0</sub>-I<sub>CHCl<sub>3</sub></sub>)
6. I<sub>2</sub>= The area of the bay region from 8.3ppm to 9.5ppm
7. I<sub>3</sub>=The area of the aliphatic and ethylenic regions from 0.2ppm to 5.8ppm

Photo(s):



201201411005

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Overview

\*\*\*The end of report\*\*\*

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