

Company
National Semiconductor



URL for Additional Information
http://www.national.com/quality/green/

Contact	Title	Phone	Email
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Part Number	MSL Rating	Peak Body Temp C	MaxTime (Sec)	Cycles
LM4863MX	2A	220	30	4

Document Date	This part number contains Lead(Pb) and is NOT RoHS Compliant.	Weight (mg)	Unit Type
3-Dec-2006		420.000	Each

Homogeneous Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	ppm
Plastic	305.050	SiO2	60676-86-0	211.278	692,600
		Epoxy Resin	25928-94-3	85.414	280,000
		Sb2O3	1309-64-4	6.101	20,000
		Brominated Epoxy	40039-93-8	2.257	7,400
Leadframe	101.910	Cu	7440-50-8	99.311	974,500
		Fe	7439-89-6	2.446	24,000
		Zn	7440-66-6	0.122	1,200
		P	7723-14-0	0.031	300
Ext. LeadFinish	6.350	Sn	7440-31-5	5.398	850,000
		Pb	7439-92-1	0.953	150,000
Chip	5.350	Si	7440-21-3	5.318	994,000
		Al	7429-90-5	0.032	6,000
		As (dopant)	7440-38-2	0.000	<1
		B (dopant)	7440-42-8	0.000	<1
		Ge (dopant)	7440-56-4	0.000	<1
		P (dopant)	7723-14-0	0.000	<1
		Sb (dopant)	7440-36-0	0.000	<1
Die Attach	0.570	Ag	7440-22-4	0.428	750,000
		Epoxy Resin	25928-94-3	0.143	250,000
Int. LeadFinish	0.470	Ag	7440-22-4	0.470	1,000,000
Wires	0.300	Au	7440-57-5	0.300	1,000,000

Note: The device content disclosed herewith is approximate and is based on engineering estimates only. It has not been verified through analytical testing. Additionally, the following should be noted:

- One or more dopant materials may be present in the silicon die to provide semiconductor properties. The amounts are very small and estimated as listed.
- Epoxy resin components listed are generic and may or may not be the specific compound used, which is considered proprietary.
- Brominated epoxy resins listed are generic and may or may not be the specific chemical used. The identity of the compound used is proprietary, however National certifies that these brominated compounds are not PBB or PBDE's, which are banned.
- The die attach, if present, does not contain any flame retardant.

Banned Substance Monitoring

Part Number	Document Date
LM4863MX	3-Dec-2006

This part number contains Lead(Pb) and is NOT RoHS Compliant.

Use	Material	Cd	CrVI	Pb	Hg	PBB	PBDE	Ref #
Device	CHIP	<10	<10	<10	<10	<10	<10	1000
	COMPOUND	<2	<10	<5	<1	<100	<100	569
	EPOXY	<2	<10	<5	<1	<100	<100	32
	EXTLF	<2	<10	154000	<1	N/A	N/A	56
	FRAME	< 2	< 2	< 2	< 2	N/A	N/A	51
	WIRE	<2	<2	<2	<2	N/A	N/A	75
Packing	BAG	<2	<10	<5	<1	N/A	N/A	550
	BOX	<2	<2	5	<2	N/A	N/A	539
	BUBBLE PACK	<2	<10	<5	<1	N/A	N/A	542
	DESICCANT	<5	<5	<10	<1	NA	NA	108
	INDICATOR	<5	<5	<10	<1	NA	NA	120
	LABEL	<5	<5	<10	<1	NA	NA	48
	REEL	<2	<2	<2	<2	N/A	N/A	525
	STRIP	ND	ND	ND	ND	NA	NA	540
TAPE	<2	<10	<5	<1	N/A	N/A	123	

* Cd: Cadmium, CrVI: Hexavalent Chromium, Pb: Lead, Hg: Mercury, ND: Not Detected

* Unless otherwise noted, units are in PPM (parts-per-million)

Ref #	3rd Party Analysis (available upon request, subject to a non-disclosure agreement)
1000	Analysis on 04/25/2005 by Balazs Analytical Services-Fremont CA per Report# 05-02036-00
32	Analysis on 04/18/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATJB/2026BS/2006
48	Analysis on 05/30/2005 by PSB-Singapore per Report# 57S051137-048A-PPG
51	Analysis on 03/30/2006 by SGS-Port Klang-Malaysia per Report# LPCI/05021/06
56	Analysis on 04/20/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATJB/2047BS/2006
75	Analysis on 04/21/2006 by SGS-Port Klang-Malaysia per Report# LPCI/06487/06
108	Analysis on 05/30/2005 by PSB-Singapore per Report# 57S051137-108-PPG
120	Analysis on 05/30/2005 by PSB-Singapore per Report# 57S051137-120-PPG
123	Analysis on 04/18/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATBJ/2042BS/2006
525	Analysis on 03/30/2006 by SGS-Port Klang-Malaysia per Report# LPCI/05045/06
539	Analysis on 03/30/2006 by SGS-Port Klang-Malaysia per Report# LPCI/05059/06
540	Analysis on 03/18/2005 by SGS-Malacca per Report# LPCI/1296/05
542	Analysis on 04/18/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATJB/2038BS/2006
550	Analysis on 04/18/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATJB/2032BS/2006
569	Analysis on 04/18/2006 by ALS TECHNICHEM-MALAYSIA per Report# ATJB/2009BS/2006

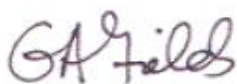
RoHS Material Composition Declaration

RoHS Directive 2002/95/EC	RoHS Definition: Quantity limit of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material for Cadmium
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Subject to the limitations below, National Semiconductor Corporation ("National") certifies the following information as of the document date.

1. National products with lead-free solder comply with the European Union's Directive on the Restriction of the Use of Hazardous Substances 2002/95/EC ("RoHS"). These products do not contain homogeneous materials with Joint Industry Guide (JIG) -101 Level A materials above Level A threshold levels, except lead in RoHS exempt applications 5, 7a and 7c.
2. National products with lead-containing solder do not comply with RoHS, because they contain lead in a non-exempt application. These products do not contain other RoHS restricted substances or homogeneous materials with JIG-101 Level A materials above Level A threshold levels, except lead in solder and RoHS exempt applications 5, 7a and 7c.
3. National products are manufactured in conformance with National specifications (SC) CSP-9-111C1 Supplier Environmental Requirements for Materials and Products and (SC) CSP-9-111S2 National's List of Banned and Reportable Substances, which are available at www.national.com/quality/green/.
4. National products do not contain and are not manufactured with ozone depleting substances subject to The Montreal Protocol on Substances that Deplete the Ozone Layer and U.S. Clean Air Act, Title VI.

National has taken commercially reasonable steps to provide representative and accurate information but may not have independently verified information provided by others or conducted testing or chemical analysis on incoming materials and chemicals. Information provided herein is derived from default values associated with internal monitoring process and may not be representative of all or actual materials used in the product (e.g. the default may indicate a particular material, while an equivalent compliant material from the same or alternate supplier was actually used). Certain National suppliers consider material content information to be confidential and thus CAS numbers for such materials may not be available for release. National's standard warranty and limitation of liability provisions of National's Standard Terms and Conditions of Sale apply to any issues arising out of or in connection with the statements or information provided herein.



Gerry Fields
Vice President Quality