

<b>Company</b>		<b>DUNS#</b>	<b>URL For Additional Information</b>
National Semiconductor		04-147-2986	<a href="http://www.national.com/analog/quality/green">http://www.national.com/analog/quality/green</a>

<b>Contact</b>	<b>Title</b>	<b>Phone</b>	<b>Email</b>
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<b>Part Number</b>	<b>MSL Rating</b>	<b>Peak Body Temp C</b>	<b>MaxTime(Sec)</b>	<b>Cycles</b>	<b>Unit Type</b>
LM49100GRX NOPB	1	260	40	4	Each

<b>Document Date</b>	European RoHS Compliant. China RoHS Compliant.	<b>Weight (mg)</b>	Does NOT Contain Halogens
10-27-2011		19.50	

### Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Leadframe	3.940	Cu	7440-50-8	3.914	993,500	200,666
		Cr	7440-47-3	0.012	3,000	615
		Sn	7440-31-5	0.010	2,500	513
		Zn	7440-66-6	0.004	1,000	205
Solder Balls	2.610	Sn	7440-31-5	2.566	983,000	131,556
		Ag	7440-22-4	0.031	12,000	1,589
		Cu	7440-50-8	0.013	5,000	666
Chip	2.010	Si	7440-21-3	1.998	994,000	102,435
		Al	7429-90-5	0.012	6,000	615
Plastic	10.280	SiO2	60676-86-0	9.098	885,000	466,444
		Epoxy Resin	25928-94-3	0.874	85,000	44,809
		Mg(OH)2	1309-42-8	0.308	30,000	15,791
Wires	0.249	Au	7440-57-5	0.249	1,000,000	12,766
Die Attach	0.210	SiO2	60676-86-0	0.084	400,000	4,307
		Synthetic Rubber	64706-29-2	0.063	300,000	3,230
		Epoxy Resin	25928-94-3	0.063	300,000	3,230
LeadFinish	0.136	Sn	7440-31-5	0.136	1,000,000	6,973
Int. LeadFinish	0.070	Ag	7440-22-4	0.070	1,000,000	3,589

**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 at sub-ppm levels to provide semiconductor properties.
- Epoxy resin components listed are generic and may or may not be the specific compound used, which is considered proprietary.

### RoHS Material Composition Declaration

<b>RoHS Directive 2002/95/EC</b>	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.

- National products designated "ROHS Compliant" comply with the European Unions Directive on the Restriction of the Use of Hazardous Substances 2002/95/EC ("RoHS"). Certain National products contain lead in RoHS exempt applications 7(a) or 7(c)-I.
- National products do not contain and are not manufactured with ozone depleting compounds.
- National products do not contain substances identified by the European Chemical Agency ("ECHA") as substances of very high concern ("SVHC") per REACH Regulation (EC) No 1907/2006. National also complies with use restrictions as stipulated in Annex XVII of REACH.
- 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 Banned and Reportable Substances.
- National's list of banned and reportable substances and management system is based on the current version of the Joint Industrial Guide, JIG-101.

National has taken commercially reasonable steps to provide representative and accurate information but may not have independently verified information provided or conducted chemical analysis of incoming materials. Equivalent compliant materials may have been substituted for those stated herein. Material concentrations are the maximum expected concentration of the substance in the device and may not represent the actual concentration. National and its suppliers consider certain limited information to be confidential and thus CAS numbers and other limited information may not be available for release. Nationals Standard Terms and Conditions of Sale apply to any issue arising out of or in connection with the information provided herein unless otherwise provided by a written contract signed by both parties.

NATIONAL ACCEPTS NO DUTY TO NOTIFY USERS OF THIS DECLARATION OF UPDATES OR CHANGES TO THIS DECLARATION.

  
John L. Conn  
Vice President Quality

**Banned Substance Monitoring**

<b>Part Number</b>	<b>Document Date</b>
LM49100GRX NOPB	10-27-2011

European RoHS Compliant.

China RoHS Compliant.

<b>Item#</b>	<b>Material</b>	<b>Cd</b>	<b>CrVI</b>	<b>Pb</b>	<b>Hg</b>	<b>PBB</b>	<b>PBDE</b>	<b>Cl</b>	<b>Br</b>	<b>Ref#</b>
1	CHIP	<1	<1	<1	<30	<10	<10	<75	<50	1000
2	COMPOUND	<2	<2	<2	<2	<5	<5	<50	<50	649
3	FILM	<2	<2	<2	<2	<5	<5	120	<50	626
4	FRAME	<2	N/D	<2	<2	<5	<5	N/A	N/A	628
5	SOLDER BAL	<2	N/D	194	<2	<5	<5	<50	<50	684
6	WIRE	<2	N/D	<2	<2	<5	<5	N/A	N/A	75

\* Cd: Cadmium, CrVI: Hexavalent Chromium, Pb: Lead, Hg: Mercury, NA: Not Applicable

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

<b>Ref#</b>	<b>3rd Party Analysis</b> (available upon request, subject to a non-disclosure agreement)
1000	Analysis on 01/24/2011 by Balazs as per Report# 11-00322-00
649	Analysis on 04/29/2011 by SGS per Report# LPCI/04386(B)/11
626	Analysis on 04/29/2011 by SGS per Report# LPCI/04401(B)/11
628	Analysis on 04/29/2011 by SGS per Report# LPCI/04377(B)/11
684	Analysis on 04/29/2011 by SGS per Report# LPCI/04391(B)/11
75	Analysis on 04/29/2011 by SGS per Report# LPCI/04464(B)/11