

		Material Composition Declaration Copyright 2005. IPC, Bannockburn, Illinois. All rights reserved under both international and Pan-American copyright conventions.		This document is a declaration of the substances within the manufacturer listed item. Note: if the item is an assembly with lower level parts, the declaration encompasses all lower level materials for which the manufacturer has engineering responsibility.					
1752-2 1.1		IPC Web Site for Information on IPC-1752 Standard http://www.ipc.org/IPC-175x		Form Type * Distribute		Declaration Class * Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Information			
Supplier Information									
Company Name * National Semiconductor		Company Unique ID NATSEMI		Unique ID Authority 04-147-2986		Response Date * 06-02-2009		Response Document ID	
Contact Name * Elizabeth Cathers		Title - Contact Product Ecology Eng. Mgr		Phone - Contact * 1-408-721-5248		Email - Contact * Green.Project@nsc.com			
Authorized Representative * Elizabeth Cathers		Title - Representative Product Ecology Eng. Mgr		Phone - Representative * 1-408-721-5248		Email - Representative * Green.Project@nsc.com		Supplier Comments or URL for Additional Information http://www.national.com/analog/quality/green	
	Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	Weight *	UOM	Unit Type
		LM431BIM3X HALF	LM431BIM3X HALF	06-02-2009			10.34	mg	Each
	Alternate Recommendation				Alternate Item Comments				
Manufacturing Process Information									
Terminal Plating / Grid Array Material		Terminal Base Alloy	J-STD-020 MSL Rating	Peak Process Body Temperature		Max Time at Peak Temperature		Number of Reflow Cycles	
Sn		CU Alloy	1	260 C		40 seconds		4	
Comments									
"Does not contain PFOS."									

RoHS Material Type Declaration		Declaration Type * Custom	
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		
<p>Subject to the limitations below, National Semiconductor Corporation ("National") certifies the following information as of the document date.</p> <ol style="list-style-type: none"> 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 5, 7a or 7c. 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"). 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. Nationals list of banned and reportable substances and management system is based on the current version of the Joint Industrial Guide, JIG-101. <p>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.</p> <p>NATIONAL ACCEPTS NO DUTY TO NOTIFY USERS OF THIS DECLARATION OF UPDATES OR CHANGES TO THIS DECLARATION</p>			
RoHS Declaration *	1 - Item(s) does not contain RoHS restricted substances per the definition above	Supplier Acceptance *	Accepted
<p>Exemptions: If the declared item does not contain RoHS restricted substances per the definition above except for defined RoHS exemptions, then select the corresponding response in the RoHS Declaration and above and choose all applicable exemptions.</p>			
Declaration Signature			
Supplier Signature	 Gerry Edwards Vice President Quality		

Homogeneous Material Composition Declaration for Electronic Products

Item/SubItem Name	Homogeneous Material	Weight	Unit of Measure	Level	Substance Category	Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance	PPM
	Chip	0.450	mg	Requester		Si	7440-21-3		0.447	mg		994,000
				Requester		Al	7429-90-5		0.003	mg		6,000
	Die Attach	0.093	mg	Requester		Ag	7440-22-4		0.070	mg		750,000
				Requester		Epoxy Resin	25928-94-3		0.023	mg		250,000
	Ext. LeadFinish	0.395	mg	Requester		Sn	7440-31-5		0.395	mg		1,000,000
	Int. LeadFinish	0.061	mg	Requester		Ag	7440-22-4		0.061	mg		1,000,000
	Leadframe	3.714	mg	Requester		Cu	7440-50-8		3.619	mg		974,500
				Requester		Fe	7439-89-6		0.089	mg		24,000
				Requester		Zn	7440-66-6		0.004	mg		1,200
				Requester		P	7723-14-0		0.001	mg		300
	Plastic	5.609	mg	Requester		SiO2	60676-86-0		4.042	mg		720,700
				Requester		Epoxy Resin	25928-94-3		1.346	mg		240,000
				Requester		Sb2O3	1309-64-4		0.146	mg		26,000
				Requester		Brominated Epoxy	40039-93-8		0.075	mg		13,300
	Wires	0.019	mg	Requester		Au	7440-57-5		0.019	mg		1,000,000