

<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>
Lorena Dudman	Product Stewardship Eng. Mgr	1-408-721-8180	Green.Project@nsc.com

<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>
ADC08D1520WGFQV	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		8504.00	

**Material Composition Declaration for Electronic Products**

Item	Weight (mg)	Component	CAS#	Weight (mg)	Item-ppm	Part-ppm
Leads	828.000	Fe	7439-89-6	447.120	540,000	52,578
		Ni	7440-02-0	240.120	290,000	28,236
		Co	7440-48-4	140.760	170,000	16,552
Lid Attach	55.400	Au	7440-57-5	44.320	800,000	5,212
		Sn	7440-31-5	11.080	200,000	1,303
Lid	508.000	Fe	7439-89-6	269.240	530,000	31,660
		Ni	7440-02-0	150.368	296,000	17,682
		Co	7440-48-4	81.280	160,000	9,558
		Au	7440-57-5	7.112	14,000	836
Heat Sink	4593.000	W	7440-33-7	4133.700	900,000	486,089
		Cu	7440-50-8	459.300	100,000	54,010
Ni Plate	41.100	Ni	7440-02-0	37.935	923,000	4,461
		Co	7440-48-4	2.836	69,000	333
		Pd	7440-05-3	0.288	7,000	34
		B	7440-42-8	0.041	1,000	5
Metallization	289.000	W	7440-33-7	271.371	939,000	31,911
		Mo	7439-98-7	17.629	61,000	2,073
Heatsink Finish	202.000	Ag	7440-22-4	145.440	720,000	17,103
		Cu	7440-50-8	56.560	280,000	6,651
Ceramic Body	1817.000	Al2O3	1344-28-1	1642.132	903,760	193,101
		Cr2O3	1308-38-9	71.390	39,290	8,395
		SiO2	60676-86-0	65.412	36,000	7,692
		TiO2	13463-67-7	18.443	10,150	2,169
		CaO	1305-78-8	10.702	5,890	1,258
		MgO	1309-48-4	8.921	4,910	1,049
Chip	15.800	Si	7440-21-3	15.705	994,000	1,847
		Al	7429-90-5	0.095	6,000	11
Die Attach	14.200	Ag	7440-22-4	11.360	800,000	1,336
		Lead Borate Glass	65997-18-4	2.840	200,000	334
Au Plate	129.000	Au	7440-57-5	129.000	1,000,000	15,169
LeadFinish	10.500	Ag	7440-22-4	8.925	850,000	1,050
		Cu	7440-50-8	1.575	150,000	185
Wires	1.000	Al	7429-90-5	0.990	990,000	116
		Si	7440-21-3	0.010	10,000	1

**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.

1. 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.
2. National products do not contain and are not manufactured with ozone depleting compounds.
3. 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.
4. 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.
5. 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

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Vice President Quality

**Banned Substance Monitoring**

<b>Part Number</b>	<b>Document Date</b>
ADC08D1520WGFQV	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	LID	<2	<2	<2	<2	<5	<5	<50	<50	711
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)

<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
711	Analysis on 04/29/2011 by SGS per Report# LPCI/04444(B)/11
604	Analysis on 04/29/2011 by SGS per Report# LPCI/04451(B)/11