

## 1.0 PURPOSE

This document specifies the Controlled Substances requirements that suppliers to Microsemi Analog Mixed Signal Group (MSC-AMSG) must meet to be an approved supplier. The requirements specified by this specification are intended to meet applicable, published industry and government regulations regarding Environmentally-related Substances to be controlled. The requirements define two categories of materials:

- 1.1 Banned Materials
- 1.2 Restricted Materials

## 2.0 SCOPE

- 2.1 This document applies to products that are designed, manufactured and sold by MSC-AMSG
- 2.2 Materials, Substances and Chemicals that are procured by Microsemi Analog Mixed Signal Group or by third parties that contract to fabricate, assemble, test or pack MSC-AMSG products.

## 3.0 RESPONSIBILITY AND AUTHORITY

- 3.1 It is the responsibility of the Director of Quality & Reliability to initiate and maintain this procedure.

## 4.0 RELATED DOCUMENTS

- 4.1 SGE2109, Procurement Specification
- 4.2 SGE2231, Purchase Order Quality Requirements
- 4.3 SGQ1309, Approved Vendor List
- 4.4 SGQ1314, Purchase Order Review
- 4.5 SGA7204, Control Policy, Banned and Restricted Substances

## 5.0 REFERENCE DOCUMENT

- 5.1 Montreal Protocol 1997 (ODS)
- 5.2 Restriction of Hazardous Substances Directive (RoHS)

## 6.0 DEFINITIONS

- 6.1 Banned Material – A material that has been determined to be environmentally un-friendly and is subject to either a legal ban or a company or industry prohibition.
- 6.2 Intentionally Added – The manufacturer or purchaser knowingly uses the listed material during manufacture or incorporates the listed material into the product during manufacture. Trace concentrations of materials that are naturally occurring in raw

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SUPPLIER REQUIREMENTS,  
BANNED AND RESTRICTED SUBSTANCES

-	15411	10/03	D	18299	02/08
A	15526	10/03			
B	15912	06/04			
C	16416	03/05			

APPROVAL/DATE

ORIG.:

Q. A.:

OTHER:

DOC. CTR.:

MSC-AMSG UNCONTROLLED DOCUMENT

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- materials are not applicable.
- 6.3 Material – Refers to any of the listed substances, chemicals compounds, polymers or elements.
  - 6.4 Material Requiring Disclosure – A material for which disclosure is required.
  - 6.5 Product – A product manufactured by MSC-AMSG or by a sub-contractor for MSC-AMSG.
  - 6.6 Packing – Includes any box, container, reel, tray tube wrapper, cushioning, tape, inks or other material used to contain, store, and transport a product prior to its use by the purchaser.
  - 6.7 Restricted Material – A material that has been designated as environmentally un-friendly and is not to be used if at all possible. The use of a restricted substance in any material requires notification.
  - 6.8 CAS Number – A registry number assigned to a chemical or chemical compound by the Chemical Abstracts Services, Columbus, OH.
  - 6.9 Substances – Substances are chemical elements and their compounds. CAS numbers are provided for these substances where known.

## 7.0 REQUIREMENTS

### Banned or Restricted Materials Requiring Disclosure:

- 7.1 Banned Substances:  
Substances listed in Table I shall not be added to materials or used in the manufacture products procured by MSC-AMSG. A supplier Certificate of Compliance may be required stating that the listed substances are not present in materials or processes to manufacture materials supplied to MSC-AMSG. Analytical test reports demonstrating compliance may also be required.
- 7.2 Restricted Substances – For substances listed in Table II, a supplier must notify MSC-AMSG when either intentionally used or unintentionally present in material or products are supplied to MSC-AMSG.

Note: Microsemi Analog Mixed Signal Group is dedicated to supplying products that have no negative impact on the environment. Tables I and II are a summary listing of substances that are Banned or Restricted from materials supplied to Microsemi Analog Mixed Signal Group. To the best of our knowledge, Table I and II list banned or restricted materials and substances that may inadvertently or by design be used in products supplied to MSC-AMSG. However, SGQ1327, Tables I and II may not be comprehensive. It is the supplier's obligation to consult MSC-AMSG Specification SGA7204, "Control Policy, Banned and Restricted Materials". This document details a complete listing of banned or restricted substances which are restricted from use in MSC-AMSG products.

## 8.0 NOTIFICATION REQUIREMENTS

- 8.1 Microsemi Analog Mixed Signal Group (MSC-AMSG) shall be notified by the supplier if any of the banned or restricted substances are used in materials or products supplied. The substance shall be identified and information regarding the specific application and quantity by weight shall be forwarded to MSC-AMSG, attention to the Director of Quality Assurance.

**TABLE I, LIST OF BANNED SUBSTANCES**

SUBSTANCE	CAS	BANNED APPLICATIONS	COMMON USAGES
Lead and Lead Compounds	7439-92-1	Note 1	Solder
Cadmium and Cadmium Compounds	7440-43-9	Total Ban	
Mercury and Mercury Compounds	7439-97-6	Total Ban	
Hexavalent Chromium Compounds	18540-29-9	Total Ban	
Poly brominated Biphenyls (PBBs), Polybrominated byphenyl ethers (PBBEs) and Oxides (PBBOs), Organophosphorus Compounds  Polybrominateddiphenylethers (PBDE) Tererabromobisphenol A (TBBA)	Various	Total Ban	Flame Retardants
Perchlordecone (Mirex)	2385-85-5	Total Ban	Flame Retardent
Polychlorinated Biphenyls (PCBs), Polychlorinated Terphenyls (PCTs)  Polychlorinated Napthalenes (PCN)	133-36-3, 61788-33-8  70776-03-3	Total Ban	Capacitors, Transformers Lubricants, Paints
Asbestos and Asbestos materials	1335-21-4	Total Ban	
Arsenic and Arsenic Compounds	7440-38-2	Note 2	Dopant
Organic Tin	Several	Pigment	Disinfectants, Paint
Azo-based dyes and colorants	Several	Total Ban	
Brominated dioxins/furans, Chlorinated dioxins/furans	1746-01-6	Total Ban	
Chloroparafins (CP) Cl >50 wt %	85535-84-8	Total Ban	Plastic Additives, FI Retardent
Pentachlorophenol (PCP) and Creosotes	8001-58-9	Total Ban	Wood Preservatives
Radioactive Materials	NA	Total Ban	Detectors
Polivynylchloride (PVC)	9022-86-2	Vinyl Chloride Resin	Resin
Formaldehyde	50-00-0	HCCO	Preservatives
Perfluorooctanesulfonic acid	1763-23-1	PFOS	Photoresist, Scotchgard
Perfluorooctanic Acid	335-67-1	PFOA	Teflon

**TABLE II, MATERIALS REQUIRING DISCLOSURE**

REPORTABLE SUBSTANCE	CAS	APPLICATIONS	COMMON USAGES
Flame Retardant Substances Antimony Trioxide	1309-64-4	Substance added to plastics as a Flame Retardant	Flame Retardant
Nickel & Compounds	7440-38-2	Plating	Surface Passivation
Phthalates	28553-12-0	Plastic additive	
Chloroflourocarbons (CFCs) Hydrochlorofluorocarbons (HCFCs) Hydorfluorocarbons (HFCs), Halons, and Ozone depleting Substances banned per Montreal Protocol, Annex A, B, C.	75-69-1 75-71-8 75-72-9 354-56-3 76-12-0 354-58-5	Solvents, Refrigerants	
Beryllium	7440-41-7	Electronic Ceramic	Heat spreader
Note 1: Excludes the use of lead (Pb) in solder, electrical components and interconnect materials. Notification is required.			
Note 2: Total Ban except for doping in GaAs, which requires notification			