

Company		DUNS#	URL For Additional Information
National Semiconductor		04-147-2986	http://www.national.com/analog/quality/green

Contact	Title	Phone	Email
Elizabeth Cathers	Product Ecology Eng. Mgr	1-408-721-5248	Green.Project@nsc.com

Part Number	MSL Rating	Peak Body Temp C	MaxTime(Sec)	Cycles	Unit Type
LM3245TLX NOPB	1	260	40	4	Each

Document Date	European RoHS Compliant. China RoHS Compliant.	Weight (mg)	Does NOT Contain Halogens
08-21-2009		4.64	

Homogeneous Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Chip	2.66	Si	7440-21-3	2.642	994,000	569,765
		Al	7429-90-5	0.016	6,000	3,451
Bumps	1.25	Sn	7440-31-5	1.233	983,000	265,905
		Ag	7440-22-4	0.015	12,000	3,235
		Cu	7440-50-8	0.006	5,000	1,294
BacksideCoating	0.65	Calcium Carbonate filler	471-34-1	0.424	650,000	91,438
		Epoxy Resin	25928-94-3	0.228	350,000	49,170
Passivation	0.06	Benzocyclobutene	694-87-1	0.064	1,000,000	13,802
UnderbumpMetallization	0.01	Cu	7440-50-8	0.005	564,000	1,078
		Al	7429-90-5	0.002	212,000	431
		Ni	7440-02-0	0.002	207,000	431
		V	7440-62-2	0.000	17,000	0

Note: The device content disclosed herewith is approximate and is based on engineering estimates only. It has not been verified through analytical. 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

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
----------------------------------	--

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 5, 7a or 7c.
- 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").
- 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.

 Gerry Edwards
Vice President Quality

Banned Substance Monitoring

Part Number	Document Date
LM3245TLX NOPB	08-21-2009

European RoHS Compliant.

China RoHS Compliant.

Item#	Material	Cd	CrVI	Pb	Hg	PBB	PBDE	Cl	Br	Ref#
1	CHIP	<1	<1	<1	<30	<10	<10	NA	NA	1000
2	BACKCOAT	<2	<5	<5	<1	<10	<10	NA	NA	576
3	BUMPS	< 2	< 2	168	< 2	NA	NA	NA	NA	650
4	PASSIVATION	<2	<5	<5	<1	<10	<10	NA	NA	633

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

* 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 03/02/2009 by BALAZ as per Report# E008516J #01/LMP7300D6/VIP050L23
576	Analysis on 03/30/2009 by ALS per Report# ATJB/1328BS/2009
650	Analysis on 03/30/2009 by SGS per Report# LPCI/04576/08
633	Analysis on 03/30/2009 by ALS per Report# ATJB/1339BS/2009