# Material Composition Declaration

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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.

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|---|---|---|---|
| 1752-2 1.1 | IPC Web Site for Information on IPC-1752 Standard<br>http://www.ipc.org/IPC-175x | **Form Type ***<br>**Distribute** | **Declaration Class ***<br>**Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Information** |

## Supplier Information

| | | | | | |
|---|---|---|---|---|---|
| **Company Name ***<br>**National Semiconductor** | Company Unique ID<br>NATSEMI | Unique ID Authority<br>04-147-2986 | **Response Date ***<br>**11-11-2011** | Response Document ID | |
| Contact Name *<br>Lorena Dudman | Title - Contact<br>Product Stewardship Eng. | Phone - Contact *<br>1-408-721-8180 | Email - Contact *<br>Green.Project@nsc.com | | |
| Authorized Representative *<br>Lorena Dudman | Title - Representative<br>Product Stewardship Eng. | Phone - Representative *<br>1-408-721-8180 | Email - Representative *<br>Green.Project@nsc.com | Supplier Comments or URL for Additional Information<br>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 |
|---|---|---|---|---|---|---|---|---|---|
| | | LMV431CM5 NOPB | LMV431CM5 NOPB | 11-11-2011 | | | **14.70** | 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** |
|---|---|

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)-I.
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. Nationals 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

| **RoHS Declaration *** | **1 - Item(s) does not contain RoHS restricted substances per the definition above** | **Supplier Acceptance *** | **Accepted** |
|---|---|---|---|

**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.

## Declaration Signature

**Supplier Signature** John L Conn
Vice President Quality

**John L. Conn 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Plastic | 7.473 | mg | | Requester | | | SiO2 | 60676-86-0 | | 6.651 | mg | | 890,000 |
| | | | | | | | Requester | | | Epoxy Resin | 25928-94-3 | | 0.598 | mg | | 80,000 |
| | | | | | | | Requester | | | Mg(OH)2 | 1309-42-8 | | 0.224 | mg | | 30,000 |
| | | | Leadframe | 5.579 | mg | | Requester | | | Cu | 7440-50-8 | | 5.436 | mg | | 974,500 |
| | | | | | | | Requester | | | Fe | 7439-89-6 | | 0.134 | mg | | 24,000 |
| | | | | | | | Requester | | | Zn | 7440-66-6 | | 0.007 | mg | | 1,200 |
| | | | | | | | Requester | | | P | 7723-14-0 | | 0.002 | mg | | 300 |
| | | | Ext. LeadFinish | 0.700 | mg | | Requester | | | Sn | 7440-31-5 | | 0.700 | mg | | 1,000,000 |
| | | | Chip | 0.648 | mg | | Requester | | | Si | 7440-21-3 | | 0.644 | mg | | 994,000 |
| | | | | | | | Requester | | | Al | 7429-90-5 | | 0.004 | mg | | 6,000 |
| | | | Die Attach | 0.215 | mg | | Requester | | | Ag | 7440-22-4 | | 0.161 | mg | | 750,000 |
| | | | | | | | Requester | | | Epoxy Resin | 25928-94-3 | | 0.054 | mg | | 250,000 |
| | | | Int. LeadFinish | 0.054 | mg | | Requester | | | Ag | 7440-22-4 | | 0.054 | mg | | 1,000,000 |
| | | | Wires | 0.027 | mg | | Requester | | | Au | 7440-57-5 | | 0.027 | mg | | 1,000,000 |