

Suppliers

As part of the global electronic supply chain, TTM is required to provide much detailed information on the products it manufactures from the raw materials it purchases from you. The information and data requirements below summarize most of the data exchange that TTM must provide to its customers. Accordingly, these requirements must be provided by TTM suppliers.

1. Required of All Suppliers

1.1 Terms and Conditions All purchase orders must be accepted in writing by Seller. If for any reason Seller should fail to accept in writing, any conduct by Seller that recognizes the existence of a contract pertaining to the matter of the purchase order shall constitute acceptance by the Seller of the purchase order and its terms and conditions above.

1.2. Environmental Management System (EMS) All suppliers are encouraged to implement and adopt an EMS that addresses the environmental aspects and impacts. In addition, suppliers' assistance in TTM meeting its environmental objectives and targets of reducing energy usage, reducing waste generation and reducing water usage is solicited. Please review TTM CEO's letter dated February 19, 2009 above.

2. Required of Suppliers whose Products Become Incorporated into TTM Products

These requirements are mandatory for all raw materials purchased for making printed circuit boards (PCBs) and printed circuit board assemblies (PCBAs). Should Seller have any questions regarding whether its products become incorporated into TTM products, please contact TTM purchasing for written confirmation.

2.1 EU RoHS (European Union Restriction on the use of Hazardous Substances) **Compliance**

This 2003 directive restricts the use of four metals (cadmium (Cd), hexavalent chromium (Cr⁺⁶), lead (Pb) and mercury (Hg)) and two brominated flame retardants ((BFRs) (polybrominated biphenyls (PBBs) and polybrominated biphenyl ether (PBDEs)) in electrical and electronic equipment (EEE) to 0.1% (1000 ppm) on a homogeneous material basis except for cadmium which has a 0.01% (100 ppm) limit. The EU is currently considering additional substances, and have proposed monitoring of three phthalates (Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP) and Bis (2-ethylhexyl) phthalate (DEHP)) and another BFR HBCDD – Hexabromocyclododecane (HBCDD). Therefore, a material content disclosure (MCD) certification on the absence or presence of all 10 substances is required by TTM suppliers. Future changes to the EU RoHS substance list are probable.

2.2 China RoHS and Other RoHS Laws Compliance

The Chinese law governing material content in EEE generally follows the EU list of substances, as do other laws in different legal entities around the world. Therefore, declaration on the material content of the EU RoHS substance list will also address the other similar RoHS laws currently.

2.3 EU REACH (Registration, Evaluation, Authorization (and Restriction) of Chemicals)

This 2006 directive has essentially two applicable requirements for non-EU suppliers. The first is the registration of substances that are released into the EU environment. This requirement does not apply to TTM PCBs and PCBAs as there are no known intentional releases of substances from PCBs and PCBAs when in use.

However, the second requirement of REACH is the disclosure of any substance of very high concern (SVHC) that is contained within an article (like a PCB or PCBA) at a concentration of 0.1% (1000 ppm) or more on an article weight basis. Through December 2010, the EU Chemicals Agency (ECHA) has adopted 53 chemical substances as SVHCs in all products, including EEE, and has proposed adding 20 more. Disclosure certification of these SVHCs must be provided to TTM...The Supplier must also submit safe use information on any product in which the SVHC content is above 0.1% or 1000 ppm..

2.4 Prohibited Process Chemical Contact

The use of certain process chemicals like ozone depleting substances (ODSs) and perfluorooctane sulfonates (PFOS) that contact product but are not incorporated into the product are prohibited. Suppliers must comply with TTM's banned and prohibited substances procedure 4.4.6(u) above, unless purchase specifications require otherwise. TTM may require certification of the non-use of these substances.

2.5 Material Content Declarations

Supplier certification to the absence or presence of EU RoHS, China RoHS, EU REACH SVHC or Prohibited Process Chemical Contact can be provided in a variety of formats such as the IPC 175x version 2.0 disclosure in an XML format; data submission to www.BOMcheck.net, or supplier/TTM forms such as TTM form CE040 for SVHC certification. See form CE040 for the current list of 54 SVHC substances.

In addition to a completed MCD certification, TTM encourages a third party laboratory analysis using the applicable IEC test method to demonstrate compliance to the various banned and restricted substance limits. Suppliers who have internal lab analysis showing compliance of such substances can provide a copy of that analysis as an alternative.

2.6. Packaging Suppliers

More and more legal entities are adopting legislation regarding material content in packaging. Since 1994, the EU Packaging directive has restricted the combined heavy metal content of cadmium, hexavalent chromium, lead and mercury to 100 ppm. The EU also adopted a directive banning the use of dimethylfumarate (DMF) in desiccants, and one EU member (Italy) requires that shippers of packaging containing desiccants maintain an analysis on file that confirms no DMF is present in the desiccants shipped.

Packaging is also considered a product under REACH, and therefore, certification that packaging materials do not contain any REACH SVHCs above the 0.1% (1000 ppm) concentration is required of TTM packaging material suppliers.

Further, wood pallets and other wood packaging materials must conform to the International Standards for Phytosanitary Measures No. 15 (ISPM 15) standard that over 60 countries have adopted. This includes marking all pallets and wood packaging material with the ISPM logo, country of origin code and disinfectant method used to sanitize the wood. Lastly, any wood packaging material greater than 6 mm (1/4") thickness must be debarked. Certification of all these packaging requirements is required of TTM packaging material suppliers.

2.7. Conflict Minerals

Section 1502 of the Dodd-Frank financial reform law (PL 111-203) requires companies that use gold, tin, tantalum, and tungsten in products to identify the source mine(s) of these metals used in making any product. In December 2010, the US Securities and Exchange Commission (SEC) published proposed rules that will require TTM and most other companies using these metals to report on their efforts to identify the sources of gold, tin, tantalum, and tungsten used in the various raw materials purchased by TTM. Final reporting rules are expected in late 2011. In addition, some major TTM customers are requiring source tracing for cobalt and palladium in addition to the four SEC listed conflict minerals. TTM therefore requires its suppliers to identify the source of these six metals used in making raw materials for TTM on form CE041, which is the July 18, 2011 revision of the EICC- GeSI "Conflict Minerals Reporting Template".

TTM Technologies "Conflict Minerals" Policy

The term "Conflict Minerals" refers to metals that have their origin in areas of the world where known human rights violations exist. Metals used in the manufacture of Printed Circuit Boards and Printed Circuit Board Assemblies that could potentially have their origin in such a location are...Gold, Tin and Tantalum. Currently, the Democratic Republic of the Congo and the 9 adjoining countries have been identified as a source of "Conflict Minerals." Suppliers that can provide documentation that neither they, nor their suppliers, acquire these metals from an area of conflict will receive preferential treatment in TTM's purchasing decisions. TTM Technologies expects our suppliers to be environmentally and socially responsible.

2.8 Social and Environmental Responsibility (SER) Requirements

Many of TTM's major customers are members of the Electronic Industry Citizenship Coalition that developed social and environmental responsibility requirements known as the Electronic Industry Code of Conduct (EICC). As an integral part of the global electronic supply chain, TTM is following these EICC SER requirements and is encouraging its suppliers to also adopt and endorse these requirements. TTM will require its suppliers to complete an EICC SER self-assessment once every three years using TTM form CE042 and to address identified gaps from such self-assessments.

3. Documentation Submittal

Scanned copies of completed 175x v2.0 MCDs, CE040 SVHC certifications, lab analyses and other MCD declarations including packaging SVHC certification and conflict metals source identification should be sent to materialdeclaration@ttmtech.com and your TTM purchasing contact. Submitted documentation must have a signature (electronic is acceptable), point of contact information with title, and the date. Electronic copies of required certifications must contain an electronic signature. Alternative submissions to BOMcheck.net are also acceptable.