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检测  
TESTING  
CNAS L9939

## TEST REPORT

**Report No.:** FCM2350483 (EN)  
**Sample Name:** FITT Pure Tek  
**Applicant:** FITT S.p.A  
**Manufacturer:** FITT S.p.A

南京海关危险货物与包装检测中心

**NANJING CUSTOMS DISTRICT TESTING CENTER  
FOR DANGEROUS GOODS AND PACKAGING**

国家食品接触材料检测重点实验室

**STATE KEY TESTING LABORATORY OF FOOD CONTACT MATERIALS**





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Date:2023/02/23

Report No.:FCM2350483 (EN)

## Test Report

*Information of Applicant (provided by the client):*

Applicant: FITT S.p.A  
Address: Via Piave, 8-36066 Sandrigo, VI-Italy

*Sample Information (provided by the client):*

Sample Name: FITT Pure Tek  
Manufacturer: FITT S.p.A  
Material: TPEs (contact layer) - PET (yarn reinforcement) - TPEs (cover layer)  
Description: TPEs Hose with Polyester yarn reinforcement  
Quantity: 20m  
Batch No.: /

*Test Information:*

Sample No.: FCM2350483  
Date Received: 2023/02/07  
Test Period: 2023/02/07~2023/02/16  
Test Requirement: In accordance with the client's requirements  
Test Items: Please refer to next page(s).  
Conclusion: Please refer to next page(s).

Signature:

Issue Date:2023/02/23





Information of Use (provided by the client)

Contact Food	Use Condition	Use S/V	Cleaning Requirement
Acidic, non-acidic, alcoholic food, dairy products [Note: Alcoholic food ≤95% (v/v)]	Maximum usage temperature: 90°C. Maximum usage time: 24h, repeated use	0.006dm <sup>2</sup> /L	/

Summary of Test Items and Results

Test Item	Resource of Restriction and Requirement	Conclusion
Sensory requirements	GB 4806.7-2016	Pass
Regular physicochemical indexes	GB 4806.7-2016	Pass
Residual content of 2- methyl -1,3-butadiene	GB 4806.7-2016	Pass
Residual content of 1,3-butadiene	GB 4806.7-2016	Pass
Residual content of styrene	GB 4806.7-2016	Pass
Migration of antimony (as Sb)	GB 4806.7-2016	Pass
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer	GB 9685-2016	Pass
Migration of 1,2- ethylene glycol (as ethylene glycol)	GB 4806.7-2016	Pass
Migration of isophthalic acid (as isophthalic acid)	GB 4806.7-2016	Pass
Migration of 1,4-terephthalic acid (as terephthalic acid)	GB 4806.7-2016	Pass

Remark: (1)LOD/LOQ =Limit of Detection/Limit of Quantification.  
 (2)N.D.=not detected (less than LOD/LOQ).  
 (3)#test item was not in the scope of CNAS.

Test Information: (1)As for repeated use articles:  
 1st time: The migration tests were carried out only one time.  
 3rd time: The migration tests were carried out three times, only based to the result of the third test.  
 (2)Resource of food simulant: GB 4806.7-2016, GB 31604.1-2015. Resource of test condition: GB 4806.7-2016, GB 31604.1-2015.  
 (3)Correction S/V:0.006dm<sup>2</sup> /L.



**Test Result****1. Sensory requirements**

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Sensory	Comply	The product shall have normal color. Abnormal odor and unclean thing is not permitted.	Pass	GB 4806.7-2016
The food simulant	Comply	Sensory deterioration of the food simulant obtained from the migration test such as turbidity, precipitate and abnormal odor is not permitted.	Pass	GB 4806.7-2016

**2. Regular physicochemical indexes****2.1. Overall migration**

2.1.1. Test condition: 4%(v/v) acetic acid, 100°C, 2h, 3rd time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Overall migration, mg/dm <sup>2</sup>	<1.0	≤10	Pass	GB 31604.8-2021

2.1.2. Test condition: 20%(v/v) ethanol, reflux temperature, 2h, 3rd time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Overall migration, mg/dm <sup>2</sup>	<1.0	≤10	Pass	GB 31604.8-2021

2.1.3. Test condition: 50%(v/v) ethanol, reflux temperature, 2h, 3rd time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Overall migration, mg/dm <sup>2</sup>	<1.0	≤10	Pass	GB 31604.8-2021

2.1.4. Test condition: 95%(v/v) ethanol, reflux temperature, 2h, 3rd time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Overall migration, mg/dm <sup>2</sup>	<1.0	≤10	Pass	GB 31604.8-2021

**2.2. Consumption of potassium permanganate**

2.2.1. Test condition: water, 60°C, 2h, 1st time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Consumption of potassium permanganate, mg/kg	<0.20	≤10	Pass	GB 31604.2-2016



**2.3. Heavy metal (as Pb)**

2.3.1. Test condition: 4%(v/v) acetic acid, 60°C, 2h, 1st time

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Heavy metal (as Pb), mg/kg	<1	≤1	Pass	GB 31604.9-2016 1st method

**2.4. Decolor test**

Test Item	Test Result	Restriction and Requirement	Assessment	Test Method
Scrubbed by ethanol	Negative	Negative	Pass	GB 31604.7-2016
Scrubbed by vegetable oil	Negative	Negative	Pass	GB 31604.7-2016
The food simulant	Negative	Negative	Pass	GB 31604.7-2016

**3. Residual content**

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Residual content of 2- methyl -1,3-butadiene#, mg/kg	N.D.	0.5	≤1	Pass	Proper amount of the sample was weighed, then analyzed by HS-GC-MS
Residual content of 1,3-butadiene, mg/kg	N.D.	0.2	≤1	Pass	GB 31604.12-2016
Residual content of styrene, %	<0.00500	50mg/kg	≤0.5	Pass	GB 31604.16-2016

**4. Specific migration**

4.1. Test condition: 4%(v/v) acetic acid, 100°C, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer, mg/kg	<6.0	/	≤30	Pass	GB 31604.8-2021

Note: (1)The migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer was screened by overall migration.





4.2. Test condition: 10%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method, GCB-3-F-147
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer, mg/kg	<6.0	/	≤30	Pass	GB 31604.8-2021

Note: (1)The migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer was screened by overall migration.

4.3. Test condition: 20%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method, GCB-3-F-147
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer, mg/kg	<6.0	/	≤30	Pass	GB 31604.8-2021

Note: (1)The migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer was screened by overall migration.

4.4. Test condition: 50%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method, GCB-3-F-147
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer, mg/kg	<6.0	/	≤30	Pass	GB 31604.8-2021

Note: (1)The migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer was screened by overall migration.







4.5. Test condition: 95%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method, GCB-3-F-147
Migration of 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer, mg/kg	<6.0	/	≤30	Pass	GB 31604.8-2021

Note: (1)The migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl piperidine- succinic acid, dimethyl ester, copolymer was screened by overall migration.

## 5. Total specific migration

5.1. Test condition: 4%(v/v) acetic acid, 100°C, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of 1,2- ethylene glycol (as ethylene glycol), mg/kg	<3.00	3mg/L	≤30	Pass	GB 31604.44-2016
Migration of isophthalic acid (as isophthalic acid), mg/kg	<0.10	0.1mg/L	≤5	Pass	GCB-3-F-104
Migration of 1,4-terephthalic acid (as terephthalic acid), mg/kg	<0.30	0.3mg/L	≤7.5	Pass	GB 31604.21-2016

5.2. Test condition: 10%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of 1,2- ethylene glycol (as ethylene glycol), mg/kg	<3.00	3mg/L	≤30	Pass	GB 31604.44-2016
Migration of isophthalic acid (as isophthalic acid), mg/kg	<0.10	0.1mg/L	≤5	Pass	GCB-3-F-104
Migration of 1,4-terephthalic acid (as terephthalic acid), mg/kg	<0.30	0.3mg/L	≤7.5	Pass	GB 31604.21-2016

5.3. Test condition: 20%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of 1,2- ethylene glycol (as ethylene glycol), mg/kg	<3.00	3mg/L	≤30	Pass	GB 31604.44-2016



Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of isophthalic acid (as isophthalic acid), mg/kg	<0.10	0.1mg/L	≤5	Pass	GCB-3-F-104
Migration of 1,4-terephthalic acid (as terephthalic acid), mg/kg	<0.30	0.3mg/L	≤7.5	Pass	GB 31604.21-2016

5.4. Test condition: 50%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of 1,2- ethylene glycol (as ethylene glycol), mg/kg	<3.00	3mg/L	≤30	Pass	GB 31604.44-2016
Migration of isophthalic acid (as isophthalic acid), mg/kg	<0.10	0.1mg/L	≤5	Pass	GCB-3-F-104
Migration of 1,4-terephthalic acid (as terephthalic acid), mg/kg	<0.30	0.3mg/L	≤7.5	Pass	GB 31604.21-2016

5.5. Test condition: 95%(v/v) ethanol, reflux temperature, 24h, 3rd time

Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of 1,2- ethylene glycol (as ethylene glycol), mg/kg	<3.00	3mg/L	≤30	Pass	GB 31604.44-2016
Migration of isophthalic acid (as isophthalic acid), mg/kg	<0.10	0.1mg/L	≤5	Pass	GCB-3-F-104
Migration of 1,4-terephthalic acid (as terephthalic acid), mg/kg	<0.30	0.3mg/L	≤7.5	Pass	GB 31604.21-2016

The picture of submitted sample



\*\*\* END \*\*\*







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