

Document Title		[DAL/HQ/X3/EV/MFN/PH/TH][GEN] Control of Banned and Restricted Environmental Substances			
Doc ID #	10-0131	New Rev	B	Effective Date	9/11/2006

Originator	Robert Grandys	Facility	DALLAS
Phone #	972-371-4690	883	<input type="checkbox"/> SMD
ECN Type	Permanent	Expiration	Date
Matl. or Masks Affected	N/A	Disposition	N/A

For Fab Only

Area		Level	Class I
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For Product Related Only

Die Type	
External Number	
Business Unit	VP Name

For Data Sheet Only

Print Review Req'd	N/A
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Root Cause or Justification of ECN

Identify material as 10-0131 compliant by C of C with each delivery to aide IQC. Require marking on each inner box or bag saying " ROHS compliant" to keep ROHS material identified in raw material stores. Simplify the long chemical name listing in current rev to the shorter generic and standardized listing established by iNEMI's/EIA Joint Industry Guide 101 (JIG A & B)

Description of Change

From	To
1. Listings of chemicals from various sources	1.listing of chemical per the Joint Industry guide JIG-101 annex A and B 2. Add requirements for C of C and ROHS compliant label on each delivery of materials within the scope of this document 3. Obtain ICP data LT 1Yr old on demand from supplier 4. Reformat to new template

Approvals

Name	Functional Title	Date	Name	Functional Title	Date
B Preeshl		8/18/06	A Quintero		8/9/06
A Serquina Per A Santos		8/21/06	R Shine		8/20/06
G Rutland For S Cox		9/11/06	C Baldwin		8/8/06
S Di George		8/8/06	M Walczak		8/8/06
S Korynta		8/8/06	B Johnson		8/8/06
M Bates		8/17/06	S Schuldenfrei		8/11/06
E Lohman		8/8/06	H Lo		8/8/06
T Smith		8/16/06	M Gehm		8/15/06
V Lakhotia		8/15/06	S Birdsall		8/8/06
K Call		8/8/06	R Wall		8/8/06
R Romo		8/8/06	T Nguyen		8/9/06
A Chu		8/11/06	N Desatnik		8/8/06
T Kay		8/8/06	S Chopra		8/8/06
A Hoffner		8/16/06	R Patel		8/29/06
W Au		8/8/06	R Nandan		8/16/06
J He		8/8/06	S Dubey		8/15/06
A Raviswaran		8/8/06	G Scott		8/8/06
J Ghorashian		8/8/06	N Argenti		8/18/06


C.Baldwin for J Carter		8/18/06	M Sweeny		8/15/06
S Uppili		8/8/06	L Blanchard		8/8/06
R Solis		8/9/06	V Ullal	N/A	8/22/06

Additional Notification (refer to 11-0001)

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Other Docs Affected No
DC Submission Date 5/10/06 6/5/06 8/7/06 dz DC Processor Name

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DOCUMENT TITLE:
**[DAL/HQ/X3/EV/MFN/PH/TH][GEN] Control of Banned and Restricted Environmental
Substances**

DOC ID # 10-0131

NEW REV: B

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1. **TITLE: [DAL/HQ/X3/EV/MFN/PH/TH][GEN] Control of Banned and Restricted Environmental Substances**

2. **PURPOSE:**

2.1. The purpose of this document is to describe the policy and procedures of Maxim Integrated Products, Inc. ("Maxim") with respect to banned and restricted substances.

3. **SCOPE:**

3.1. This policy applies to all business activities, including design, assembly, test, fabrication process, purchase, receiving, storage, and shipping activities needed to provide a Lead-Free end product to our customers.

4. **TERMS AND DEFINITIONS:**

4.1. The following terms and definitions are used throughout this policy:

4.1.1. **Banned Substances**

4.1.1.1. Substances that must not be contained in end products.

4.1.1.2. Substances subject to: (1) currently enacted legislation (as referenced in Section 5.5 "Reference Documents"), which prohibits or restricts its use or sale, requires reporting or subjects it to other regulatory requirements; or (2) customer prohibitions or restrictions (as a result of the referenced documents in Section 5.5)."

4.1.2 **Direct Material**

4.1.2.1. Any material utilized in final product/end product.

4.1.3 **Homogeneous Material**


4.1.3.1. Material comprised entirely of uniformly dispersed constituents throughout. For example, a plated leadframe consists of two homogeneous materials, the leadframe and plating material. A Dallas Semiconductor or Maxim product consists of several homogeneous materials.

4.1.4. **Inductively Coupled Plasma Testing**

4.1.4.1. An analytical test method, which uses an atomic emission spectrometer (AES) or mass spectrometer (MS) detector for analyzing, metals. An internationally recognized analytical method or regulatory required analytical method shall be used in ICP-MS or ICP-AES analyses for cadmium, chromium, lead and mercury.

4.1.5 **Intentionally Added**

4.1.5.1 Deliberate use in the formulation of a material or product where its continued presence is desired to provide a specific characteristic, appearance or quality. If banned or restricted substances are contained in materials or products purchased by suppliers or subcontractors, such substances must be disclosed if the supplier or subcontractor has knowledge of the presence of such substances.

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4.1.6 Packing Materials

4.1.6.1 Materials used to contain and protect a product during distribution. Examples include, trays, tubes, bags, tapes and reels. The term “*packing materials*” means *packing materials* used to contain and protect Dallas Semiconductor or Maxim products and **does not** apply to *packing materials* used by suppliers to ship materials, chemicals, equipment, and other items used by Dallas Semiconductor or Maxim.

4.1.7 Restricted Substances

4.1.7.1. Substances that should be monitored and limited from the end product. These substances are relevant for disclosure because they meet or exceed one or more of the following criteria: (1) provide economic value for end-of-life management, (2) significant environmental, health and safety interest; (3) would trigger hazardous waste management requirements; and (4) have a negative impact on end-of-life management.

4.1.8 Product / End Product

4.1.8.1 A product is a tangible item, including subparts such as silicon, plastic, metal, and ink, that is sold or provided as a sample to the customer.

4.1.9 Subpart

4.1.9.1 A subpart is a named unit within the product. Subparts of an integrated circuit include leadframes, plastics, plating compounds (i.e. lead finishes), bonding wire, molding compounds, silicon chips, etc.

4.1.10. Substance

4.1.10.1 A substance is a chemical element and its compounds that occur in the natural state or as produced by industry. Elements and compounds are assigned specific CAS (chemical abstract service) numbers (i.e. copper, lead, tin, silver, etc.).


4.1.11. Zero Concentration

4.1.11.1 The concentration of a substance is zero if it is below the detection limit of an internationally recognized analytical method. The concentration of a substance for which analytical data are not required is considered to be zero if the substance is not intentionally added.

5. APPLICABLE DOCUMENTS:

5.1. REFERENCE DOCUMENTS:

- 5.1 (EU) Directive 94/62/EC on Packaging and Packaging Waste
- 5.2 (EU) Directive 2000/53/EC on End-of-life Vehicles
- 5.3 (EU) Directive 2002/95/EC on Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment
- 5.4 (EU) Directive 2002/96/EC on Waste Electrical and Electronic Equipment
- 5.5 (Japan) The Law Concerning the Examination and Regulation of the Manufacture of Chemical Substances
- 5.6 (Germany) ChemVerbots
- 5.7 (Netherlands) Act on Substances Harmful to the Environment (WMS)
- 5.8 The Montreal Protocol on Substances that Deplete the Ozone Layer
- 5.9 (US) Clean Air Act, Title VI and 40CFR 82
- 5.10 (US) Toxic Substances Control Act, Inventory, and 40CFR 700-799
- 5.11 International Electronics Manufacturing Initiative – Joint Industry Guide 101

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The contents of the above legislation may be amended periodically. Therefore, it is necessary to confirm the latest versions of relevant laws and regulations. This list of legislation is subject to change in the event that new legislation, regarding banned or restricted environmental substances, is implemented.

6. **EQUIPMENT AND MATERIALS:**

6.1. **BANNED SUBSTANCE LIST**

6.1.1. The following is a summary listing of banned substances for reference in implementing this policy. Consult the Joint Industry Guide (JIG-101 for additional details of certain substances). When Zero is shown, this is equivalent to Not Detectable by best analytical method practices.

TABLE 1: BANNED SUBSTANCES (JIG-101 ANNEX A)

Substance	Threshold level (ppm)
Asbestos	0 - not intentionally added
Certain Azocolorants and Axodyes	0 – not intentionally added
Cadmium & Cadmium Compounds (1) Plastics & Rubber Other Direct Materials Other Packing Materials	Not intentionally added 75 See note (2)
Hexavalent Chromium or Hexavalent Chromium Compounds (1) Solder Other Direct Materials Packing Materials	Exempt uses only 1000 See note (2)
Lead / Lead Compounds Solder Other Direct Materials Packing Materials	Exempt uses only 1000 See note (2)
Mercury & Mercury Compounds (1) Direct Materials Packing Materials	1000 See note (2)
Ozone Depleting Substances (CFC's, HCFC's, HBFC's, Carbon Tetrachloride etc.) (3) Use in Manufacturing	Not intentionally added Shall not be used
Polybrominated Biphenyls (PBB's)	1000 - not intentionally added
Polybrominated Diphenyl Ethers (PBDEs)	1000 - not intentionally added 100
Polychlorinated Biphenyls (PCBs)	0 – not intentionally added
Polychlorinated Naphthalenes (more than 3 chlorine atoms present)	0 – not intentionally added
Radioactive substances	0 – not intentionally added
Certain short chain Chlorinated paraffins (see Annex F of JIG-101)	0 – not intentionally added
Tributyl tin (TBT) or Triphenyl Tin (TPT)	0 – not intentionally added
Tributyl Tin Oxide (TBTO)	0 – not intentionally added

Notes:

- (1) ICP analytical data must be provided upon request for cadmium, chromium, lead, and mercury.
- (2) The sum total concentration of cadmium, hexavalent chromium, mercury, and lead in packing material cannot exceed 100 ppm. Plastic and rubber packing materials cannot exceed the 5-ppm cadmium.
- (3) All substances subject to the Montreal Protocol or U.S. Clean Air Act Title VI are banned.

6.2. RESTRICTED SUBSTANCES LIST

6.2.1. The following is a summary listing of restricted substances for reference in implementing this policy. Each item must not be intentionally added or have a concentration above the PPM threshold limit of table 2 below.

Table 2: RESTRICTED SUBSTANCES (JIG-101 Annex B)

RESTRICTED SUBSTANCE	THRESHOLD LEVEL (PPM)
Antimony / Antimony Compounds	1000
Arsenic / Arsenic Compounds	1000
Beryllium / Beryllium Compounds	1000
Bismuth / Bismuth Compounds	1000
Brominated Flame Retardants (other than the banned PBB's or PBDE's of table 1)	1000
Nickel (external applications where skin contact could occur)	1000
Certain Phthalates (See details of JIG 101 annex F)	1000
Selenium / Selenium Compounds	1000
Polyvinyl Chloride (PVC) - See exemption of PVC IC shipping tubes in section 7.4	1000

7. GENERAL REQUIREMENTS:

- 7.1. Banned substances shall not be intentionally added to Dallas Semiconductor or Maxim products, direct materials and packing materials.
- 7.2. Each substance identified in this specification is considered banned, unless its usage qualifies for one or more of the exemptions outlined in (EU) Directive 2002/95/EC, Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment
- 7.3. The total concentration of cadmium, lead, mercury, and hexavalent chromium present in *packing materials* shall be <100 ppm. The cadmium concentration of plastic *packing materials* shall be <5 ppm.
- 7.4. The PVC (poly vinyl chloride) in shipping tubes is the only exempted use of PVC.
- 7.5. Concentrations of banned or restricted substances shall not exceed the concentrations listed in Table 1 and table 2 respectively.

- 7.6. All deliveries must include a supplier QA signed Certificate of Compliance (C of C) for material covered in the scope of this document stating explicitly that the material in the shipment complies with Dallas/ Maxim spec 10-0131 rather than a generic statement of only being ROHS compliant. Dallas/Maxim reserves the right to challenge the validity of any C of C at any time. If the C of C is challenged by Dallas/Maxim, the supplier must be able to provide an ICP analysis report which is less than 1 year old from an ISO-17025 certified lab within 5 calendar days of the request. Failure to support this requirement in a timely fashion can result in a reduction or cessation of new orders.
- 7.7. Each box or bag in a delivery of products, direct materials and packing materials covered in the scope of this document must be labeled by stamp or sticker as " ROHS COMPLIANT". Such markings must remain affixed to the material during storage at any Dallas Semiconductor or Maxim facility.

8. ACCEPTANCE:

- 8.1. All Dallas Semiconductor or Maxim products, direct materials and packing materials included in the scope of this specification that meet the threshold limits of tables 1 and 2 are acceptable and suitable for production usage and ultimately sale to our customers for Lead-Free End Products.

9. DISPOSITION OF MATERIAL:


- 9.1. Any Dallas Semiconductor or Maxim products, direct materials and packing materials included within the scope of this document that do not meet or are questionable as to meeting the threshold limits of tables 1 and 2 shall be placed on QA HOLD until lab test results or suitable documentation from the supplier is provided proving compliance to this specification.

10. DATA RECORDING:

- 10.1. C of C documents are to be archived with the PO Receiver or lot traveler as appropriate by the IQC department for a minimum of 5 years or as required by overriding applicable local, Federal or international regulations.

11. MAINTENANCE: N/A


12. APPENDICES: N/A

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REV	CHANGES MADE	DATE	INIT.
A	ECN# HQ-05-3536 Initial release	5-19-05	JD
B	<p>ECN MFN-06-1264 Identify material as 10-0131 compliant by C of C with each delivery to aide IQC.</p> <p>Require marking on each inner box or bag saying " ROHS compliant" to keep ROHS material identified in raw material stores. Simplify the long chemical name listing in current rev to the shorter generic and standardized listing established by iNEMI's/EIA Joint Industry Guide 101 (JIG A & B)</p>	09/11/06	RG

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