Allegro MicroSystems, Inc.

Materials Declaration Report

4/30/2008
11:08:31AM

Report ID: MDR4118LW1672JFTR

Allegro Part #: A6841SLWTR-T

B.O.M. ID: 106

Package Code:	LW / LW	**Lead Count:**	18	**Assy Location:**	CARSEM M	**Plating:**	Tin
Oracle Item #:	6841TLW-7222TR	**CAS #:**	7222TR	**Cross Ref #:**	A6841SLWTR-T		
RoHS Compliant:	Yes	**RoHS Exemption:**	No				

Composition Details — **Pkg Weight:** 0.5088500 grams

Bonding Wire

4.2 Others

Goldwire "S" — **Au** — **0.0008000 g** (0.16%)

			% of matl	% of pkg	ppm *	CAS #
Beryllium	(Be)	0.000000 g	0.00001 %	0.00000 %	0	7440-41-7
Calcium	(Ca)	0.000000 g	0.00003 %	0.00000 %	0	7440-70-2
Gold	(Au)	0.000800 g	99.99000 %	0.15720 %	1,572	7440-57-5
Misc.		0.000000 g	0.00993 %	0.00002 %	0	system
Silver	(Ag)	0.000000 g	0.00003 %	0.00000 %	0	7440-22-4

Die

7.2 Ceramics / glass

Silicon Wafer "K" — **Si** — **0.0023400 g** (0.46%)

			% of matl	% of pkg	ppm *	CAS #
Aluminum	(Al)	0.000023 g	1.00000 %	0.00460 %	46	7429-90-5
Silicon	(Si)	0.002317 g	99.00000 %	0.45526 %	4,553	7440-21-3

Die Attach Adhesive

5.1.a Filled Thermoplastics

Conductive Adhesive "M" — **Ag** — **0.0004600 g** (0.09%)

			% of matl	% of pkg	ppm *	CAS #
Epoxy resin	(EP)	0.000069 g	15.00000 %	0.01356 %	136	129915-35-1
Misc.		0.000014 g	3.00000 %	0.00271 %	27	system
Silver	(Ag)	0.000377 g	82.00000 %	0.07413 %	741	7440-22-4

Encapsulation

5.4.3 Others

Epoxy Resin "AX" — **EP** — **0.3336500 g** (65.57%)

			% of matl	% of pkg	ppm *	CAS #
Antimony Trioxide	(Sb2O3)	0.005005 g	1.50000 %	0.98354 %	9,835	1309-64-4
Carbon black	(C)	0.001001 g	0.30000 %	0.19671 %	1,967	1333-86-4
Epoxy resin	(EP)	0.033365 g	10.00000 %	6.55694 %	65,569	129915-35-1
Formaldehyde, polymer with bromophenol and (ch		0.008341 g	2.50000 %	1.63924 %	16,392	68541-56-0
Phenol, Polymer with Formaldehyde		0.016683 g	5.00000 %	3.27847 %	32,785	9003-35-4
Silica, vitreous	(Si)	0.269256 g	80.70000 %	52.91452 %	529,145	60676-86-0

Lead Finish

4.2 Others

Plating "BB" — **Sn** — **0.0059900 g** (1.18%)

			% of matl	% of pkg	ppm *	CAS #
Misc.		0.000001 g	0.01000 %	0.00012 %	1	system
Tin	(Sn)	0.005989 g	99.99000 %	1.17705 %	11,770	7440-31-5

Lead Frame

3.2 Copper Alloys

Copper Alloy "C" — **Cu** — **0.1656100 g** (32.55%)

			% of matl	% of pkg	ppm *	CAS #
Copper	(Cu)	0.161291 g	97.39218 %	31.69720 %	316,972	7440-50-8
Iron	(Fe)	0.003892 g	2.35000 %	0.76483 %	7,648	7439-89-6
Lead	(Pb)	0.000001 g	0.00082 %	0.00027 %	3	7439-92-1
Phosphorus	(P)	0.000136 g	0.08200 %	0.02669 %	267	7723-14-0
Zinc (metal)	(Zn)	0.000290 g	0.17500 %	0.05696 %	570	7440-66-6

*ppm is rounded to the nearest whole number *

RoHS and other substances of concern

Pkg Weight: 0.5088500 grams

Bonding Wire

Goldwire "S" — **Au** **0.0008000 g** (0.16%) — **4.2 Others**

						w/avg
Cadmium	Cd	<	2.00 **ppm**	<	0.003 **ppm**	
Hexavalent Chromium	Cr+6	<	2.00 **ppm**	<	0.003 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	0.003 **ppm**	
Lead	Pb	<	2.00 **ppm**	<	0.003 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	0.008 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	0.008 **ppm**	

Die

Silicon Wafer "K" — **Si** **0.0023400 g** (0.46%) — **7.2 Ceramics / glass**

						w/avg
Cadmium	Cd	<	2.00 **ppm**	<	0.009 **ppm**	
Hexavalent Chromium	Cr+6	<	2.00 **ppm**	<	0.009 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	0.009 **ppm**	
Lead	Pb	<	2.00 **ppm**	<	0.009 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	0.023 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	0.023 **ppm**	

Die Attach Adhesive

Conductive Adhesive "M" — **Ag** **0.0004600 g** (0.09%) — **5.1.a Filled Thermoplastics**

						w/avg
Cadmium	Cd	<	2.00 **ppm**	<	0.002 **ppm**	
Hexavalent Chromium	Cr+6	<	2.00 **ppm**	<	0.002 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	0.002 **ppm**	
Lead	Pb	<	2.00 **ppm**	<	0.002 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	0.005 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	0.005 **ppm**	

Encapsulation

Epoxy Resin "AX" — **EP** **0.3336500 g** (65.57%) — **5.4.3 Others**

						w/avg
Brominated Flame Retardants	BFR	<	25,000.00 **ppm**	<	16,392.355 **ppm**	
Cadmium	Cd	<	2.00 **ppm**	<	1.311 **ppm**	
Hexavalent Chromium	Cr+6	<	2.00 **ppm**	<	1.311 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	1.311 **ppm**	
Lead	Pb	=	4.00 **ppm**	=	2.623 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	3.278 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	3.278 **ppm**	
Antimony Trioxide	Sb03	=	15,000.00 **ppm**	=	9,835.413 **ppm**	

Lead Finish

Plating "BB" — **Sn** **0.0059900 g** (1.18%) — **4.2 Others**

						w/avg
Cadmium	Cd	<	2.00 **ppm**	<	0.024 **ppm**	
Hexavalent Chromium	Cr+6	<	2.00 **ppm**	<	0.024 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	0.024 **ppm**	
Lead	Pb	=	10.00 **ppm**	=	0.118 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	0.059 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	0.059 **ppm**	

Lead Frame

Copper Alloy "C" — **Cu** **0.1656100 g** (32.55%) — **3.2 Copper Alloys**

						w/avg
Cadmium	Cd	<	1.00 **ppm**	<	0.325 **ppm**	
Hexavalent Chromium	Cr+6	<	1.00 **ppm**	<	0.325 **ppm**	
Mercury	Hg	<	2.00 **ppm**	<	0.651 **ppm**	
Nickel	Ni	=	0.00 **ppm**	=	0.000 **ppm**	
Lead	Pb	=	40.00 **ppm**	=	13.018 **ppm**	
Polybrominated Biphenyls	PBB	<	5.00 **ppm**	<	1.627 **ppm**	
Polybrominated Diphenyl Ethers	PBDE	<	5.00 **ppm**	<	1.627 **ppm**	

The less than (<) symbol is used to indicate that the test results are below the amounts indicated, which are the minimum detection limits of the laboratory performing the testing. The exception to this is for plating containing lead, where the maximum amount of lead is listed.
RoHS maximum limits (ppm): 1000 for Pb,Hg,Cr6+,PBB,PBDE (exemption: lead if solderballs are used.) 100 for Cd
Reportable substances: Antimony Trioxide, Brominated Flame Retardants, Nickel
Weighted average = for part as a whole.

RoHS and other substances of concern — Weighted Average Totals

Substance	Code		Weighted Average *	
Antimony Trioxide	Sb03	≤	9,835	**ppm**
Brominated Flame Retardants	BFR	≤	16,392	**ppm**
Cadmium	Cd	≤	2	**ppm**
Hexavalent Chromium	Cr+6	≤	2	**ppm**
Lead	Pb	≤	16	**ppm**
Mercury	Hg	≤	2	**ppm**
Nickel	Ni	≤	0	**ppm**
Polybrominated Biphenyls	PBB	≤	5	**ppm**
Polybrominated Diphenyl Ethers	PBDE	≤	5	**ppm**

***** Weighted Average totals represent the total of each substance of concern in the part, rather than per homogeneous material, which is specified in the RoHS EU Directive.

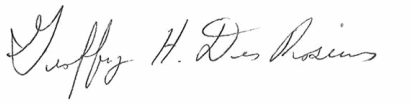
Dear Customer:

Please note that, as a supplier of components, we are not required to assess regulatory requirements that may apply to the finished product such as the European RoHS Directive (2003/95/EC), hereinafter referred to as "RoHS". Please note further that the product mentioned in the Material Declaration Report above may contain small amounts of lead. Therefore, we cannot make representations, warranties or indemnities regarding the complete absence of lead in the product.

You will note that, if there is sufficient volume and the product referenced in the Material Declaration Report above is not below RoHS allowable thresholds, we are prepared to discuss making a product listed by Allegro that is below RoHS allowable thresholds, if that is your wish.

Allegro MicroSystems, Inc. is a cooperative environmental supplier who fully supports the global environmental initiatives. We value our relationship and we are committed to furthering our cooperation.

Regards,



Geoffrey H. DesRosiers
Quality Systems Specialist