

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

Contact	Title	Phone	Email
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Part Number	MSL Rating	Peak Body Temp C	MaxTime(Sec)	Cycles	Unit Type
LM338K STEEL NOPB	1	NA	NA	NA	Each

Document Date	European RoHS Compliant. China RoHS Compliant.	Weight (mg)	Does NOT Contain Halogens
01-17-2012		12405.32	

Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Tab	90.000	Mo	7439-98-7	90.000	1,000,000	7,255
Base	7510.000	Fe	7439-89-6	7461.936	993,600	601,511
		Mn	7439-96-5	33.795	4,500	2,724
		C	7440-44-0	7.510	1,000	605
		S	63705-05-5	3.755	500	303
		P	7723-14-0	3.004	400	242
Chip	4.950	Si	7440-21-3	4.920	994,000	397
		Al	7429-90-5	0.030	6,000	2
Ext. LeadFinish	4.260	Sn	7440-31-5	4.111	965,000	331
		Ag	7440-22-4	0.128	30,000	10
		Cu	7440-50-8	0.021	5,000	2
Lid	2313.000	Ni	7440-02-0	2313.000	1,000,000	186,452
Glass	23.000	SiO2	60676-86-0	18.538	806,000	1,494
		B2O3	1303-86-2	2.990	130,000	241
		Na2O	12401-86-4	0.920	40,000	74
		Al2O3	1344-28-1	0.552	24,000	44
Heat Sink	2210.000	Cu	7440-50-8	2210.000	1,000,000	178,149
Plating	130.000	Ni	7440-02-0	122.889	945,300	9,906
		Au	7440-57-5	7.111	54,700	573
Leads	120.000	Ni	7440-02-0	62.400	520,000	5,030
		Fe	7439-89-6	57.600	480,000	4,643
Wires	0.106	Al	7429-90-5	0.106	1,000,000	9

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

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.

- 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)-1.
- 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
John L. Conn
Vice President Quality

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Vice President Quality

Banned Substance Monitoring

Part Number	Document Date
LM338K STEEL NOPB	01-17-2012

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	<75	<50	1000
2	HEADER	<2	<2	<2	<2	<5	<5	N/A	N/A	670
3	WIRE	<2	N/D	<2	<2	<5	<5	N/A	N/A	604

* 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 01/24/2011 by Balazs as per Report# 11-00322-00
670	Analysis on 04/29/2011 by SGS per Report# LPCI/04429(B)/11
604	Analysis on 04/29/2011 by SGS per Report# LPCI/04451(B)/11