



## TEST REPORT

Job No./Report No TR613747 R1

Date:18 July 2014

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### KÖKSAN PET VE PLASTİK AMBALAJ TIC AŞ

4 ORG SAN BÖLG 83422 NOLU CAD NO 10 PK27600 ŞEHİTKAMİL GAZİANTEP

TEL: 05339357648

FAX: 03423570343

**To the attention of Orkun Karaman**

The following sample(s) was (were) submitted and identified by/on behalf of the client as:

Sample No.	Sample Description
A	Koksan Pet Resin

Client's reference No. : TR 613747  
Buyer : Hardline  
Order No. : 140515S03  
Division : Others – Hardgoods  
Model/Style No. : Not Provided  
Product code : AQK-1008  
Article No. : Not Provided  
Age Grade : Not Provided  
Manufacturer : KÖKSAN AŞ  
Country of Origin : Not Provided  
Country of Destination : Not Provided  
Shipment Date : Not Provided  
Fiber Composition : Not Provided  
Fabric Weight : Not Provided  
End Use : Not Provided  
Sample Receiving Date : 2 June 2014  
Test Performing Period : 2 June 2014 ~ 16 June 2014  
**Submitted Care Label Instructions** : Not Provided

**Overall Conclusion** : **PASS**

Test Results : Please refer to the next page(s).

**Performed Test Summary:** Selected test(s) as requested by client against Client's performance standard.

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Test Parameters	Result
<b>Chemical tests</b>	<b>A1</b>
Testing on PET Resin	M

Remarks	:	M = Meets client's requirement
		F = Below client's requirement
		I = Inconclusive
		* = No specified requirement
Notes:	Conclusions on meet/fail are based on the test result from the actual sampling of the received sample(s).	
	Residual sample can be returned to client if requested.	

The test results relate to the tested items only.  
Test reports without SGS seal and authorised signatures are invalid.  
Reported results do not include uncertainties.

**IN THIS REVISED 1 REPORT, TEST METHODS DETAILS FOR EXTRACTABLE ALUMINIUM,ANTIMONY,BARIUM,COBALT,GERMANIUM,MANGANESE,TITANIUM AND ZINC WERE ADDED.**

**THIS REPORT SUPERSEDES OUR REPORT NO :613747 DATED 16.07.2014**

Issued in Istanbul  
Signed for and on behalf of  
SGS Supervise Gözetme Etüd Kontrol Servisleri A.Ş.

Eylem Yıldızlı  
Customer Services Supervisor

Fatih Çakır  
RSTS Manager



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Test/Parameter	Method	Specification	Result	Status
Identification A (UV-Vis)	EP (2.2.25)	The solution shows an absorption maximum at 240 nm.	Meets Specifications	Pass
Identification B (IR)	EP (2.2.24)	The spectrum of the material to be examined shows maxima in particular at 1725 cm <sup>-1</sup> , 1410 cm <sup>-1</sup> , 1265 cm <sup>-1</sup> , 1120 cm <sup>-1</sup> , 1100 cm <sup>-1</sup> , 1020 cm <sup>-1</sup> , 875 cm <sup>-1</sup> , 725 cm <sup>-1</sup> . The spectrum obtained, in addition, is identical to that of the material selected for the type sample.	Meets Specifications	Pass
Appearance of solution S1	EP (2.2.1)	Solution S1 is clear.	Meets Specifications	Pass
Appearance of solution S2	EP (2.2.1 & 2.2.2, II)	Solution S2 is clear and colourless.	Meets Specifications	Pass

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Test/Parameter	Method	Specification	Result	Status
Acidity or alkalinity	EP			Pass
Alkalinity		Not more than 0.5 mL of 0.01 M hydrochloric acid is required to reach the beginning of the colour change of the indicator from to orange.	0.102 mL	
Acidity		Not more than 0.5 mL of 0.01 M sodium hydroxide is required to change the colour of the indicator to blue.	0.130 mL	
Absorbance of solution S1	EP (2.2.25)	Maximum 0.20 between 220 nm and 340 nm	0.0044	Pass
Absorbance of solution S2	EP (2.2.25)	Maximum 0.05 between 400 nm and 800 nm	0.0062	Pass
Reducing substances	EP	The difference in volume used in the 2 titrations is not greater than 0.5 mL.	0.255 mL	Pass

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Test/Parameter	Method	Specification	Result	Status
Substances soluble in Dioxan	EP	Maximum 3 %	0.03 %	Pass
Extractable Aluminium	EP (2.2.57)	Maximum 1 ppm	0.0 ppm	Pass

For Evaluation of accuracy, the native content was subtracted

	Method precision:	accuracy:	recovery:
result 1:	1,0258 ppm	0,9979 ppm	99,8 %
result 2:	1,0831 ppm	1,0552 ppm	105,5 %
result 3:	1,0855ppm	1,0576 ppm	105,8 %
result 4:	1,0338ppm	1,0059 ppm	100,6 %
result 5:	1,0243ppm	0,9964 ppm	99,6 %
result 6:	1,0910ppm	1,0631 ppm	106,3 %
mean:	1,06 ppm		102,9 %
RSD:	3,06 %		3,06 %
LOD:	0,006ppm		
LOQ:	0,019ppm		

Extractable Antimony	EP (2.2.57)	Maximum 1 ppm	<0.027 ppm	Pass
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	Method precision:	recovery:
result 1:	1,0715 ppm	107,2 %
result 2:	1,0246 ppm	102,5 %
result 3:	1,0855 ppm	108,6 %
result 4:	1,0802 ppm	108,0 %
result 5:	1,0742 ppm	107,4 %
result 6:	1,0632 ppm	106,3 %
mean:	1,07 ppm	106,7 %
RSD:	2,05 %	2,05 %
LOD:	0,027 ppm	
LOQ:	0,083 ppm	

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Test/Parameter	Method	Specification	Result	Status
Extractable Barium	EP (2.2.57)	Maximum 1 ppm	<0.002 ppm	Pass

Method precision: recovery:  
result 1: 1,0011 ppm 100,1 %  
result 2: 1,0173 ppm 101,7 %  
result 3: 1,0301 ppm 103,0 %  
result 4: 1,0378 ppm 103,8 %  
Comment: result 5: 1,0184 ppm 101,8 %  
result 6: 1,0330 ppm 103,3 %  
mean: 1,02 ppm 102,3 %  
RSD: 1,31 % 1,31%  
LOD: 0,002 ppm  
LOQ: 0,005 ppm

Extractable Cobalt	EP (2.2.57)	Maximum 1 ppm	<0.003 ppm	Pass
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Method precision: recovery:  
result 1: 1,0182 ppm 101,8 %  
result 2: 1,0512 ppm 105,1 %  
result 3: 1,0494 ppm 104,9 %  
result 4: 1,0556 ppm 105,6 %  
Comment: result 5: 1,0266 ppm 102,7 %  
result 6: 1,0347 ppm 103,5 %  
mean: 1,04 ppm 103,9 %  
RSD: 1,45 % 1,45%  
LOD: 0,003 ppm  
LOQ: 0,008 ppm

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Test/Parameter	Method	Specification	Result	Status
Extractable Germanium	EP (2.2.57)	Maximum 1 ppm	<0.024 ppm	Pass

Method precision: recovery:  
result 1: 1,0290 ppm 102,9 %  
result 2: 1,0300 ppm 103,0 %  
result 3: 1,0313 ppm 103,1 %  
result 4: 1,0424 ppm 104,2 %  
Comment: result 5: 1,0513 ppm 105,1 %  
result 6: 1,0463 ppm 104,6 %  
mean: 1,04 ppm 103,8 %  
RSD: 0,92 % 0,92%  
LOD: 0,024 ppm  
LOQ: 0,074 ppm

Extractable Manganese	EP (2.2.57)	Maximum 1 ppm	<0.002 ppm	Pass
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Method precision: recovery:  
result 1: 1,0402 ppm 104,0 %  
result 2: 1,0801 ppm 108,0 %  
result 3: 1,0853 ppm 108,5 %  
result 4: 1,0545 ppm 105,5 %  
Comment: result 5: 1,0436 ppm 104,4 %  
result 6: 1,0614 ppm 106,1 %  
mean: 1,06ppm 106,1 %  
RSD: 1,75% 1,75%  
LOD: 0,002 ppm  
LOQ: 0,005 ppm

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Test/Parameter	Method	Specification	Result	Status
Extractable Titanium	EP (2.2.57)	Maximum 1 ppm	<0.002 ppm	Pass
<div>Method precision: recovery:</div> <div>result 1: 1,0438 ppm 104,4 %</div> <div>result 2: 1,1091 ppm 110,9 %</div> <div>result 3: 1,1189 ppm 111,9 %</div> <div>result 4: 1,0685 ppm 106,9 %</div> <div>Comment: result 5: 1,0416 ppm 104,2 %</div> <div>result 6: 1,0767 ppm 107,7 %</div> <div>mean: 1,08ppm 107,6 %</div> <div>RSD: 3,00 % 3,00 %</div> <div>LOD: 0,002 ppm</div> <div>LOQ: 0,006 ppm</div>				
Extractable Zinc	EP (2.2.57)	Maximum 1 ppm	<0.004 ppm	Pass
<div>Method precision: recovery:</div> <div>result 1: 1,0282 ppm 102,8 %</div> <div>result 2: 1,0676 ppm 106,8 %</div> <div>result 3: 1,0716 ppm 107,2 %</div> <div>result 4: 1,0771 ppm 107,7 %</div> <div>Comment: result 5: 1,0287 ppm 102,9 %</div> <div>result 6: 1,0495 ppm 105,0 %</div> <div>mean: 1,05 ppm 105,4 %</div> <div>RSD: 2,06 % 2,06 %</div> <div>LOD: 0,001 ppm</div> <div>LOQ: 0,004 ppm</div>				
Sulfated ash	EP (2.4.14)	Maximum 0.5 %	0.0 %	Pass

**\*\*These tests have been performed at SGS Germany as subcontracted.**

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End of Test Report

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