

Test Report No. GGN/H(FCM)/16/000038
Dated 2016.01.29



South Asia



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Laboratory:
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Off Saki Vihar Road
Saki Naka, Andheri (East),
Mumbai – 400072. India

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Company Name : Zenith Industrial Rubber Products Pvt. Ltd.
Address : Plot No. C-15, C-16, C-17, Dombivli Industrial Estate, Phase-I, Dombivli (East), Dist. Thane – 421203
Contact Person : Mr. Keshavlal Koiri
Tested Sample : Received on 2016.01.11 at 3:09 p.m.
Test Period : 2016.01.13 to 2016.01.29
Sample Description : SBR Food Grade Rubber Sheet, SB 60150 F, Off White
Colour : Off White
Objectives of Examination : 1. Sensory Verification (Transfer of Taste and Odour/Smell)
2. Overall migration
3. Specific migration of primary aromatic amines
4. Specific migration of phthalates
5. Specific migration of N-Nitrosamines & N-Nitrosatable substances
6. Specific migration of butadiene

Note: The submitted sample(s) is/are Not Drawn by the Laboratory

Remarks:

1. Sample(s) is/are tested as on-received basis.
2. Test(s) performed as requested by Applicant.
3. Conclusion of test "Sensory Verification" was drawn as per contemporary & accepted industrial practice.
4. Selections of simulants & test conditions were done taking into account the worst foreseeable conditions of use of the finished product.
5. Test "Specific migration of butadiene" was sub-contracted to TÜV SÜD China, Shanghai.

Prepared By

Sourav Bhattacharya
Report Reviewer

Authorized By

Anuradha Dhamija
Authorized Signatory

Please Contact:

For any technical issues: Anuradha Dhamija at Anuradha.Dhamija@tuv-sud.in

For any complaint: Krishna Deori at Krishna.Deori@tuv-sud.in

By accepting this document the customer hereby agrees and accepts the 'Terms & Conditions' and the relevant 'Testing & Certification Regulations' of TÜV SÜD South Asia Pvt. Ltd. which are available at Company's website at the link- <http://www.tuv-sud.in/in-en/resource-centre/terms-and-conditions>

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Material List/List of Materials (As confirmed by Applicant)

Component No.	Component Description	Material	Colour
A	SBR Food Grade Rubber Sheet	SBR Rubber	Off-white

Sampling Plan (As requested by Applicant)

S. No.	Test	Component No.
1.	Sensory Verification (Transfer of Taste and Odour/Smell)	A
2.	Overall migration	A
3.	Specific migration of primary aromatic amines	A
4.	Specific migration of phthalates	A
5.	Migration of N-Nitrosamines & N-Nitrosatable substances	A
6.	Specific migration of butadiene	A

Summary of Test Result(s)

S. No.	Test	Conclusion (Pass/Fail)
1.	Sensory Verification (Transfer of Taste and Odour/Smell)	Pass
2.	Overall migration	Pass
3.	Specific migration of primary aromatic amines	Pass
4.	Specific migration of phthalates	Pass
5.	Migration of N-Nitrosamines & N-Nitrosatable substances	Pass
6.	Specific migration of butadiene	Pass

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Test Results:-

(Test No. 1-i) Sensory verification of Odour/Smell				
Test Specification(s)/Regulation(s): Regulation (EC) No. 1935/2004 & Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuffs; Test method adopted: DIN 10955:2004; Simulant(s) used: Distilled water; Test condition(s): 100 °C or reflux for 4 hours.				
Component No.	Test Parameter	Result (Grade)	Compliance Requirement/Limit Max.	Conclusion (Pass/Fail) (Refer Remark 3 on Page No. 2)
A	Rating	0	Less than 2.5	Pass
Note: (Intermediate grades are allowed) 0 = no perceptible difference in odour; 1 = just perceptible difference in odour (still difficult to define); 2 = slight difference in odour; 3 = marked difference in odour; 4 = strong difference in odour.				

(Test No. 1-ii) Sensory verification of Taste				
Test Specification(s)/Regulation(s): Regulation (EC) No. 1935/2004 & Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuffs; Test method adopted: DIN 10955:2004; Simulant(s) used: Distilled water; Test condition(s): 100 °C or reflux for 4 hours.				
Component No.	Test Parameter	Result (Grade)	Compliance Requirement/Limit Max.	Conclusion (Pass/Fail) (Refer Remark 3 on Page No. 2)
A	Rating	0	Less than 2.5	Pass
Note: (Intermediate grades are allowed) 0 = no perceptible difference in taste; 1 = just perceptible difference in taste (still difficult to define); 2 = slight difference in taste; 3 = marked difference in taste; 4 = strong difference in taste.				

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(Test No. 2) Overall migration

Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuffs;

Test method(s) adopted: With reference to EN 1186-3:2002 (for 3 % acetic acid) & EN 1186-14:2002 (for 95 % ethanol and iso-octane);

Simulants used: Refer below;

Test condition(s): Refer below (Note: Tests conducted under repeat-use conditions);

S.No.	Simulant used	Test condition(s)	Component No.	Result (mg/kg)	Compliance Requirement/Limit Max. (mg/kg)	Conclusion (Pass/Fail)
1.	3 % acetic acid	100 °C or reflux for 4 hours	A	ND	60	Pass
2.	95 % ethanol	60 °C for 6 hours	A	ND	60	Pass
3.	Iso-octane	60 °C for 4 hours	A	ND	60	Pass
Overall Conclusion (Pass/Fail)						Pass

Limit of Quantification: 12.0 mg/kg

Note: (1) "mg/kg" denotes milligram per kilogram; (2) "°C" denotes degree Celsius; (3) "%" denotes per cent; (4) "ND" denotes Not Detected.

(Test No. 3) Specific migration of primary aromatic amines

Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuffs;

Test method(s) adopted: With reference to EN 13130-1:2004 followed by analysis using UV – Visible Spectrophotometer;

Simulant(s) used: 3 % acetic acid;

Test condition(s): 100 °C or reflux for 4 hours (under repeat-use conditions);

Equipment(s) used: UV – Visible Spectrophotometer.

Component No.	Result (mg/kg)	Limit of Quantification (mg/kg)	Compliance Requirement/Limit Max.	Conclusion (Pass/Fail)
A	ND	0.01	Sum of primary aromatic amines shall be less than 0.01 mg/kg	Pass

Note: (1) "mg/kg" denotes milligram per kilogram; (2) "°C" denotes degree Celsius; (3) "%" denotes per cent; (4) "ND" denotes Not Detected; (5) "UV" denotes Ultra – Violet.

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(Test No. 4-i) Specific migration of phthalates
 Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuff;
 Test method(s) adopted: With reference to EN 13130-1:2004 followed by analysis using GC – MS;
 Simulant(s) used: 95 % ethanol;
 Test condition(s): 60 °C for 6 hours (under repeat-use conditions);
 Equipment(s) used: GC – MS (Gas Chromatography – Mass Spectrometer).

S. No.	Parameter	CAS No.	Result (mg/kg) – Component No. A	Limit of Quantification (mg/kg)	Compliance Requirement/ Limit Max.	Conclusion (Pass/Fail)
1.	Benzylbutyl phthalate (BBP)	85-68-7	ND	0.3	Not to exceed 6 mg/kg	Pass
2.	Diethylhexyl phthalate (DEHP)	117-81-7	ND	0.3	Not to exceed 3 mg/kg	Pass
3.	Dibutyl phthalate (DBP)	84-74-2	ND	0.3	Not to exceed 3 mg/kg	Pass
4.	Dicyclohexyl phthalate (DCHP)	84-61-7	ND	0.3	Not to exceed 6 mg/kg	Pass
5.	Diethyl phthalate (DEP)	84-66-2	ND	0.3	Not to exceed 12 mg/kg	Pass
Overall Conclusion (Pass/Fail)						Pass

Note: (1) “mg/kg” denotes milligram per kilogram; (2) “ND” denotes Not Detected; (3) “°C” denotes degree Celsius; (4) “%” denotes per cent.

(Test No. 4-ii) Specific migration of phthalates
 Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuff;
 Test method(s) adopted: With reference to EN 13130-1:2004 followed by analysis using GC – MS;
 Simulant(s) used: Iso-octane;
 Test Condition(s): 60°C for 4 hours (under repeat-use conditions);
 Equipment(s) used: GC – MS (Gas Chromatography – Mass Spectrometer).

S. No.	Parameter	CAS No.	Result (mg/kg) – Component No. A	Limit of Quantification (mg/kg)	Compliance Requirement/ Limit Max.	Conclusion (Pass/Fail)
1.	Benzylbutyl phthalate (BBP)	85-68-7	ND	0.3	Not to exceed 6 mg/kg	Pass
2.	Diethylhexyl phthalate (DEHP)	117-81-7	ND	0.3	Not to exceed 3 mg/kg	Pass
3.	Dibutyl phthalate (DBP)	84-74-2	ND	0.3	Not to exceed 3 mg/kg	Pass
4.	Dicyclohexyl phthalate (DCHP)	84-61-7	ND	0.3	Not to exceed 6 mg/kg	Pass
5.	Diethyl phthalate (DEP)	84-66-2	ND	0.3	Not to exceed 12 mg/kg	Pass
Overall Conclusion (Pass/Fail)						Pass

Note: (1) “mg/kg” denotes milligram per kilogram; (2) “ND” denotes Not Detected; (3) “°C” denotes degree Celsius; (4) “%” denotes per cent.

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(Test No. 5) Migration of N-Nitrosamines & N-Nitrosatable substances

Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuff;
 Test method adopted: Based on BS EN 12868:1999;
 Equipment(s) used: Gas Chromatography – Mass Spectrometer (GC – MS).

Test parameter	Component No.	Test Result (mg/kg)	Limit of Quantification (mg/kg)	Compliance Requirement/Limit Max.	Conclusion (Pass/Fail)
Migration of N-Nitrosamines	A	ND	0.01	Shall be less than 0.01 mg/kg	Pass
Migration of N-Nitrosatable substances	A	ND	0.1	Shall be less than 0.1 mg/kg	Pass

Note: (1) "ND" denotes Not Detected; (2) "mg/kg" denotes milligram per kilogram.

(Test No. 6) Specific migration of butadiene (1,3-butadiene) (CAS No. 106-99-0)

Test Specification(s)/Regulation(s): Council of Europe Resolution ResAP (2004) 4 on rubber products intended to come into contact with foodstuff;
 Test method(s) adopted: With reference to EN 13130-1:2004 followed by analysis as per DD CEN/TS 13130-15:2005;
 Simulants used: 3 % acetic acid;
 Test condition(s): 100 °C or reflux for 4 hours (under repeat-use conditions);
 Equipment(s) used: Gas Chromatography – Mass Spectrometer (GC – MS);

Component No.	Result (mg/kg)	Method detection limit	Compliance Requirement/Limit Max.	Conclusion (Pass/Fail)
A	ND	0.02 mg/kg	Shall be less than 0.02 mg/kg	Pass
Overall Conclusion (Pass/Fail)				Pass

Note: (1) "mg/kg" denotes milligram per kilogram; (2) "°C" denotes degree Celsius; (3) "%" denotes per cent; (4) "ND" denotes Not Detected.

---- END OF THE TEST REPORT ----

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