



REPORT

CUSTOMER PO NO.:
ALS THAILAND REF NO.: ATT/ELP/14/4210-D
DATE: 16 March 2015
COMPANY: SEI Interconnect Products (Thailand)Ltd.
700/128 Moo 5 Bangna-Trad Road, T. Klong Tam Roo
A. Muang, Chonburi 20000

DATE SAMPLE RECEIVED: 06 March 2015
DATE ANALYZED: 12 March 2015
DATE TEST COMPLETED: 12 March 2015

SAMPLE DESCRIPTION: One lot of sample was received with references:
Description: RQ15-0310 Tressels_XLS APFA ww# 37
After Crest# 11 cell# 7
MinAik/EngTek/LSI+Sumi/Rencol/NMB
PN: 2053-209124-F11
PR: 18kn00012717
Model: Tressels_XLS APFA
Surface Area: APFA = 83.50 cm² , AFA =74.50 cm²

METHOD/PROCEDURE:

Test	Procedure No	Number of pieces used for extraction	Extraction Medium	Extraction Volume
DHS	2092-001026 Rev. AC	1	Purified Nitrogen	180mins x 65sccm

Results:

The specification is based on Western Digital's document no.96-004575 Rev.AX for APFA Single Platter / (CP/ECD) (3.5" Enterprise & 3.5" Desktop)

Required Test	Analytes	Specification Limits(ng/part)	Results (ng/part)	PASS / FAIL
DHS	Total Acrylate and Methacrylate	NA	103.22	NA
	Total Acrylate	NA	Not Detected	
	Total Methacrylate	NA	103.22	
	- 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester	-	27.80	
	- 2-Propenoic acid, 2-methyl-, 2-hydroxypropyl ester	-	53.12	
	- 2-Propenoic acid, 2-methyl-, methyl ester	-	22.31	
	Total Siloxane	< 30	13.77	PASS
	- Cyclotetrasiloxane, octamethyl-	-	13.77	



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Required Test	Analytes	Specification Limits(ng/part)	Results (ng/part)	PASS / FAIL
DHS	Total Silane	ND	Not Detected	
	Total Unknown	NA	68.67	
	Total Sulfur Compound	NA	Not Detected	
	Total Phthalate	NA	9.92	
	- 1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester	-	9.92	
	Total Phenol	NA	75.47	
	- Phenol	-	26.91	
	- Phenol, 3-methyl-	-	48.56	
	Total Alcohol	NA	594.33	
	- 1-Hexanol, 2-ethyl-	-	72.69	
	- 1-Decanol	-	33.94	
	- 1-Dodecanol	-	288.26	
	- 1,4-Butanediol	-	37.68	
	- Benzenemethanol, .alpha.,.alpha.-dimethyl-	-	161.76	
	Total Others	NA	580.82	
	- Pentanoic acid, 2,2,4-trimethyl-3-carboxyisopropyl, isobutyl ester	-	97.53	
	- Diphenylamine	-	124.77	
	Total Initiator	NA	1263.98	
	- Benzaldehyde	-	600.77	
	- Acetophenone	-	82.84	
	- Methanone, (1-hydroxycyclohexyl)phenyl-	-	580.37	
	Total Antioxidant	NA	265.69	
	- 6-tert-Butyl-2,4-dimethylphenol	-	16.54	
	- Phenol, 2,4-bis(1,1-dimethylethyl)-	-	123.17	
	- Butylated Hydroxytoluene	-	112.45	
	- Phenol, 2,6-bis(1,1-dimethylethyl)-4-ethyl-	-	13.53	
	Total Hydrocarbon	NA	3926.93	
	Total Aromatic Hydrocarbon	NA	312.99	
	- Toluene	-	268.63	
	- Benzene, (1-methylethyl)-	-	19.23	



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Required Test	Analytes	Specification Limits(ng/part)	Results (ng/part)	PASS / FAIL
DHS	- .alpha.-Methylstyrene	-	25.12	
	Total Aliphatic Hydrocarbon	NA	510.37	
	- Heptane	-	20.32	
	- Pentane, 2,3,4-trimethyl-	-	14.31	
	- Pentane, 2,3,3-trimethyl-	-	23.14	
	- Octane	-	48.63	
	- Decane	-	17.19	
	- Undecane, 5-methyl-	-	19.94	
	- Undecane, 3-methyl-	-	19.39	
	- 1-Dodecene	-	23.09	
	- Dodecane	-	92.39	
	- Tridecane	-	41.00	
	- Nonane, 3-methyl-5-propyl-	-	14.87	
	- Tridecane, 5-methyl-	-	16.98	
	- Tetradecane	-	65.94	
	- Pentadecane	-	30.01	
	- Hexadecane	-	34.83	
	- Octadecane	-	28.35	
	Hydrocarbon Hump	NA	3103.58	
	Total Outgassing	< 17000	6936	PASS

ALS Testing Services
(Thailand) Co.,Ltd.

Warunee Maneesuwan
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