





# 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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# **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):

FITT Pure Tek Sample Name:

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 .:

 ${\it Test\ Information:}$ 

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





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#### **Information of Use (provided by the client)**

Contact Food	Use Condition	Use S/V	Cleaning Requirement
Acidic, non-acidic, alcoholic	Maximum usage temperature:		
food, dairy products [Note:	90°C. Maximum usage time:	0.006dm <del>7</del> L	1
Alcoholic food ≤95% (v/v)]	24h, repeated use		

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#### **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.

 $(2) Resource\ of\ food\ simulant:\ GB\ 4806.7-2016,\ GB\ 31604.1-2015.\ Resource\ of\ test\ condition:\ GB\ and\ condition:\ conditio$ 

4806.7-2016, GB 31604.1-2015.

(3)Correction S/V:0.006dm<sup>2</sup>/L.



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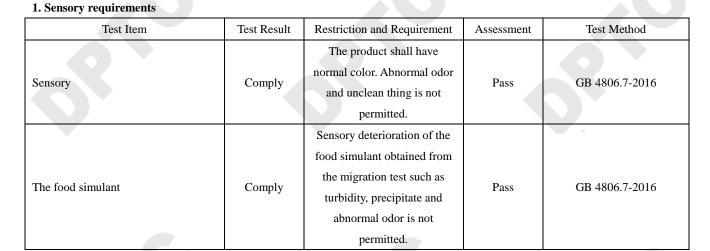
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#### 2. Regular physicochemical indexes

#### 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	< 0.20	≤10	Pass	GB 31604.2-2016
permanganate, mg/kg				

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#### 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	<b>~1</b>		Daga	GB 31604.9-2016 1st
neavy metal (as F0), mg/kg		≥1	Pass	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.

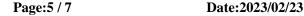
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4.2. Test condition: 10%(v/v) ethanol, reflux temperature, 24h, 3rd time

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

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

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

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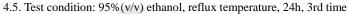
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Test Item	Test Result	LOD/LOQ	Restriction and Requirement	Assessment	Test Method
Migration of antimony (as Sb), mg/kg	<0.03	0.03mg/L	≤0.04	Pass	GB 31604.49-2016 2nd part 2nd method, GCB-3-F-147
Migration of 1-(2-hydroxyethyl)-4-hydroxy- 2,2,6,6-tetramethyl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

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

#### 5. Total specific migration

5.1. Test condition: 4%(v/v) acetic acid,  $100\,^{\circ}\text{C}$ , 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

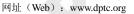
#### 5.3. Test condition: 20%(v/v) ethanol, reflux temperature, 24h, 3rd time

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

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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

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#### 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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# 声明

#### Statement

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- 1. The information of applicant and sample information as listed on the first page of this test report were all provided by the client. The client shall be responsible for the representativeness of sample and authenticity of materials, for which our center shall bear no responsibilities.
- 2. 本检测报告的测试结果仅对所测样品负责。报告不对社会具有证明作用,只用于内部科研、教学、质控等。本中心原则上不对检测结果进行判定,客户有特殊要求的除外,对此所产生的直接或间接影响,本中心不承担任何经济和法律责任。
- 2. The test data of this test report is only responsible for the tested sample. The report is only used for internal research, teaching, quality control of the samples and not to prove to the society. In principle, the report issued by our center will not judge the test results, unless the customer has special requirements, our center will not bear any economic and legal responsibilities for the direct or indirect impact.
- 3. 样品生产、储存、抽取和传递过程中的风险由客户承担,本中心不承担上述活动引发的测试结果不正确风险。
- 3. The client shall assume the risks in production, storage, drawing and transferring of sample, and our center shall not assume the risk of incorrect inspection result incurred by these activities
- 4. 本检测报告以实测值进行符合性判定,未考虑不确定度所带来的风险,特别约定、标准或规范中有明确规定的除外。此种判定方式所带来的风险由客户自行承担,本中 心不承担相关责任。
- 4. The judgment method of determining the conformity in this test report is according to the measured value without considering the risk caused by uncertainty, unless otherwise clearly stipulated in special agreement, standard or specification. The client shall assume the risk caused by this judgment method, and our center shall not bear related responsibilities.
- 5. 委托方对本检测报告的测试结果如有异议,请于报告签发日期起十五个工作日内向本中心书面提出复测申请。不能进行复测的项目,不进行复测,委托方放弃异议权利。
- 5. If there is any dissent to the test data by the client, please submit the written application for reexamination to the center within fifteen working days from the issue date of the report.

  To the test items which cannot be retested, the client may have to give up the dissent right.
- 6. 委托方需要退还样品的,必须在办理委托检验时书面告知本中心,并在收到检测报告三十天内取回剩余检测样品,另有约定的除外。委托方未书面告知退还样品的,本中心有权在出具检测报告三个月后接照中心样品处置规定对剩余检测样品进行处理。样品品质不宜保留的,本中心可以在出具检测报告后立即进行处理。
- 6. The client to return the sample shall notify our center in writing in dealing with entrusting of inspection, and shall retrieve the remaining inspection sample within 30 days after receiving the test report, unless otherwise agreed upon. If the client fails to notify us of returning the sample in writing, our center is entitled to dispose of the remaining inspection sample as per our center's sample disposition stipulations three months after issuing the inspection report. If the sample's quality does not allow reserving, our center may immediately dispose of it after issuing the inspection report.
- 7. 本中心保证检测的客观公正性,对委托方的商业信息、技术文件等商业秘密履行保密义务。
- 7. Our center guarantees the objectivity and fairness of test, and carries out confidentiality obligations on business secrets such as business information, technical documents and so on.
- 8. 本检测报告如未加盖本机构检验检测专用章或数据涂改的均无效。
- 8. The test report without our center inspection & test special use stamp or data to be altered is invalid.
- 9. 本检测报告含封面和封底,未经本机构书面允许,不得以任何方式复制。经同意复制的检测报告应全文复制并经本机构加盖检验检测专用章确认后方有效。
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