

SUPPLIER RESTRICTED MATERIALS SPECIFICATION, REVISION 1.2

1. PREFACE

FormFactor is a worldwide leader in the design, development and manufacture of advanced wafer probing solutions for the electrical measurement and test of semiconductor integrated circuits and chips. Components and materials incorporated into FormFactor products need to be compliant with a range of country and state level restricted materials legislation.

FormFactor's Restricted Materials Specification provides details of the

- Applicable legislation governing restricted materials
- Applicable materials restrictions
- Applicable material disclosure requirements

for components and materials supplied to FormFactor. These requirements and restrictions are mandatory for all parts, components, and materials supplied to FormFactor for use or integration into FormFactor's products.

FormFactor manufactures electrical and electronic equipment ("EEE") using the parts, components and materials supplied to it and sells such EEE to customers around the globe. Accordingly, FormFactor requires all suppliers to comply with the restricted materials legislation stated below, regardless of the supplier's location or the applicability of such restricted materials legislation to the supplier individually.

The supplier is responsible for obtaining and implementing the current guidelines laws and standards pertaining to this specification.

2. APPLICABLE RESTRICTED MATERIALS LEGISLATION, RESTRICTED MATERIALS AND DISCLOSURES

Components and materials incorporated into FormFactor products need to be compliant with the applicable materials restrictions and with all applicable restricted materials disclosure, communication, or technical file requirements in the legislation listed in this specification. Upon request, suppliers to FormFactor will be required to provide the disclosures as listed below.

EU RoHS Recast (Directive 2011/65/EU)

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0065>

Restricted Materials:

All components and materials provided to FormFactor for electrical and electronic products are required to be compliant with the materials restrictions of Article 4 of RoHS Recast concerning Pb (Lead), Hg (Mercury), Cd (Cadmium), Cr6+ (Hexavalent chromium), PBB (Polybrominated biphenyls), and PBDE (Polybrominated diphenyl ethers).

DIRECTIVE 2011/65/EU, ANNEX II.
Restricted substances referred to in Article 4(1) and maximum concentration values tolerated by weight in homogeneous materials

Restricted Substance	Maximum concentration values tolerated by weight in homogeneous materials
<i>Lead</i>	<i>0.1 %</i>
<i>Mercury</i>	<i>0.1 %</i>
<i>Cadmium</i>	<i>0.01 %</i>
<i>Hexavalent chromium</i>	<i>0.1 %</i>
<i>Polybrominated biphenyls (PBB)</i>	<i>0.1 %</i>
<i>Polybrominated diphenyl ethers (PBDE)</i>	<i>0.1 %</i>

This restriction does not apply to batteries, product packaging, and electrical consumables even if supplied as a component or a material to be incorporated into a FormFactor electrical or electronic product. A consumable is a component or chemical that is used by the FormFactor product during operation (such as printer ink, carbon filters, and reagents) and is not expected to stay with the FormFactor product for its entire lifetime.

Disclosures:

Suppliers need to provide a certificate of compliance (or equivalent) according to EN 50581, with attention paid to the compliance of the component or material with the materials restrictions of Article 4 of RoHS Recast and disclose details regarding any Annex III or Annex IV exemption used. After 22 July, 2019, the certificate of compliance needs to also contain certification of compliance with the materials restrictions of EU RoHS Recast Amendment 2015/863 regarding DEHP (Bis(2-ethylhexyl) phthalate), BBP (Butyl benzyl phthalate), DBP (Dibutyl phthalate), and DIBP (Diisobutyl phthalate).

This disclosure requirement does not apply to batteries, product packaging, and consumables even if supplied as a component or a material to be incorporated into a FormFactor electrical or electronic product. A consumable is a component or chemical that is used by the FormFactor product during operation (such as printer ink, carbon filters, and reagents) and is not expected to stay with the FormFactor product for its entire lifetime.

EU RoHS Recast Amendment 2015/863 regarding phthalates (for components and materials provided to FormFactor after July 22, 2019

http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2015.137.01.0010.01.ENG

Restricted materials:

As of July 22, 2019, components and materials provided to FormFactor for electrical and electronic products are required to be compliant with the materials restrictions of Amendment 2015/863 of RoHS Recast concerning DEHP, BBP, DBP and DIBP.

DIRECTIVE (EU) 2015/863, ANNEX II

Restricted substances referred to in Article 4(1) and maximum concentration values tolerated by weight in homogeneous materials

Restricted Substance	Maximum concentration values tolerated by weight in homogeneous materials
<i>Lead</i>	<i>0.1 %</i>
<i>Mercury</i>	<i>0.1 %</i>
<i>Cadmium</i>	<i>0.01 %</i>
<i>Hexavalent chromium</i>	<i>0.1 %</i>
<i>Polybrominated biphenyls (PBB)</i>	<i>0.1 %</i>
<i>Polybrominated diphenyl ethers (PBDE)</i>	<i>0.1 %</i>
<i>Bis(2-ethylhexyl) phthalate (DEHP)</i>	<i>0.1 %</i>
<i>Butyl benzyl phthalate (BBP)</i>	<i>0.1 %</i>
<i>Dibutyl phthalate (DBP)</i>	<i>0.1 %</i>
<i>Diisobutyl phthalate (DIBP)</i>	<i>0.1 %</i>

Disclosures:

As of July 22, 2019, the disclosures for EU RoHS Recast (Directive 2011/65/EU) must also include the materials according to EU RoHS Recast Amendment 2015/863.

China ROHS 2 (Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products)
Disclosures:

Suppliers must disclose which hazardous substances covered by China ROHS 2 are contained in their product. FormFactor will currently accept the disclosures for EU RoHS Recast (Directive 2011/65/EU) as outlined above to cover the China ROHS 2 disclosures.

EU REACH Regulation (EC No 1907/2006)

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006R1907-20140410>

Restricted materials:

All components and materials provided to FormFactor are required to be compliant with the materials restrictions of Article 67 (Annex XVII) of the EU REACH Regulation

Disclosures:

Suppliers shall communicate the presence of any REACH Substances of SVHCs (Substances of Very High Concern) in components and materials provide to FormFactor if they exceed 0.1% weight by weight (w/w) of any article (as defined by Court of Justice of the European Union Case C-106/14).

Candidate List of SVHCs:

<https://echa.europa.eu/candidate-list-table>

EU Persistent Organic Pollutants Regulation (EC No 850/2004)

<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1485818115778&uri=CELEX:32004R0850>

Restricted materials:

All components and materials provided to FormFactor are required to be compliant to the materials restrictions of the EU Persistent Organic Pollutants Regulation.

EU Battery Directive (2006/66/EU)

<http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32006L0066>

Restricted materials:

Batteries provided to FormFactor for electrical and electronic products are required to be compliant with the materials restrictions of the EU Battery Directive (2006/66/EU) concerning Hg and Cd.

DIRECTIVE (EU) 2006/66, ANNEX II**Article 4 Prohibitions**

Substance	Maximum concentration by weight	Usage restrictions
Hg (Mercury)	0.0005%	All batteries or accumulators
Cd (Cadmium)	0.002%	Portable batteries or accumulators,

California Management of Perchlorate Materials (22 CCR § 67384.1)**Disclosures:**

Suppliers need to communicate the presence of any perchlorate materials in any components or materials provided to FormFactor. Particular attention should be made to lithium perchlorate in button cell batteries.

Batteries, general disclosure requirements**Disclosures:**

FormFactor requires suppliers to disclose the presence and type of any battery or accumulator in materials supplied to FormFactor.

EU Packaging Directive (94/62/EC)

<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:31994L0062>

Restricted materials:

Packaging and packaging materials provided to FormFactor for electrical and electronic products are required to be compliant to the materials restrictions of EU Packaging Directive (94/62/EC).

Disclosures:

Suppliers need to provide a certificate of compliance according to the Toxics in Packaging Clearinghouse standard stating that no packaging materials contain more than a total concentration (sum) of Pb, Cd, Hg, and Cr6+ above 100 ppm.

Substance	Maximum concentration in packages by weight (as summary of all listed substances)
Pb, Cd, Hg, Cr 6+	100 ppm

US Toxics in Packaging Restrictions

Restricted materials:

Packaging and packaging materials provided to FormFactor for electrical and electronic products are required to be compliant to the US Toxics in Packaging Restrictions. No packaging material may contain more than a 100 ppm sum of Pb, Hg, Cd, and Cr6+.

Disclosures:

Suppliers need to provide a certificate of compliance according to the Toxics in Packaging Clearinghouse standard stating that no packaging materials contain more than a total concentration (sum) of Pb, Cd, Hg, and Cr6+ above 100 ppm.

California Proposition 65

Disclosures:

Suppliers shall communicate the presence of any California Proposition 65 listed substances in any components or materials provided to FormFactor that are likely to come into contact with humans and potentially exceed Proposition 65 exposure limits. Human exposure scenarios include dermal contact, ingestion and inhalation.

<http://oehha.ca.gov/proposition-65>

<http://oehha.ca.gov/proposition-65/proposition-65-list>

US SEC Conflict Minerals (Section 1502 of Dodd-Frank)

Disclosures:

Suppliers shall provide conflict minerals data to FormFactor in a current Conflict Minerals Reporting Template on an annual basis. Particular attention should be given to identifying and reporting smelters of tin, tantalum, tungsten, and gold in the supplier's supply chain.

US iMERC Hg Registration and Labelling and Canada Products Containing Mercury Regulations

Disclosures:

Suppliers need to communicate the presence of any Hg (above trace concentrations) in any components or materials provided to FormFactor.

3. GENERAL REQUIREMENTS

Unless specifically approved by FormFactor, components and materials supplied to FormFactor need to be compliant with the materials restrictions specified in section 2.

Upon request, suppliers shall produce a statement of compliance indicating that all components or materials provided to FormFactor comply with this restricted materials specification.

FormFactor may also request suppliers to submit the individual certificates of compliance and/or the material disclosures specified in section 2.



Those requests may be handled by FormFactor or through third party compliance management providers on FormFactor's behalf.

If you cannot meet any of the material restrictions required by this specification or have any questions regarding the applicability of any of the legislation, restriction, or disclosure requirements above to the components or materials you provide to FormFactor, please contact FormFactor at compliance.en@cmicro.com or the assigned third party compliance management provider.