



## NIC Components Corp. - RoHS Compliance Notice and Roadmap

Please be advised, the following document outlines NIC Components Corp. compliance strategy with the goal to meet WEEE - ROHS requirements of EC Directive on Waste Electrical and Electronic Equipment (WEEE) and EC Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (ROHS).

Maximum concentration values (MCV) define the maximum amount of an individual restricted substance (per the EU RoHS directive) within each homogeneous material\* that compose the component.

### RESTRICTED (ROHS) MATERIALS:

#### 1. Lead (Pb):

MCV: < 0.10% = < 1,000PPM

Exception: Allowable Lead (Pb) within glass of electronic components (ie. glass coat or frit)

#### 2. Mercury (Hg):

MCV: < 0.10% = < 1,000PPM

#### 3. Hexavalent Chromium (Cr VI):

MCV: < 0.10% = < 1,000PPM

#### 4. Cadmium (Cd):

MCV: < 0.01% = < 100 PPM

#### 5. & 6. Poly brominated flame retardants (PBB and PBDE):

MCV: < 0.10% = < 1,000PPM

\* - Homogeneous materials are defined as materials that cannot be mechanically disjointed into different materials and are "of uniform composition throughout" Types include: liquids, plastics, ceramics, glass, metals, alloys, paper, resins, and coatings.

### ACTION #1 - RoHS Transition Announcement

RoHS Compliant Products and Part Numbers **will be phased in by end of calendar 2005** as the **standard - default part number** (inventoried product).

### ACTION #2 - RoHS Compliant Material Identification

In compliance with National Electronic Distributors Association (NEDA) and National Electronics Manufacturing Initiative's (NEMI) recommendations, NIC will institute use of **unique part number suffix identifier "F"** to identify **RoHS compliant** material. This effort is made to enable control and identification **RoHS compliant** material throughout the supply chain.

Examples:

1. **RoHS Compliant** SMT Aluminum Electrolytic Capacitors ... P/N: NACxxxxxxxxxxTRF
2. **RoHS Compliant** SMT MLCC - Ceramic Chip Capacitors ... NMCxxxxxxxxxxxxTRPF

[ continued ]



**ACTION #2 - RoHS Compliant Material Identification [ continued ]**

**SUB: Pb-Free (Lead Free) Material Identification**


To allow easy identification of all PoHS compliant material, all NIC Components Corp Reel, Bag, Box, Cartons will have **RoHS Compliant label** as shown in example below.

Second interconnect material (Example: "E2" for Sn) and maximum safe exposure temperature for each product series are listed at [www.niccomp.com/rohs](http://www.niccomp.com/rohs)



**ACTION #3 - Non-RoHS Compliant Products**

As of March 31, 2006, legacy part numbers for NIC product series will have completed transition to Pb-Free finish on terminals - terminations.  
Link: <http://www.niccomp.com/pcn.html-ssi#Legacy>

 **For best long-term availability, conversion to RoHS compliant part numbers is strongly encouraged.**

Legacy P/N: NMC0603NPO101J25TRP ... **RoHS P/N:** NMC0603NPO101J25TRPF  
Legacy P/N: NRSA101M16V6.3X11 ... **RoHS P/N:** NRSA101M16V6.3X11F  
Legacy P/N: NRC06F1001TR ... **RoHS P/N:** NRC06F1001TRF

Please contact NIC for assistance in your part number migration or conversion efforts ■ e-mail: [RoHS@niccomp.com](mailto:RoHS@niccomp.com)

[ continued ]



**Sub: RoHS (Pb-Free) Components with 100% Sn Finish**

**RE: Tin Whisker**

NIC Components Corp will assure NEMI exception conditions are met, items #1 ~ 4 listed below, to assure compliance with the discrete resistor and capacitors exception detailed within the NEMI tin whisker acceptance testing guideline.

National Electronics Manufacturing Initiative's (NEMI) Tin Whisker Acceptance Test Requirements for 100% Sn (Tin) finish components identifies (Test guideline submission 2.6 7/28/04 ... Per Section 6) ... **discrete resistor and capacitors are exception to tin whisker test requirements** if:

1. Matte Sn finish thickness of at least 2um (80 micro-inches)
2. Ni barrier thickness of at least 2um (80 micro-inches)
3. A controlled and monitored plating process for:
  - + plating bath parameters: current density, voltage, acidity,
  - + plating bath chemistry and material contamination
  - + plating thickness
  - + plating stress
  - + plating grain size
  - + plating crystallographic texture
  - + plating carbon content below 0.05% and copper content below 0.5%
4. Periodic Tin Whisker Monitoring

Ref: [http://www.nemi.org/projects/ese/tin\\_whisker.html](http://www.nemi.org/projects/ese/tin_whisker.html)

**Additional RoHS Documentation;**

Green Statements  
Pb-Free Soldering Profiles  
are available on the NIC website:  
[www.niccomp.com/rohs](http://www.niccomp.com/rohs)

- Please contact NIC for direct assistance in your part number migration or conversion efforts ■ e-mail: [RoHS@niccomp.com](mailto:RoHS@niccomp.com)

Prepared by:  
NIC TPMG  
Jim Wright  
jwright@niccomp.com

A handwritten signature in black ink, appearing to read 'Jim Wright', is written over a light blue background.

**NIC Global Locations:** [LINK](#)

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**SE Asia** Tel: 65-68441575 | [niasales@niccomp.com](mailto:niasales@niccomp.com)



**PRODUCT CHANGE NOTICE**  
 10/01/2004

**SUBJECT:** Component Part Number Change

**NIC PRODUCT SERIES:** All NIC Product Series; See below table

Please be advised that the following is notice of **standard - default part number change** from **Legacy** (non-RoHS) to **RoHS compliant** part number. Part number migration is shown on table below.

**EFFECTIVE DATE:** Phased in through end of calendar 2005 as the standard - default part number (inventoried product).

**PART NUMBERS EFFECTED:** All NIC products; See table below.

**REASON FOR CHANGE:**

To provide clear - easy to follow - system for identification of RoHS (Pb-Free) compliant versions of NIC products. Also to comply with industry recommendations for new unique part numbers for RoHS (Pb-Free) compliant products [Ref: NEDA & JEDEC guidelines]

<u>Legacy NIC P/N</u>		<u>NIC RoHS P/N</u>		<u>Legacy NIC P/N</u>		<u>NIC RoHS P/N</u>
NACE	→	NACE....F		NACX	→	NACX....F
NACEN	→	NACEN....F		NACY	→	NACY....F
NACEW	→	NACEW....F		NACZ	→	NACZ....F
NACH	→	NACH....F		NACZF	→	NACZF....F
NACHL	→	NACHL ....F		NAM	→	NAM....F
NACK	→	NACK ....F		NAP	→	NAP....F
NACL	→	NACL....F		NCA	→	NCA....F
NACM	→	NACM....F		NCB	→	NCB....F
NACNW	→	NACNW ....F		NCD	→	NCD....F
NACP	→	NACP....F		NCF	→	NCF....F
NACS	→	NACS....F		NCM	→	NCM....F
NACT	→	NACT....F		NCMA	→	NCMA....F
NACV	→	NACV....F		NDTM	→	NDTM....F
NACVF	→	NACVF....F		NEM	→	NEM....F

[ continued ]



<u>Legacy NIC P/N</u>	<u>NIC RoHS P/N</u>	<u>Legacy NIC P/N</u>	<u>NIC RoHS P/N</u>
NFA	NFA ....F	NREL	NREL....F
NIN	NIN....F	NRE-LS	NRE-LS....F
NIN-H	NIN-H ....F	NRE-LW	NRE-LW....F
NIS	NIS....F	NRE-S	NRE-S....F
NLE	NLE....F	NRE-SN	NRE-SN....F
NLE-L	NLE-L....F	NRE-SW	NRE-SW....F
NLE-S	NLE-S....F	NRE-SX	NRE-SX....F
NMC NPO	NMC NPO....F	NRE-WB	NRE-WB ....F
NMC X7R	NMC X7R....F	NRLF	NRLF....F
NMC X5R	NMC X5R....F	NRLFW	NRLFW....F
NMC Y5V	NMC Y5V....F	NRLM	NRLM....F
NMC-E	NMC-E....F	NRLMW	NRLMW....F
NMC-L	NMC-L ....F	NRM	NRM....F
NMC-H	NMC-H....F	NRM-S	NRM-S....F
NMC-M	NMC-M ....F	NRN	NRN....F
NML	NML ....F	NRP	NRP....F
NMO	NMO....F	NRSA	NRSA....F
NMR	NMR....F	NRSG	NRSG ....F
NNR	NNR....F	NRSJ	NRSJ ....F
NPI	NPI....F	NRSK	NRSK ....F
NPI	NPI....F	NRSN	NRSN....F
NPRM	NPRM....F	NRSS	NRSS....F
NPTM	NPTM....F	NRSX	NRSX ....F
NRC	NRC....F	NRSY	NRSY....F
NRCE	NRCE ....F	NRSZ	NRSZ....F
NRD	NRD....F	NRSZC	NRSZC ....F
NRE-H	NRE-H....F	NRWA	NRWA....F
NRE-HW	NRE-HW....F	NRWS	NRWS....F

[ continued ]



Legacy NIC P/N		NIC RoHS P/N
NRWX	→	NRWX....F
NSD	→	NSD....F
NSFC	→	NSFC....F
NSHC	→	NSHC ....F
NSP	→	NSP ....F
NSPC	→	NSPC....F
NSPE	→	NSPE ....F
NSPER	→	NSPER ....F
NSPU	→	NSPU ....F
NSPZ	→	NSPZ ....F
NSPZR	→	NSPZR ....F
NSR	→	NSR....F
NSRN	→	NSRN....F
NSRW	→	NSRW....F
NSRZ	→	NSRZ....F
NSTE	→	NSTE ....F
NSTEW	→	NSTEW ....F
NSWC	→	NSWC ....F
NTC-L	→	NTC-L ....F
NTC-T	→	NTC-T....F
NTHC	→	NTHC....F
NTM	→	NTM....F
NTP	→	NTP ....F
NTR	→	NTR ....F
NVS	→	NVS....F
NZO	→	NZO....F

**Additional RoHS Documentation;**  
Green Statements  
Pb-Free Soldering Profiles  
are available on the NIC website:  
[www.niccomp.com/rohs](http://www.niccomp.com/rohs)

■ Please contact NIC for direct assistance in  
your part number migration  
or conversion efforts ■ e-mail:  
[RoHS@niccomp.com](mailto:RoHS@niccomp.com)

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October 9, 2006

TOPICS

- 1.) Certificate of Conformance to RoHS Material Restrictions
- 2.) Lead (Pb) Exemptions, as allowed by EU RoHS Directive, by NIC Product Series

Please be advised all NIC products showing the part number suffix "F" (see product series table on pages 2~4) meet the EU Directive 2002/95/EC "RoHS" covering Restriction of Use of Certain Hazardous Substances. Maximum concentration values (MCV) define the maximum amount of an individual restricted substance (per the EU RoHS directive) within each homogeneous material\* that compose the component.


RoHS RESTRICTED MATERIALS:	
Substance	RoHS LIMIT: MCV - Maximum Concentration Values
1. Lead (Pb)	< 0.10% = < 1000 PPM
2. Mercury (Hg)	< 0.10% = < 1,000PPM
3. Hexavalent Chromium (Cr VI)	< 0.10% = < 1,000PPM
4. Cadmium (Cd)	< 0.01% = < 100 PPM
5. Polybrominated Biphenyls (PBB)	< 0.10% = < 1,000PPM
6. Polybrominated Diphenyl Ethers (PBDE)	< 0.10% = < 1,000PPM

\* - Homogeneous materials are defined as materials that cannot be mechanically disjointed into different materials and are "of uniform composition throughout" Types include: liquids, plastics, ceramics, glass, metals, alloys, paper, resins and coatings.

**We hereby certify all NIC part numbers ending in "F" suffix (NxxxxxxxF) are RoHS Compliant**

Lead (Pb) material exemptions, as allowed within EU RoHS Directive, are listed for each NIC product series on pages 2 ~ 5 attached.

For technical assistance on all matters relating to RoHS, please contact NIC at: [rohs@niccomp.com](mailto:rohs@niccomp.com)

SIGNED:  Jim Wright, TPMG - NIC Components Corp.

In addition to the above RoHS restricted materials, the NIC product series listed on pages 2 ~ 5 **do not contain**: Chlorinated organic compounds, Polychlorinated biphenyls (PCB), Polychlorinated naphthalenes (PCN), Chlorinated paraffins (CP), Mirex (Perchlordecone) nor other chlorinated organic compounds, Tetrabromobisphenol-A-bis-(2, 3-dibromopropylether) (TBBP-A-bis) nor other brominated organic compounds, Tributyl tin compounds, Triphenyl tin compounds, Asbestos, Azo compounds, nor Formaldehyde

(Subject to Change)



NIC COMPONENTS CORP.

[www.niccomp.com](http://www.niccomp.com) | Technical Support: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)

NIC Series	RoHS Exemptions
NACC_____F	No Exemptions
NACE_____F	No Exemptions
NACEN_____F	No Exemptions
NACEW_____F	No Exemptions
NACH_____F	No Exemptions
NACK_____F	No Exemptions
NACL_____F	No Exemptions
NACNW_____F	No Exemptions
NACP_____F	No Exemptions
NACS_____F	No Exemptions
NACT_____F	No Exemptions
NACV_____F	No Exemptions
NACVF_____F	No Exemptions
NACX_____F	No Exemptions
NACY_____F	No Exemptions
NACZ_____F	No Exemptions
NACZF_____F	No Exemptions
NAM_____F	No Exemptions
NAP_____F	No Exemptions
NCA_____F	No Exemptions
NCB_____F	No Exemptions
NCB-H_____F	No Exemptions
NCC_____F	No Exemptions
NCD_____F	No Exemptions
NCF_____F	No Exemptions
NCM_____F	#7c - Lead in electronics ceramic parts (e.g. Piezoelectronic devices)
NCMA_____F	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NCSP_____F	No Exemptions
NCSR_____F	No Exemptions
NCST_____F	No Exemptions
NCSW_____F	No Exemptions
NCT_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NDTM_____F	No Exemptions
NEM_____F	No Exemptions
NEXA_____F	No Exemptions
NEXC_____F	No Exemptions
NEXG_____F	No Exemptions
NEXM_____F	No Exemptions
NEXS_____F	No Exemptions



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NIC Series	RoHS Exemptions
NEXT_____F	No Exemptions
NFA_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NFI_____F	No Exemptions
NIN-FA_____F	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NIN-FB_____F	No Exemptions
NIN-FC_____F	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NIN-N_____F	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NIN-P_____F	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NIN-H _____F	No Exemptions
NIS_____F	No Exemptions
NLE_____F	No Exemptions
NLE-L_____F	No Exemptions
NLE-S_____F	No Exemptions
NLQ _____F	No Exemptions
NMCxxxxNPO_____F	#7c - Lead in electronics ceramic parts (e.g. Piezoelectronic devices)
NMCxxxxX5R_____F	No Exemptions
NMCxxxxX7R_____F	No Exemptions
NMCxxxxY5V_____F	No Exemptions
NMC-H_____F	#7c - Lead in electronics ceramic parts (e.g. Piezoelectronic devices)
NMC-L _____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NMC-M _____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NML _____F	No Exemptions
NMO_____F	No Exemptions
NMR_____F	No Exemptions
NNR_____F	No Exemptions
NPC _____F	No Exemptions
NPI_C_____F	No Exemptions
NPI_L_____F	No Exemptions
NPI_P_____F	No Exemptions
NPI_S_____F	No Exemptions
NPI_T_____F	No Exemptions
NPI_W_____F	No Exemptions
NPIS_D_____F	No Exemptions
NPIS_F_____F	No Exemptions
NPIS_H_____F	No Exemptions
NPIS_P_____F	No Exemptions
NPIS_R_____F	No Exemptions
NPIS_T_____F	No Exemptions



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NIC Series	RoHS Exemptions
NPRM_____F	No Exemptions
NPTM_____F	No Exemptions
NPX_____F	No Exemptions
NRBX_____F	No Exemptions
NRC_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NRCE _____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NRD_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NRE-H_____F	No Exemptions
NRE-HL_____F	No Exemptions
NRE-HW_____F	No Exemptions
NREL_____F	No Exemptions
NRE-LS_____F	No Exemptions
NRE-LW_____F	No Exemptions
NRE-S_____F	No Exemptions
NRE-SN_____F	No Exemptions
NRE-SW_____F	No Exemptions
NRE-SX_____F	No Exemptions
NRE-WB_____F	No Exemptions
NRE-WX_____F	No Exemptions
NRGB_____F	No Exemptions
NRLF_____F	No Exemptions
NRLFW_____F	No Exemptions
NRLM_____F	No Exemptions
NRLMW_____F	No Exemptions
NRLR_____F	No Exemptions
NRLRW_____F	No Exemptions
NRM_____F	No Exemptions
NRM-S_____F	No Exemptions
NRN_____F	No Exemptions
NRP_____F	No Exemptions
NRSA_____F	No Exemptions
NRSG _____F	No Exemptions
NRSH_____F	No Exemptions
NRSJ_____F	No Exemptions
NRSK_____F	No Exemptions
NRSN_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NRSS_____F	No Exemptions
NRSX _____F	No Exemptions
NRSY_____F	No Exemptions



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NIC Series	RoHS Exemptions
NRSZ_____F	No Exemptions
NRSZC_____F	No Exemptions
NRWA_____F	No Exemptions
NRWP_____F	No Exemptions
NRWS_____F	No Exemptions
NRWX_____F	No Exemptions
NRWY_____F	No Exemptions
NSD_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
	#7a - Lead in high melting temperature solders (i.e. lead based solder alloys containing 85% by weight or more lead.
NSFC_____F	No Exemptions
NSHC_____F	No Exemptions
NSP_____F	No Exemptions
NSPC_____F	No Exemptions
NSPE_____F	No Exemptions
NSPU_____F	No Exemptions
NSR_____F	No Exemptions
NSRN_____F	No Exemptions
NSRW_____F	No Exemptions
NSRZ_____F	No Exemptions
NSTL_____F	No Exemptions
NSTLW_____F	No Exemptions
NSWC_____F	No Exemptions
NTC-L_____F	No Exemptions
NTC-T_____F	No Exemptions
NTL_____F	No Exemptions
NTM_____F	No Exemptions
NTP_____F	No Exemptions
NTR_____F	No Exemptions
NVS_____F	#5 - Lead in glass of cathode ray tubes, electronics components and fluorescent tubes.
NZO_____F	No Exemptions