

Company National Semiconductor	URL for Additional Information http://www.national.com/quality/green/
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Contact	Title	Phone	Email
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Part Number	MSL Rating	Peak Body Temp C	MaxTime (Sec)	Cycles
TP3420AV309	3	220	30	4

Document Date 5-May-2007	Contains Lead(Pb) and is NOT European RoHS Compliant NOT China RoHS Compliant	Weight (mg) 676.000	Unit Type Each
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Homogeneous Material Composition Declaration for Electronic Products

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Plastic	452.200	SiO2	60676-86-0	339.150	750,000	501,701
		Epoxy Resin	25928-94-3	104.910	232,000	155,193
		Sb2O3	1309-64-4	5.426	12,000	8,027
		Brominated Epoxy	40039-93-8	2.713	6,000	4,014
Leadframe	189.540	Cu	7440-50-8	184.707	974,500	273,235
		Fe	7439-89-6	4.549	24,000	6,729
		Zn	7440-66-6	0.227	1,200	336
		P	7723-14-0	0.057	300	84
Ext. LeadFinish	18.080	Sn	7440-31-5	15.368	850,000	22,734
		Pb	7439-92-1	2.712	150,000	4,012
Chip	12.580	Si	7440-21-3	12.505	994,000	18,498
		Al	7429-90-5	0.075	6,000	112
Int. LeadFinish	1.400	Ag	7440-22-4	1.400	1,000,000	2,071
Die Attach	1.280	Ag	7440-22-4	0.960	750,000	1,420
		Epoxy Resin	25928-94-3	0.320	250,000	473
Wires	0.920	Au	7440-57-5	0.920	1,000,000	1,361

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 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.
- 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.
- 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/.
- 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 in this document is derived from default values associated with internal process information 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). Material concentrations are the maximum expected concentration of the substances in the device and may not represent the actual concentration. National and National 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 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 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 Fields
Vice President Quality



Banned Substance Monitoring

Part Number	Document Date
TP3420AV309	5-May-2007

Contains Lead(Pb) and is NOT European RoHS Compliant.

NOT China RoHS Compliant

Use	Material	Cd	CrVI	Pb	Hg	PBB	PBDE	Ref #
Device	CHIP	<1	<1	<1	<1	<1	<1	1000
	COMPOUND							
	DIEATTACH							
	EXTLF	<2	<2	149000	<2	NA	NA	56
	FRAME	<100	<1000	<1000	<1000	<1000	<1000	9990
	WIRE	<2	<5	<5	<1	<10	<10	75

* 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 04/17/2007 by Balazs Analytical Services-Fremont CA per Report# 07-01051-07
56	Analysis on 04/27/2007 by SGS per Report# LPCI/07440/07
75	Analysis on 05/16/2007 by ALS per Report# ATJB/3490BS/2007
9990	Analysis pending

产品名称 Product Name	TP3420AV309
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部件名称 Part	有毒有害物质或元素 Toxic and harmful substances or elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
集成电路 Integrated Circuit	X	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006标准规定的限量要求以下。

○ : Indicates that this hazardous substance contained in all homogeneous materials of this part is below the limit requirement in SJ/T 11363-2006.

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006标准规定的限量要求。

X : Indicates that this hazardous substance contained in at least one of the homogeneous materials of this part is above the limit requirement in SJ/T 11363-2006.

美国国家半导体的产品不会含有镉、汞、六价铬、多溴联苯(PBB)和二苯醚(PBDE)。

National Semiconductor's products will not contain cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and diphenyl ether (PBDE).



环保使用期限(epup) 是指以符号在这里展出. 环保使用期限(epup) 的有效期只有当产品使用范围以内的数据表中的规格.

The Environmental Protection Use Period (EPUP) is defined by the symbol shown here. The Environmental Protection Use Period (EPUP) is valid only when product is used within the limits of the data sheet specifications.