

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
COP8SAA716M8 NOPB	3	260	40	4	Each

Document Date	European RoHS Compliant. China RoHS Compliant.	Weight (mg)	Does NOT Contain Halogens
12-09-2011		419.17	

Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Ext. LeadFinish	5.520	Sn	7440-31-5	5.520	1,000,000	13,169
Chip	5.350	Si	7440-21-3	5.318	994,000	12,687
		Al	7429-90-5	0.032	6,000	76
Plastic	305.051	SiO2	60676-86-0	271.495	890,000	647,694
		Epoxy Resin	25928-94-3	24.404	80,000	58,220
		Mg(OH)2	1309-42-8	9.152	30,000	21,834
Leadframe	101.910	Cu	7440-50-8	99.311	974,500	236,922
		Fe	7439-89-6	2.446	24,000	5,835
		Zn	7440-66-6	0.122	1,200	291
		P	7723-14-0	0.031	300	74
Die Attach	0.571	Ag	7440-22-4	0.428	750,000	1,021
		Epoxy Resin	25928-94-3	0.143	250,000	341
Int. LeadFinish	0.470	Ag	7440-22-4	0.470	1,000,000	1,121
Wires	0.300	Au	7440-57-5	0.300	1,000,000	716

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. National's 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

Part Number	Document Date
COP8SAA716M8 NOPB	12-09-2011

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	COMPOUND	<2	<2	<2	<2	<5	<5	<50	<50	720
3	DIEATTACH	<2	<2	<2	<2	<5	<5	<50	<50	32
4	EXTLF	<2	N/D	23	<2	<5	<5	<50	<50	595
5	WIRE	<2	N/D	<2	<2	<5	<5	N/A	N/A	132

* 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
720	Analysis on 04/29/2011 by SGS per Report# LPCI/04467(B)/11
32	Analysis on 04/29/2011 by SGS per Report# LPCI/04433(B)/11
595	Analysis on 04/29/2011 by SGS per Report# LPCI/04369(B)/11
132	Analysis on 04/29/2011 by SGS per Report# LPCI/04465(B)/11