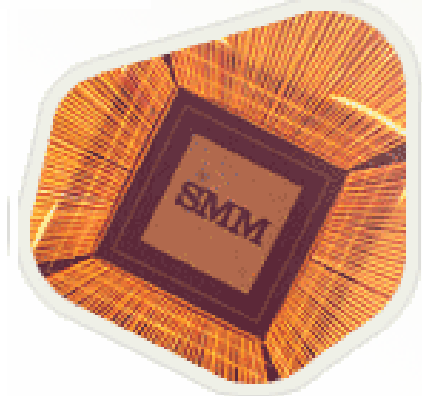




# GREEN PROCUREMENT MANUAL

## MALAYSIAN ELECTRONICS MATERIALS

MNADEV002  
Rev 6  
10 Mac, 2011



Issued by:  
Malaysian electronics Materials Sdn Bhd  
SHE Section / Banned Substance Committee

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## Green Procurement Manual

**Malaysian Electronics Materials Sdn Bhd** was incorporated in Malaysia in 1991. MEM is a wholly owned subsidiary of SMM (Sumitomo Metal Mining Co Ltd). MEM holds the distinction of being the first bonding wire manufacturer in Malaysia and the first such subsidiary facility of SMM outside Japan. Malaysia is a highly favourable location for industrial expansion owing to her investment friendly climates, supportive government policies, stable political environment and free from the major natural disasters. Coupled with vast pool of skilled workers, advanced infrastructure and excellent communications network, making it the ideal location for the establishment of MEM.



The facility	
Authorised Capital	RM10 million
Paid-up Capital	RM10 million
Site Area	11 052 sq. metres
Factory Area	5 700 sq. metres

### ***Introduction***

This Green Procurement Manual is established with the aim of providing a standardised platform for the understanding and implementation of a procurement program where the elimination, replacement and/or minimisation of certain banned substance in products could be carried out.

This 1<sup>st</sup> Edition, is launched with the initial objective of:

- Providing a standard communication tool for suppliers with regards to Green Procurement
- Providing a standard methodology for MEM personnel to manage suppliers especially with regards to control of banned substances.
- Providing a methodology for assessing (through auditing) suppliers to ascertain compliance to this standard has been achieved and is continuously maintained.

This Manual is established based on the requirements set in the EU Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment as well as requirements set out by the customers of MEM.

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## MEM Green Procurement Policy

In line with MEM's vision of promoting a sustainable business culture through its policies and systems, MEM also promotes the sustainability of the environment and resources that sustain the ecology.

Hence MEM is committed to promoting, implementing and educating employees and its suppliers of the importance of promoting Green Procurement Policies and Procedures when designing, purchasing, manufacturing and using materials. To implement the above, MEM shall:

1. Promote the use of environmentally and occupationally safe chemicals and products. These products should be the preferred substance of use.
2. Support the initiatives from the European Union through the implementation of measures to comply with the RoHS Directives.
3. Support the relevant international initiatives on banning substances that may adversely affect the health and safety of employees and/or pollute the environment. These include supporting and co-operating with our business partners' (customers, trading nations, suppliers etc) Green Procurement Programs and policies.
4. Continually educate and enhance the awareness and understanding among the key personnel of MEM on the importance of developing, implementing and promoting this initiative.

The implementation of this policy should see growth in various purchasing and manufacturing processes in the near future, and MEM will continually keep abreast with the changes in technology, international laws and practices to ensure our continued support to such initiatives.

08, December, 2010  
Shah Alam, Malaysia

**YOSHITAKA AKIYAMA**  
Managing Director  
Malaysian Electronics Materials Sdn Bhd

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## Message from the Managing Director of MEM



**Our organization is committed to ensuring that we minimize our environmental as well as our occupational health and safety impacts wherever possible, while simultaneously providing value to our customers and enhancing the life-quality of the communities in which we operate. Therefore, where feasibly practicable and cost-effective, we need to incorporate environmental, occupational health and safety considerations into the procurement of our goods and services based on selected criteria. These include the commitment to comply with the directives set out by our customers and the region of operation.**

While this Manual is now inclined towards complying to the RoHS requirements set out in the European Union, we are certain that this Manual will set the platform for us to incorporate more requirements from the other countries, all with the common goal of preserving the environment and providing a safe and healthier workplace for the people.

This Green Procurement Manual has been prepared to equip suppliers, managers and operational executives with the information to better understand and integrate the specified criteria into our current procurement process. The Guide includes a checklist for auditors to continually assess the performance and compliance of our suppliers to these requirements.

I would strongly recommend all our employees to familiarize with this Manual and apply them consistently in our day-to-day operations. Please do not hesitate to contact our RoHS team or email at **[banned\\_substance@memwire.com](mailto:banned_substance@memwire.com)** for questions, concerns or feedback arising from this manual.

08. December, 2010  
Shah Alam, Malaysia

A handwritten signature in black ink, appearing to read 'Yoshitaka Akiyama'.

**YOSHITAKA AKIYAMA**  
Managing Director  
Malaysian Electronics Materials Sdn Bhd

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## Introduction to Green Procurement and the RoHS Regulation

Many organizations worldwide are making an effort to purchase products and services that are less harmful to local and global environments. Both public and private sector organizations worldwide are implementing purchasing practices that include environmental (and social) considerations — green procurement. These activities are part of a broader movement toward more sustainable forms of production and consumption.

Organizations are realizing the benefits of green procurement practices such as cost savings from reduced energy consumption, resource use, and material management. They also reap more qualitative benefits such as improved image and achieving policy/program objectives. The awareness of these opportunities is a key factor driving the growth of green procurement around the globe.

Leading multinational corporations or MNCs have demonstrated significant progress in greening procurement practices. These organizations are working to improve the environmental performance of their operations and products and green procurement has been a logical extension of this work. In the last two decades, they have adopted green procurement practices for specific products (e.g., recycled-content office paper, renewable energy, paints, cleaners, etc.), but are currently also looking at the materials, substances and chemicals they purchase that go into the products and services they provide.

This supply chain approach looks beyond the company's "gates" in an ongoing effort to reduce costs and risk. Leading companies are using life-cycle assessment and material tracking tools to identify materials, substances and chemicals in their products that pose significant environmental, health and safety risks and re-design their products to reduce or eliminate such materials. This is seen as a means towards improving their products and operations from environmental perspective to reduce risk, total cost of ownership while improving supply chain performance.

This effort is further fuelled by the RoHS Directive which is set to kick into compliance on 1<sup>st</sup> July 2006. The directives apply to all EEE containing hazardous substances put on the European Union Single Market on or after 1 July 2006, which falls into any of the eight broad categories listed in Annex A of the Directive. None of the "homogeneous materials" within compliant products must contain the six restricted substances at concentrations above the "maximum concentration values".

At MEM, in line with the requirements of our customers and corporate office, will be employing the use of the following two approaches to comply:

1. Obtain declarations of compliance for materials, components and other parts from suppliers.
2. Selected analysis.

The focus at present remains on the use of the 6 restricted or banned substance, namely;

- Mercury - (Hg)
- Hexavalent chromium - (Cr(VI))
- Cadmium - (Cd)
- Polybrominated biphenyl flame retardants - (PBB)
- Polybrominated diphenyl ether flame retardants - (PBDE)
- Lead (Pb)

With this the Manual works on the principal for restricting the use of the above 6 substances while monitoring (through elimination, reporting, declaration) of the use of other known hazardous substances.

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## Chapter 0 How to Use This Manual

### **Introduction to RoHS and Green Procurement Manual**

To be used by all parties as a general guide to RoHS and the concept of Green Procurement

### **Chapter 1 - Introduction**

Outlines the common terms and definitions used in this manual as well of that in the RoHS Directive.

### **Chapter 2 - Suppliers Guidance Document**

To be used mainly by suppliers in order to know the method of compliance required by MEM

### **Chapter 3 - MEM Guidance Document**

To be used only by MEM staff in managing RoHS compliance issues and suppliers pertaining to this Green Procurement.

### **Appendices**

Provides the list of banned substances and other forms required to be used by suppliers and MEM in complying to the requirements of this Manual

### **Information**

Contact details of MEM personnel are provided for the use of readers / users of this Manual

### **Using the Manual**

Suppliers are to comply to requirements as described in Chapter 2. The required list, maximum concentration values, test methods, declaration forms etc are provided in the respective Appendices.

Chapter 3 is only for the use of MEM personnel and suppliers need not necessarily refer to this Chapter.

Updates on this manual may be made available from time to time. Information on the changes will be disseminated to all suppliers and other interested parties as well as on the MEM website. The Manual shall also be available for download on the internet.

Forms can be printed from this manual or reproduced in a similar format.

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## 1.0 Terms and Definition

i. RoHS

Refers to the European Union Directive on the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

ii. Banned Substance

Substance that cannot be found / available in the products of MEM. The list of these banned substances is available in Appendix 1.

iii. Compliant product

Products or part of it that is within the scope of this Manual i.e. none of the "homogeneous materials" supplied must contain the restricted substances at concentrations above the defined "maximum concentration values" and must not contain any other known hazardous substance identified in this manual

iv. Homogeneous Material

'Homogeneous material' means a material that cannot be mechanically disjointed into different materials.

The term 'homogeneous' is understood as "of uniform composition throughout", so examples of "homogeneous materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

*Source: RoHS Regulations - Government Guidance Notes (Revised Draft August 2005)*

v. High Risk Component / Material / Part / Product

Supplied products or parts that is likely to contain a banned substance. This is based on existing knowledge, industry know how or previous inspection.

vi. Maximum Concentration Value (MCV)

The maximum allowable quantity / concentration of a particular substance in a homogenous material.

vii. 4M Change

Any changes in terms of Man, Method, Materials, Machines and Environment occurred in a supplier site. The changes may directly or indirectly affect the product sent to MEM. The changes criteria will be discussed further in this manual.



### **1.1 Scope**

The scope of this manual covers all products and parts supplied to MEM for the purpose of manufacturing its product that will eventually be sent to its customers, including that of packaging material.

This manual specifies requirements to reduce waste harmfulness, bans of six substances above the noted concentration levels, in electrical and electronic equipment that applies to :-

- a. MEM Critical Suppliers\***
- b. MEM Customer

**\* for the definition of the Critical Supplier, please refer to Critical Supplier List (for RoHS only) – doc # LSBPPU002**

Note: where auxiliary parts sent to customers are not used for shipment to the controlled market (i.e. EU), MEM and its suppliers may request for exclusion to comply to the requirements set forth in this document. The exclusion is subject to acceptance by their respective customers.

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## Chapter II Suppliers Guidance Document

### **2.1 What to Comply**

All suppliers are to ensure that the products and/or parts supplied to MEM does not contain any trace of banned substance as listed in Appendix 1.

*Note: where applicable, the Maximum Concentration Value (MCV) shall not be exceeded.*

### **2.2 How to Demonstrate Compliance**

The 3 Step approach is required as follows:

#### Step 1: Self Declaration

All suppliers are required to sign an Environmental Agreement to document its commitment in supporting MEM and its customers initiatives to remove and/or reduce the use of banned and hazardous substances from the products and production process. (See Appendix 5)

Subsequently, all suppliers are to fill the Certificate of Compliance to MEM Green Procurement indicating the commitment of non-use of the listed banned substance as listed in Appendix 1. (See Appendix 2)

From time to time, suppliers will also be required to fill up Environmental Commitment Survey (see Appendix 6).

*Important Note: The declarations must include all individual materials, not for whole components (due to the homogeneous material requirement.)*

#### Step 2: Testing Data

Suppliers are required to demonstrate using applicable testing methods that the products and/or parts supplied are free from the selected banned substance. Testing is only required for the following substance (See Appendix 1). Type of testing required is also defined in the same table.

Note: only accredited laboratories are to be used. Recommended laboratories are included in Appendix 3. Other laboratories may be considered upon consultation with MEM SHE Section Personnel.

#### Step 3: Assessments

A two-prong approach will be used.

Suppliers will be required to submit the Environmental Management System Self Audit (see Appendix 7) form to MEM on an annual basis. Schedule / date for submission will be advised individually. (usually 1 month prior to scheduled audits (if any) by MEM personnel.)

MEM will also conduct audits or assessments on site for its suppliers once in two years. This assessment / audits will be planned and informed in advance

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### 2.3 What types of inspections are required?

Inspections are required to provide quantitative data to demonstrate that a particular substance does not contain any of the hazardous substance beyond its Maximum Concentration Value (MCV).

Different substance may require a different test method. For reference of the MEM Approved test methods, please refer to Appendix 1 and Appendix 8.

The frequency of these tests is explained in the following key point.

### 2.4 What is the Frequency for the Inspections?

Initially\* - complete detailed laboratory inspection report

New suppliers - complete detailed laboratory inspection report

MEM approved suppliers – 5 years once or whenever required

Whenever there is a significant change in the process, materials, composition etc that may result in differing levels of substances in the product or part - latest data required within 4 weeks of the change

*\* refers to suppliers that have not provided info at the time of the publication of this Manual*

### 2.5 In totality, what needs to be submitted?

No	Item	At start of transaction	Frequency of submission	Form
1	Environmental Agreement	Required	Once only	Appendix 5
2	Certificate of Compliance to MEM Green Procurement Manual	Required	Whenever there is a new part / product	Appendix 2
3	Inspection ICP Data by supplier for packaging and commodities	Required	Initial submission required and 5 years once or whenever required	
4	Environmental Commitment Survey	Required	12 months once or whenever required	Appendix 6
5	Environmental Management System Self-Audit	Required		Appendix 7
6	Banned Substance Non-Compliance Report	When incident arises		Appendix 4
7	Inspection ICP Data by MEM for Au wire, nickel paste and copper wire	Required	12 months once or whenever required	

### 2.6 What to do if the Tests Fail?

The product or part **must not** be delivered to MEM.

If a similar batch has been delivered to MEM, notify MEM Ban Substance committee or SHE Section immediately (by email / fax / call) followed up with the Form in Appendix 4. The supplier must carry out a recall of the non-compliant products immediately.

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## **2.7 Product Segregation**

Products/parts that are not "green / compliant " should be stored separately and labeled for clear identification and traceability.

Under no circumstances "green / compliant " products should be stored together with products that have not undergone the changes required. This identification could be in the form of a different / revised part number.

Where non-conformity have been detected, non-conforming products shall be stored separately from conforming products. Non-conforming products shall be clearly labeled.

MEM reserves the right to perform in-situ audit with minimum notice when any non-conformity is detected.

## **2.8 Records Retention**

Records arising from this manual shall be maintained as per MEM - Record Retention Listing – LSQADC001. Records kept must be legible and retrievable whenever required.

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### 3.1 MEM Supplier Management

- All suppliers are managed in line with the following procedures:  
*Chemical Management System Procedure (PRADSH008)*  
*Supplier Evaluation and Development (PRADPU002)*

### 3.2 MEM Supplier Audit and Survey

#### 3.2.1 Environmental Management System Self Audit (Appendix 7)

- Suppliers will be reminded of the Environmental Management System Self Audit once in every 12 months.
- Suppliers are required to respond to the self-audit within 2 weeks of receiving the reminder.
- Where MEM is to audit the supplier at site once in 2 year, MEM is to ensure the Self-Audit form has been sent in by the supplier. Audits shall be a process of verification of the Self Audit carried out by the supplier.
- Where site audits are not carried out, MEM may request additional documents to support the answers provided in the Self-Audit form.
- All audits shall be planned and communicated to the supplier at least 2 weeks prior to the audit, except when a non-conformity has been detected and/or notified to MEM.

#### 3.2.2 Environmental Commitment Survey (Appendix 6)

- Suppliers will be reminded of the Environmental Survey once in every 12 months.
- Suppliers are required to respond to the Survey within 2 weeks of receiving the reminder.
- The Survey is to provide an overview of the Suppliers environmental progress and initiatives in the last 12 months.



### **3.3 MEM Customer Compliance**

#### **3.3.1 What to Comply**

- MEM is committed to complying to requirements of its customers that the products and/or parts supplied to MEM does not contain any trace of banned substances as listed in Appendix 1.

Note : where applicable, the Maximum Concentration Value ( MCV ) shall not exceeded

#### **3.3.2 How to Demonstrate Compliance**

- MEM is required to demonstrate using applicable testing methods that the products and/or parts supplied are free from the selected banned substances. Testing is only required for the following substance ( See Appendix 1 ). Type of testing required is also defined in the same table.

Note : only accredited laboratories are to be used. Recommended laboratories are included in Appendix 3.

- Where non-compliance of supplied product are detected, MEM will immediately arrange for a recall of products following the batch/lot number of the affected product.
- MEM shall advise customers through email/fax/telephone call and followed up using the Banned Substance Compliance Report (Appendix 4) within 7 working days.
- The Banned Substance Committee through the Marketing personnel shall communicate this information to the customer.
- Where actions to be taken are not feasible due to technical, resource availability, financial or other reasons, MEM SHE Section shall carry out the necessary communication to the customer to advise them of the matters arising.
- A discussion with the Customer may be held to come up with interim solutions or alternative solutions pertaining to such matters.
- However, if there is any environmental non-conformance detected for the in-house material will also be notified to related customer for acknowledgement.

#### **3.3.3 What types of inspections are required ?**

- Inspection are required to provide quantitative data to demonstrate that a particular substance does not contain any of the hazardous substance beyond its Maximum Concentration Value (MCV).

Different substance may require a different test method. For reference of the MEM Approved test methods, please refer to Appendix 1 and Appendix 8.

The frequency of these tests is explained in the following key point.

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### 3.3.4 What is the Frequency for the Inspections ?

Every 12 ( twelve ) months once - latest data required;

Whenever there is a significant change in the process, materials, composition etc that may result in differing levels of substances in the product or part – latest data required within 4 weeks of the change.

Note : Refer to ICP test list – form no : FRADPU008

### 3.4 MEM Supplier Compliance

- MEM shall ensure compliance by supplier is met pertaining to documents and records required to be submitted.
- Results of the Self-Assessment Audit and the receipt of forms (attached in the Appendices) shall be presented during the SHE Management Review Meeting once a year.
- Results of the audit and return of the forms shall form for the basis for supplier performance, besides the quality-related criteria.
- Where non-compliance are detected, MEM is to ensure that the Banned Substance Compliance Report (Appendix 4) is submitted by the supplier to MEM within 7 working days.
- In the event that suppliers refuse to co-operate with MEM in terms of testing, return of data/forms/self-audit/surveys, MEM SHE Section shall initiate a second round of official communication to the superior at the supplier's organization.
- Should the above be unsuccessful, a meeting with the suppliers shall be held to discuss the matters or concern.
- In the event all discussions fail, the Managing Director of MEM shall be consulted and the decision on continuing business shall be at the discretion of the Managing Director of MEM.

### 3.5 MEM Green Procurement Manual Procedure

#### 3.5.1 Control of the Manual

- The MEM Green Procurement Manual shall be reviewed at least once in every 12 months for suitability and updates in regulations, Maximum Concentration Value (MCV), testing technology, new requirements from customers etc.
- The Manual may be updated from time to time should the need arise. The manual shall use the new revision number

Example: MEM Green Procurement Manual Revision :1

Revision : 2

Revision : 3

Revision : 4

Revision : 5

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- The Manual is a Controlled Document. Manuals issued externally shall be updated with changes, however there is no requirement to retrieve back previous versions as electronic copies shall be used.
- When possible, this Manual shall be made available on MEM's website ([www.memwire.com](http://www.memwire.com)) for download.

#### 3.5.2 Records Management

- All records arising from the implementation of this MEM Green Procurement Manual shall be filed as per MEM - Record Retention Listing – LSQADC001.

#### 3.5.3 Distribution

- The Manual shall be provided to all suppliers and any other interested parties. When possible, this Manual shall be made available on MEM's website for download.
- It shall be the responsibility of MEM SHE Section to ensure the availability of this manual to the relevant interested parties including the suppliers. The availability may be made through electronic copies (compact discs, email attachments), through hard copies or by providing the URL for downloads on the internet.
- The Suppliers shall be responsible to receive a copy of the Manual and comply with the requirement set.
- The acknowledgement shall be made by supplier by returning the cover page of this manual with authorized signature and acknowledged date. The acknowledgement must be made within 14 working days upon received by supplier.

#### 3.5.4 Support

- To assist the understanding of the suppliers of the MEM Green Procurement Manual, MEM shall conduct a briefing on the Manual at no cost to the suppliers upon request either through online or in house training.
- MEM SHE Section shall also act as the reference point pertaining to any technical information required arising from the use of this Manual. The contact details are made available in the Manual.

### 3.6 **Control of Non-Conforming Materials and Product**

- All suppliers non-conforming materials and products that are detected to have more than the allowable Maximum Concentration Value (MCV) of the listed banned substance, or traces of any other banned substance listed in Appendix 1 are found, the materials and products will be managed in line with the following procedures:  
*Control of Non-Conforming Materials and Product (SDQAQS002)*

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### 3.7 4M Management Control in Supplier side

#### 3.7.1 Purpose

- To ensure that facilities, activities or job functions undergoing change in supplier side shall be notified to MEM in order to identify the impact on product compliant, against the current requirement in this manual

#### 3.7.2 The 4M changes criteria shall include any changes that has direct or indirect impact to product contamination or mixing product towards RoHS and other banned substances compliance, in terms of below two categories :

A. Major change – a change that has significant and direct impact to product contamination, RoHS or other banned substance compliance, such as below;

- Change of plant and equipment
- Change of manufacturing processes including the operating procedures
- Change in design and construction
- Change in maintenance procedure
- Changes in MCV
- Changes in Legal & other requirements
- Changes in type of chemical used
- New chemical purchased
- Change in raw materials contents related to banned substances
- Change in packaging materials
- Change of supplier for direct material (as per describe in Supplier Chain)

B. Minor change – a change that has insignificant or indirect impact to product. Only involve on internal change, such as below;

- Organization structures and responsibilities
- Personnel training or competency requirements

#### 3.7.3 In the event of any changes as per above clause, it shall be notified to MEM as per below :

A. For major change – the change need to be notified to MEM within 7 working days and supplier shall get approval from MEM prior to the change since the change will affect the product conformity sent to MEM

B. For minor change – the change need to be notified to MEM within 30 working days. MEM will acknowledge the change.

#### 3.7.4 If the change is violating the requirement in this manual, supplier will be advised to take necessary action until the requirement is being fulfilled again.



- 3.7.5 The notification process shall be made using supplier official letter; must comply with these following information details :
- Supplier product identification such as serial number/part number/ related process/others related
  - Proposed date of implementation
  - Issued by
  - Scope of change
  - Purpose of change
  - Description of change (e,g: new address, present chemical used, new chemical)
  - Justification of change and effective date
  - Phase in & out plan
- 3.7.6 As for the major changes, the approval process shall be made using MEM formatted form – Request for MEM approval (Refer to Appendix 10)

*Remarks : For 4M Management Control notification process from MEM to MEM's customers , refer to PRADEV004 (Management of Change Procedure) & PRQAQS008 (Management of Change Control)*



## APPENDIX 1 - List of Hazardous Substance Not to be Present in Products / Parts Supplied to MEM

No	Substance not to be present in products / parts supplied to MEM	Compliance to	Status <sup>1</sup>	Maximum Concentration Value (MCV)	Is laboratory test report required? <sup>2</sup>	Type of Test Recommended <sup>3</sup>
1	Mercury - (Hg)	RoHS	Banned	2 ppm	Yes	Inductively Coupled Plasma Luminous spectrophotometer (ICP-AES, ICP-OES) Atomic Absorption Spectrophotometer (AAS) Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS)
2	Hexavalent chromium - (Cr(VI))	RoHS	Banned	1 ppm	Yes	Inductively Coupled Plasma Luminous spectrophotometer (ICP-AES, ICP-OES) Atomic Absorption Spectrophotometer (AAS) Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS) Ion Chromatography
3	Cadmium - (Cd)	RoHS	Banned	2 ppm	Yes	Inductively Coupled Plasma Luminous spectrophotometer (ICP-AES, ICP-OES) Atomic Absorption Spectrophotometer (AAS) Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS) EDX / SEM
4	Polybrominated biphenyl flame retardants - (PBB)	RoHS	Banned	ND	Yes	High Performance Liquid Chromatography (HPLC) Ion Chromatography High Resolution Gas Chromatography-mass Spectrometry (HRGCMS)
5	Polybrominated diphenyl ether flame retardants (PBDE)	RoHS	Banned	ND	Yes	High Performance Liquid Chromatography (HPLC) Ion Chromatography High Resolution Gas Chromatography-mass Spectrometry (HRGCMS)
6	Lead (Pb)	RoHS	Banned	2 ppm	Yes	Inductively Coupled Plasma Luminous spectrophotometer (ICP-AES, ICP-OES) Atomic Absorption Spectrophotometer (AAS) Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS) EDX / SEM
7	White, yellow and red phosphorus	Customer	Banned		No	
8	Benzidine and its chlorides	Customer	Banned		No	
9	4-aminodiphenyl / 4-aminodiphenyl and its chlorides	Customer	Banned		No	

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No	Substance not to be present in products / parts supplied to MEM	Compliance to	Status <sup>1</sup>	Maximum Concentration Value (MCV)	Is laboratory test report required? <sup>2</sup>	Type of Test Recommended <sup>3</sup>
10	4-nitrodiphenyl and its chlorides	Customer	Banned		No	
11	Rubber cement containing benzene, where benzene accounts for more than 5% of the rubber cement solvent (incl diluting agent)	Customer	Banned		No	
12	PCBc / PCTs	Customer	Banned		No	
13	Polychlorinated naphthalenes (with 3 or more chlorine atoms)	Customer	Banned		No	
14	Hexachlorobenzene	Customer	Banned		No	
15	Aldrin	Customer	Banned		No	
16	Dieldrin	Customer	Banned		No	
17	Endrin	Customer	Banned		No	
18	DDT	Customer	Banned		No	
19	Bis(tributyltin) oxide	Customer	Banned		No	
20	N,N'-ditolyl-p-phenylenediamine	Customer	Banned		No	
21	2,4,4-tr-tert-butylphenol	Customer	Banned		No	
22	Toxaphene	Customer	Banned		No	
23	Mirex	Customer	Banned		No	
24	DBBT	Customer	Banned		No	
25	DBB	Customer	Banned		No	
26	Pentachlorophenol	Customer	Banned		No	
27	Monomethyl-tetrachloro-diphenyl methane	Customer	Banned		No	
28	Monomethyl-dichloro-diphenyl methane	Customer	Banned		No	
29	PBBs	Customer	Banned		No	
30	PBDEs	Customer	Banned		No	
31	Asbestos types	Customer	Banned		No	
32	Ozone depleting substance (substance cited in the Montreal protocol)	Customer	Banned		No	
33	Chlorinated Organic Solvents	Customer	Banned		No	
34	Cholomethyl Methyl Ether	Customer	Banned		No	
35	Ethylene Oxide, Oxirane	Customer	Banned		No	
36	Dianisidine and its salts	Customer	Banned		No	
37	Dichlorobenzidine and its salts	Customer	Banned		No	
38	O-tolidine and its salts	Customer	Banned		No	
39	Threosulfan	Customer	Banned		No	

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No	Substance not to be present in products / parts supplied to MEM	Compliance to	Status <sup>1</sup>	Maximum Concentration Value (MCV)	Is laboratory test report required? <sup>2</sup>	Type of Test Recommended <sup>3</sup>
40	4-Nitrodiphenyl and its salts	Customer	Banned		No	
41	Bis (2-Chloroethyl) Ether, Dichloroethyl Ether	Customer	Banned		No	
42	Bis (2-Chloroethyl) Ether	Customer	Banned		No	
43	Arsenic & Arsenic Compounds	Customer	Banned		No	
44	Beryllium and Beryllium Compounds	Customer	Banned		No	
45	Benzidine and its salts	Customer	Banned		No	
46	Benzene and its salts	Customer	Banned		No	
47	Benzotrichloride	Customer	Banned		No	
48	Polychlorinated naphthalene	Customer	Banned		No	
49	Organic tin compounds, Tributyl Tin, Triphenyl Tin Compounds	Customer	Banned		No	
50	Azo Compounds (for parts in contact with human)	Customer	Banned		No	
51	Formaldehyde (for timber products)	Customer	Banned		No	
52	TBBP-A-bis	Customer	Banned		No	
53	Radioactive Substance	Customer	Banned		No	
54	Chlorinated Paraffines (used for cabinets or Printed Wiring Boards)	Customer	Banned		No	
55	Ethylene Glycol Ethers	Customer	Banned		No	
56	Halogenated Dioxins and Furans	Customer	Banned		No	
57	Polyvinyl Chloride (PVC)	Customer	Banned		No	
58	n-Hexane	Customer	Banned		No	
59	Residual Monomers	Customer	Banned		No	
60	Hexachlorocyclohexane	Customer	Banned		No	
61	Hexachlorobenzene (HCB)	Customer	Banned		No	
62	Chlordanes	Customer	Banned		No	
63	Toxaphenes	Customer	Banned		No	
64	Cobalt and cobalt compounds	Customer	Banned		No	

<sup>1</sup> either Banned / Controlled / Monitored

<sup>2</sup> where it is not required, MEM reserves the right to request for laboratory tests report as and when required by MEM or its customers

<sup>3</sup> other methods may be acceptable upon agreement and approval from MEM SHE Section personnel. For detailed requirement of the method of testing, please refer to Appendix 8

Customer refers to customers of MEM

HM refers to homogenous material

MCV refers to Maximum Concentration Value

ND refer to not detectable

ppm refers to parts per million

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## APPENDIX 2 - Certificate of Compliance to MEM Green Procurement Manual

### **Certificate of Compliance to MEM Green Procurement Manual**

*(to be filed in for every new part or product before shipment begins)*

We on behalf of *(insert name of company)* \_\_\_\_\_

\_\_\_\_\_

hereby acknowledge that all parts and products supplied to MEM (Malaysian Electronics Materials Sdn Bhd) complies with the requirements set out in the MEM Green Procurement Manual which includes the non-use of certain hazardous substances as listed in Appendix 1 of the said manual.

The parts and products supplied to MEM are as listed overleaf.

We *(insert name of company)* \_\_\_\_\_

\_\_\_\_\_

are committed to preserving the environment in line with the directions set out in the EU RoHS Directives and other requirements in order to minimize the risk to the environment and the occupational health risk caused by the manufacture, use and/or disposal of electrical and electronic products.

We confirm receiving, understanding and complying to the requirements set out in the MEM Green Procurement Manual.

Name of Person Responsible:

Designation:

Tel no.: / Fax no. / Email add:

Company Stamp:

Date:

\*\*\*\* \_\*\*\*\*\*\*

Name of Managing Director / General Manager:

Signature:

Date:

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## APPENDIX 3 - Recommended laboratories

### Laboratory Criteria

1. Accredited at least by the country's national laboratory accreditation scheme.
2. Qualified to ISO/IEC 17025

### Recommended Laboratories

Name	Address	Contact Numbers	Contact Person
SGS (Malaysia) Sdn Bhd	Wisma SGS Lot 603, Jalan Lebu Raja Lumu, Kaw. Perindustrian PKNS, Pendamaran 42000 Port Klang, Selangor	Tel:603-3165 2320 Fax:603- 3165 2324 Handphone: 012-3300373	Ms Joey Feng Joey.feng@sgs.com
NM laboratory Sdn Bhd	Bukit Mertajam, Pulau Pinang , Malaysia	Tel: 604-3902085 Fax:604-3902086 Handphone: 012-4006511	Mr.Reuben Ong Hock Heng hhong@nmlab.com.my

*Note:*

*This is list is non-exhaustive. Suppliers may request the use of other laboratories upon consultation with MEM SHE Section Personnel.*



## APPENDIX 4 - Banned Substance Non-Compliance Report

### Banned Substance Non-Compliance Report

#### Contact Information (of reporting party)

Company	
Case Contact Person	
Email / Tel / Fax	
Date & Time of Report	

#### Description of Non-Compliance

Non-Compliance	
Part no affected	
Batch no	

#### Substance Involved

Failed Parameter	
Failed Item Sent for Delivery?	Yes / No (if yes, indicate delivery date / time / batch)
Other info?	

#### Test Details

Result of Tests (value)	
Test Date	
Testing Laboratory	
Test method	
Test Report No. (attach test report)	

#### Remedial Actions (by reporting party)

Immediate Action	
Corrective Action (allowed 7 days to reply in detail)	

#### Acknowledgement (Supplier) (by reporting party)

Reported by (Name / Signature of reporter)	
Acknowledged by sender management (Name / Signature of GM / MD)	
Company Stamp	

#### Acknowledgement (Customer) (MEM / customer to MEM)

Received by Customer (Name / Signature / Date / Time)	
--	--

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## APPENDIX 5 - Environmental Agreement

*This document demonstrates the commitment of our suppliers to our Environmental Policies including that of this MEM Green Procurement Manual. This document should be reproduced on the suppliers letter head document.*

### **Environmental Agreement**

From:

**The Managing Director**

(insert name of company and address)

Dated:

**The Managing Director**

**Malaysian Electronics Materials Sdn Bhd**

Lot 5, Jln Ragum 15/17

40200 Shah Alam,

Selangor Darul Ehsan

Malaysia

We hereby declare our commitment to support all Green Procurement initiatives and other SHE initiatives by MEM and its customers in the name of protecting the quality of the environment as well as the safety, health and welfare of people who are affected with our products directly or indirectly.

We reiterate our commitment to comply with the requirements from MEM as outlined in the MEM Green Procurement Manual and other requirements that are informed to us by MEM from time to time. In line with the directive from the European Union on the Restriction of Use of Certain Hazardous Substance in Electronic and Electrical Products, we shall ensure that all our products, parts and/or material supplied to MEM and/or its customers are free (or not exceeding allowable Maximum Concentration Values) from any of the substances that are banned as listed in Appendix 1 of the MEM Green Procurement Manual or other requirements as advised by MEM from time to time.

In the event that non-compliances are found, we shall take all means to ensure that these products do not reach MEM and/or its customers and/or the market. We shall also work hand in hand with MEM, including incurring of expenses where agreed to, to prevent, minimize and/or mitigate any exposure of this non-compliant products to consumers.

This agreement was agreed by our Management and is signed by a representative from the Top Management of (insert name of company).

Dated:

Signature:

Name:

Company Stamp

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## APPENDIX 6 - Environmental Commitment Survey

(to be submitted to MEM SHE Section on an annual basis or whenever required to)

Company			
Address			
Tel no.		Fax. No.	
Name of Person Responsible			
Email address			
Date			

Survey Criteria	Answer	Remarks
<b>Certification</b>		
Has your organization achieved the ISO9001:2000 certification?	Yes / No	if yes, please attached the certificate. If no, please indicate tentative date of certification here:
Has your organization achieved the ISO14001:2004 certification?	Yes / No	if yes, please attached the certificate. If no, please indicate tentative date of certification here:
<b>RoHS Directive</b>		
Does your organization have policies or procedures for managing chemically hazardous substance in line with the RoHS regulation ?	Yes / No	If yes, please attach the policy or procedure
What are the main items among the 6 banned substances that were present in your organization's product in the last 6 months?		List items:
Have efforts been taken to eliminate / substitute or reduce the use of the above banned substance?	Yes / No	Please indicate action taken:
Has your organization conducted any training on understanding the RoHS Directive and other related environmental requirements pertaining to the banned substance in your organization in the last 6 months?	Yes / No	If yes, please indicate title of training and attach attendance list.
<b>Environmental Management</b>		
Does your organization use the services of approved contractors for the disposal of scheduled or toxic wastes?	Yes / No	
Does your organization maintain and comply with the latest environmental local legislation?	Yes / No	
Does your organization carry out the monitoring for waste disposal, water effluent discharges, air emissions etc?	Yes / No	
<b>Environmental Corporate Governance</b>		
Does your organization produce annual environmental reports or Sustainability Reports?	Yes / No	If yes, please submit one.
Has your organization carried out environmental awareness activities to the general public (non-staff)?	Yes / No	If yes, please indicate title of activity.
Has your organization planned any 5-year "Green Projects" on environmental preservation or protection?	Yes / No	If yes, please indicate name of project.

Filled in by (supplier):		Received by (MEM):	
Date:		Date:	

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## APPENDIX 7 - Environmental Management System Self-Audit

Score

1 - Not complying

2 - Partial compliance

5 - Full Compliance

No	Assessment Criteria	Criteria Detail	Score	Remarks
<b>Environmental Management System Certification</b>				
1	Is the organization certified to ISO14001:2004	Acceptable till May 2006 if certification is only ISO14001:1996 Copy of certificate available		
<b>Awareness &amp; Training</b>				
2	Has the organization carried out programs to increase the awareness and understanding of personnel on environmental issues?	Training plan / schedule / attendance available Consist of environmental related training		
3	Has the organization carried our training on RoHS requirements to relevant personnel?	Training plan / schedule / attendance and training material available. Training to be specific on RoHS and/or banned substance management		
4	The concept of environmental protection and preservation and pollution prevention is generally understood? (Environmental Policy Implementation)	Employees interviewed are able to related. Sample to cover production and office personnel of various ranks and roles. Records of the interviews (attendance at least) to be made present.		
5	Employees are made aware of actions to be taken in the event of environmental non-conformities?	Assess based on non-conformities pertaining to out-of spec (above MCV) for banned substance. Knowledge of communications channel, MEM GP Manual, local company procedures etc demonstrated. Previous actions taken on this issues could also be means of evidence of awareness.		
<b>Communication</b>				
6	Supplier organization (auditee organization) is aware of MEM contact person?	Availability of MEM SHE Section contact details required. Display of MEM purchaser contact details only inadequate.		
7	Organization performs communication on environmental issues to its suppliers?	Assess on banned substance issues and environmental related communications only. Quality related communication inadequate. Method to provide info on MCVs present (not necessary for a GP Manual etc. Fax / Letter / briefing / memo adequate) Records to be present		
8	Internal communication channel adequate?	Information on notice boards, briefing, memos, emails etc to demonstrate.		

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<b>Legal and Other Requirements</b>				
9	List of legal and other requirements	List includes latest legislation List includes MEM GPM Method of obtaining latest requirements demonstrated using recent changes in legislation		
10	Person responsible for Legal and Other Requirements available?	PIC present and aware of topic?		
11	List complete	List includes other requirements		
12	Evaluation of compliance performed?	Evaluation records available Evaluation includes that of other requirements		
<b>Management of Change (MoC)</b>				
13	System for MoC available?	Not necessary for separate procedure. Captions of several procedures explaining MoC acceptable. MoC includes change in personnel, new product , new process etc		
14	MoC system includes changes that relate to the banned substances?	Method to responding change in MCV, regulations, etc (for banned substance) present? <i>Note: could be present in banned substance related procedures.</i>		
<b>Audits</b>				
15	Internal Audits Performed	Records available Coverage adequate Coverage includes auditing on "other requirements" (such as that of MEM GPM)		
16	Non conformances arising from audits adequately addressed	Focus on root causes and corrective action to address identified root cause		
17	Effectiveness of corrective actions	Are corrective actions reviewed for its effectiveness after the implementation?		
<b>Monitoring</b>				
18	Monitoring system available?	Monitoring to include that of changes in legislation, emissions and discharges, achievement of objectives and targets, compliance to other requirements etc (focus on monitoring of audit performance, o&t, legal; less focus on emissions and discharges)		
19	Corrective actions for monitoring related non-compliance addressed?	Any case of non-compliance - adequate root cause - corrective action analysis required. Related documentation and communication loop completed.		
<b>MEM Green Procurement Manual</b>				
20	Copy of the latest MEM GPM available	Ensure latest version		
21	Submission of ICP data	Initial submission required or when there is a change in process		
22	Copy of correspondence with MEM available	Check for information outgoing and incoming to/from MEM		

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		is compiled and available		
23	Dissemination of MEM GPM information adequate?	Key personnel to be aware of MEM GPM - purchasing, production, SHE, GM, MD, QA, lab etc		
24	Information specific to non-conformance pertaining to results of test for banned substances clearly understood by personnel?	Reference to be made to appropriate clause of MEM GPM. Requirement has been made part of supplier's internal procedure. Interview with relevant personnel demonstrated understanding. Form available.		
25	Relevant / potential banned substance identified	Ability to inform potential banned substance. Ability to inform source (part name / no) of potential banned substance coming from. Able to relate the entire list of Appendix 1 and narrow down to most relevant for the particular supplier's process / part supplied		

**Assessment Criteria:**

Full points: 125

Minimum partial compliance: 50

Score of	Basis (lower limit inclusive)	Result	Action Required (see Appendix 9 )
Below 50	Below min partial compliance	Fail	Re-audit required
50 - 75	Min partial compliance - below 60%	Poor	Submit improvement plan (within 21 days)
76 - 99	60% - below 80%	Moderate	Submit improvement plan (within 21 days)
100 and above	80% and above	Excellent - Green Supplier	<b>Follow up audit required once in 2 year</b>

**For Supplier**

Score achieved	Result	Assessed by	Assessment Date	Company Stamp

**\*For MEM will follow up the assessment once in 2 year**

Score achieved	Result	Re-audit required ? (Yes/No )	Type of follow up?	Assessed/Evaluated by:

Note: Type of follow up? - re-audit; documentation reply; next audit follow up

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## APPENDIX 8 - Method of Inspection

Note: the method of analysis shall be mentioned in the laboratory report to be provided to MEM.

Method	Materials Analyzed	Method	Limitations
Atomic absorption spectroscopy (AAS)	Pb, Cd (hg if cold vapor method is used)	Material for analysis is first dissolved	Analysis of solutions
Inductively coupled plasma spectroscopy (ICP)	Pb, Cd	Material for analysis is dissolved first	Analysis of solutions
UV / Visible Spectroscopy	Hexavalent Chromium (CrVI)	Material for analysis is dissolved first	CrVI needs to be in solution
Energy dispersive x-ray analysis with a scanning electron microscope (SEM / EDX)	Pb, Cd, Hg compounds, Br, Cr	Surface analysis technique. Area analyzed typically 1 micrometer in diameter with depth less than the diameter	Detection limit close to 0.1%. Cannot determine oxidation state of Cr. Identifies Br but does not identify compounds.
High performance liquid chromatography (HPLC)	Brominated flame retardant	Carried out on liquids	
Ion chromatography	Brominated flame retardant	Material for analysis is dissolved first	
Gas chromatography mass spectroscopy (GCMS)	Brominated flame retardant	Complex multi-step procedure	

*Adopted from: Appendix 1: Analytical Method - Corporate Procedure for the Procurement of Lead Free and Green Direct Material Hazardous Substance Control; ASAT Ltd. (11 Dec 2004 Rev A1)*



## APPENDIX 9 - Supplier Improvement Plan

**Contact Information** (for supplier)

Company	
Contact Person	
Email / Tel / Fax	
Date & Time of Audit	
Type of audit (Self-assessment / MEM On-site Audit)	

**Lists of Non-Compliance**

List of Audit Findings	
------------------------	--

**Root Causes and Corrective Action/Improvement Plan** *(use another sheet if more space is required.)*

Finding No	
Root Cause	
Corrective Action / Improvement Plan	
Completion Date	
Verification and Acceptance by MEM	

Finding No	
Root Cause	
Corrective Action / Improvement Plan	
Completion Date	
Verification and Acceptance by MEM	

Finding No	
Root Cause	
Corrective Action / Improvement Plan	
Completion Date	
Verification and Acceptance by MEM	

**Acknowledgement** (by supplier)

Improvement plan submitted on: \_\_\_\_\_ By (name): \_\_\_\_\_

**Acknowledgement** (by MEM)

Reviewed on: \_\_\_\_\_ By (name): \_\_\_\_\_

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## APPENDIX 10 – Request for MEM Approval Form



Request for MEM  
Approval Form



[ Supplier's company letterhead ]

### Request for MEM Approval

<b>Issue No:</b> _____	
<b>Date:</b> _____	
<input type="checkbox"/> *Process Change <input type="checkbox"/> *Product Change	<input type="checkbox"/> *Request by Customer <input type="checkbox"/> *Initiated Internally
<b>Requestor to complete</b>	
<b>Supplier Name and Address:</b> _____	
<b>Products Descriptions:</b>  <b>Item:</b> _____ <b>Lot no:</b> _____ <b>Quantity:</b> _____ <b>Others :</b> _____	
<b>Reason for Changes:</b> _____	
<b>Description and Effect of Changes:</b> _____	
<b>Attach with Report/Evidence:</b> <input type="checkbox"/> *Yes <input type="checkbox"/> *No	
Prepared By : _____ Signature: _____ Date: _____	
<b>Top Management Approval :</b>	
Signature : _____	Signature : _____
Name : _____	Name : _____
Position : _____	Position : _____
Date : _____	Date : _____
<b>MEM to Complete</b>	
<input type="checkbox"/> *Approved	<input type="checkbox"/> *Rejected
<b>Remarks / *Reason for Rejection:</b> _____ _____ _____	
<b>Name :</b> _____	
<b>Signature :</b> _____	<b>Date:</b> _____

\* Please tick where necessary

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## Information

For further information pertaining to Environmental, Occupational Safety & Health issues at MEM, including questions, feedback and support on this Manual and requirements, please forward your queries to:

### **Malaysian Electronics Materials Sdn Bhd**

Lot 5, Jln Ragum 15/17  
40200 Shah Alam,  
Selangor Darul Ehsan  
Malaysia  
Tel: 603-5519 8302  
Fax: 603-5519 6550  
URL: [www.memwire.com](http://www.memwire.com)

#### Contact Persons:

Muhammad Rizal bin Mustaffa (MEM SHE Officer)  
Email : [rizal@memwire.com](mailto:rizal@memwire.com)  
Tel : 603-55198302 ext 307

Or

Nurul Asmaq bt. Ahmad (MEM Supplier Care)  
Email: [nurulasmaq@memwire.com](mailto:nurulasmaq@memwire.com)  
Tel : 603-5519 8302 ext 203

Or

Zalhatun Nazira bt. Mohd Nordin (MEM Bansubstance / RoHS Team Leader )  
Email : [zalhatun@memwire.com](mailto:zalhatun@memwire.com)  
Tel : 603-5519 8302 ext 602

Or

Email: [banned\\_substance@memwire.com](mailto:banned_substance@memwire.com)