

Prioritization of Substances of Concern

Overview:

Zebra Technologies recognizes the importance of understanding its environmental responsibilities and complying with applicable laws and regulations to minimize adverse effects on human health and the environment. Zebra's Global Environmental Compliance Specification ([CPZ-CE-010](#)) details substances that are banned, restricted, targeted for reduction in the future, or required to be reported in its core products, including supplies, accessories, batteries, and packaging. This Environmental Compliance Specification is integrated into Zebra's design guideline requirements, and product development processes.

In addition to fulfilling our obligations of banning and restricting substances required by global laws and regulations, Zebra is looking ahead to proactively restrict potentially hazardous substances and to use safer materials. Zebra utilizes a multi-criteria framework to evaluate chemicals of concern and their use in Zebra products.

Risk Assessment:

There are many ways companies can collect environmental and chemical compliance data. As outlined in the Environmental Compliance Specification, manufacturers and suppliers of parts and materials that are used in Zebra's products, must submit to Zebra a Full Material Disclosure (FMD). Zebra utilizes a Product Lifecycle Management (PLM) system to store and assess the data against its Environmental Compliance Specification. The Product Compliance team meets annually to review all documentation, as well as the Environmental Compliance Specification to ensure compliance to all global regulations and proactively explore safer materials as alternatives.

The collection of Full Material Disclosure data and the use of the PLM system allows Zebra to efficiently determine the presence of any particular substance and the extent of its use within Zebra products. By virtue of collecting this data, Zebra can look ahead to pending regulations that may restrict or ban certain hazardous substances and determine its impact on our products. This allows for Zebra to implement rolling changes to our impacted products to remove this substance, if necessary.

Framework:

While assessing the risk of hazardous chemicals that are currently regulated and may be regulated in the future, Zebra utilizes a multi-criteria framework to evaluate the approach needed to ensure compliance and to minimize our environmental impact. The criteria that the framework is centered upon are as follows:

- Hazard – Human & Environmental health
- Presence – Zebra & Industry use
- Focus – Current & future regulations

Hazard:

Certain chemicals are restricted based on their known, or potential, hazard to both human health and the environment. These hazards include cancer, reproduction and development concerns, single and repeated exposure effects, and the impact on the environment either through procurement of the substance or waste and disposal of the substance. Zebra leverages existing chemical hazard assessment methods, standards, and organizations, including ECHA, OSHA, OECD, and IPC, among others, to conduct research and calculate data to provide guidance on the hazards of certain chemicals.

Presence:

Presence looks at the likelihood of a certain chemical being found in a Zebra product or in the electronics industry supply chain. As outlined above, Zebra requires all manufacturers and suppliers to provide Full Material Disclosure. Utilizing the FMD and Zebra's PLM system, we can determine the presence of certain chemicals found in products and the extent of their use. Zebra also considers the presence of certain substances associated with the electronics industry and the effort that is being given to eliminate that substance from parts that may be used in Zebra products.

Focus:

Zebra prioritizes current, in force, regulations of substances for the restriction of hazardous chemicals. Zebra closely monitors the global regulatory landscape utilizing internal subject matter experts and outside partners to ensure that all Zebra products adhere to global regulations and directives.

Zebra evaluates upcoming, future regulations using several factors including regulatory impact as well as likelihood and timeline of the regulation being implemented. Zebra, again, utilizes both internal subject matter experts, and outside partners to determine the impact to Zebra and the level of prioritization needed.

Prioritization:

Zebra utilizes its multi-criteria framework approach to determine which hazardous, or potentially hazardous substances are banned or restricted in Zebra products. All substances that are banned or restricted by current, in force, global regulations that are applicable to Zebra products are included in Appendix A of the Environmental Compliance Specification. These chemicals are prioritized for removal from Zebra products based on the three framework pillars – hazard, presence, and focus. However, there may be some exceptions for certain substances that have exemptions in the applicable regulation up to a certain threshold level (i.e., lead allowable in copper alloys up to 4% as per RoHS Directive 2011/65/EU & Amendment 2015/863).

Zebra has created a Green Product Specification that outlines several substances that should be removed during the design phase of a new product. By utilizing the framework, Zebra has prioritized certain substances that may be hazardous to human and environmental health, are found within Zebra products or the industry, and/or may be regulated in the future. By proactively removing these substances from Zebra products, Zebra is helping to ensure they meet future requirements and are more sustainable for users and environment.

Utilization of the Framework:

As outlined by the Framework and Prioritization sections, Zebra products do not contain any hazardous substances that are restricted by global regulations or directives that are applicable. In addition, Zebra has taken the initiative to proactively remove hazardous, or potentially hazardous substances from our products based on the Framework. Examples include:

- Though lead is restricted by the RoHS directive, exemption 6a allows for lead in certain types of steel up to 0.35% by weight. More than 90% of the identified parts have been switched to a lead-free steel.
- Zebra products are all latex-free due to the potential hazard to human health.
- In 2018, Zebra undertook an initiative to remove polyvinyl chloride (PVC) from use in external cables that may be handled frequently by the user. PVC utilizes different phthalates as a plasticizer and due the increasing focus on the potentially hazardous effects of phthalates, Zebra has moved to eliminate PVC from external cables.
- Zebra took additional measures to limit PVC by switching to thermoplastic polyethylene (TPE) and thermoplastic polyurethane (TPU), and ceased the use of polydioctylfluorene (PFO), and perfluorooctanoic acid (PFOA) ahead of proposed regulations.
- Zebra has eliminated halogen flame retardants from printed circuit boards in select mobile computer devices.
- Zebra's print supplies are Bisphenol A (BPA)-free and phenol-free.

For additional inquiries, please consult www.zebra.com/environment or reach out to our Product Environmental Compliance Team at PEC@zebra.com