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Dell's Chemical Use Policy

In 2002, Dell formalized a chemicals management process to minimize or eliminate the use of certain environmentally sensitive materials in our products. The process began by publishing a list of substances that our customers, regulators and NGOs considered most important to manage, restrict or ban. The resulting publicly available [Dell Inc's Materials Restricted for Use](#) specification serves as the cornerstone of the Dell Inc chemicals management process. In addition to this supplier specification, Dell Inc has implemented process controls and corrective actions throughout its organization and supply chain to ensure that its chemicals management objectives are met — that the targeted restricted materials are replaced and alternative materials are developed for future product generations. Process controls that Dell Inc implemented include supplier declarations and Dell Inc factory and supplier material testing audits.

Through this integrated management process, Dell Inc has established a working model that can be used to make more informed decisions when new scientific findings call for alternative material selections.

Dell Inc first published a Chemical Use Policy in December 2005 to share our long term vision of our precautionary approach to chemical management. Dell Inc's vision is to avoid the use of substances in its products and product manufacturing processes that could potentially harm the environment or human health and to ensure that we act responsibly and with caution. We affirm this commitment in this updated Chemical Use Policy.

Act Responsibly

To act responsibly, Dell Inc believes that if reasonable scientific grounds indicate that a substance, or group of substances, could pose significant environmental or human health risks, then Dell Inc should avoid using the substances. Precautionary measures should be taken — even if the full extent of harm has not yet been definitively established — unless there is convincing evidence that the risks are small and the benefits outweigh the risks. Dell Inc considers these to be “substances of concern.” When identifying substances of concern, Dell Inc considers legal requirements, international treaties and conventions, and specific market demands. Dell Inc's list of “substances of concern” all have hazardous properties that:

- Are a known threat to human health or the environment
- Show strong indications of significant risks to human health or the environment
- Are known to be bio-persistent or bio-accumulative in humans or the environment

Enforce the Company's Precautionary Measures

To enforce the company's precautionary measures, Dell Inc strives to eliminate substances of concern in its products and product manufacturing processes by:

- Maintaining a Banned and Restricted Substance Program
- Choosing designs and materials that avoid the use of substances of concern
- Prohibiting supplier use of these substances contractually
- Substituting viable alternative substances



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If alternatives are not yet viable, Dell Inc works with its industry partners to promote industry standards and the development of reliable, environmentally sound, and economically scalable technical solutions.

Compliance with International Restrictions on Hazardous Substances

Global concerns over human health and environmental risks associated with the use of certain environmentally sensitive materials in electronic products and electronic product manufacturing processes have led numerous countries to restrict the use of certain hazardous substances. To meet these requirements, we've worked with our supply chain to develop substitutions, to modify our specifications, and to verify compliance with these requirements.

European Union RoHS

In 2006, the European Union (EU) Directive on the Restriction of the use of certain Hazardous Substances (RoHS, 2002/95/EU) went into effect. This important directive is designed to restrict the use of cadmium, hexavalent chromium, lead, mercury and certain halogenated flame retardants (PBBs and PBDEs) in electronic products. All Dell Inc products sold in the EU on or after July 1, 2006, comply with the EU RoHS requirements. As permitted by the RoHS Directive, service or upgrade parts that do not meet the restrictions may continue to be offered to support legacy products that were sold prior to July 1, 2006. As of the beginning of 2007, all Dell and EMC branded products were compliant to the EU RoHS requirements worldwide.

In 2011, the EU RoHS Directive was recast (2011/65/EU) and went into effect January 3, 2013. Demonstration of compliance by product platform is accomplished through products labeled with a CE mark and backed by a DoC (Declaration of Conformity) signed by an authorized corporate officer. DoCs reference products by Regulatory Model/Regulatory Type which may differ from the product's Marketing Model. The product Marketing Model can be cross-referenced with the Regulatory Model/Regulatory Type via the Product Safety, EMI and Environmental Datasheet for each specific product.

In 2015, EU RoHS was amended (2015/863/EU) to restrict four phthalates by July 22, 2019. In the electronics industry, phthalates are mainly used as a plasticizer for wires and cables. Dell Inc has taken proactive steps to restrict the use of following four phthalates from our products ahead of the deadline of July 22, 2019 when the EU RoHS 2 Directive (2011/65/EU) will take effect:

- Bis (2-ethylhexyl) phthalate (DEHP)
- Butyl benzyl phthalate (BBP)
- Dibutylphthalate (DBP)
- Diisobutyl phthalate (DIBP)

Based on our precautionary approach, Dell Inc has implemented the restriction of the above phthalates in all newly designed products since January 2015. More details on this restriction can be found on the website of the EU funded project on substitution (<http://www.subsport.eu/case-stories/304-en?lang>).

The recast EU RoHS also introduced a set validity period for exemptions. Therefore Dell Inc has phased out RoHS exemptions 7(b) (Lead in solders for servers, storage and network equipment). We expect that all other RoHS exemptions we are currently using will be renewed for continued use; however, we will explore phasing out additional exemptions as we identify acceptable alternatives.



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Other RoHS Type Regulations

On February 28, 2006, China released a regulation called *Management Methods for Controlling Pollution by Electronic Information Products*, which is also referred to as "China RoHS." Although this regulation restricts use of the same six hazardous substances as the EU version of RoHS, the China RoHS regulation adopts a different approach for compliance verification. That is, producers should properly label and disclose RoHS information for all applicable electronic and information products (EIPs) and parts sold in China on and after March 1, 2007. Dell Inc complies with the China RoHS labeling and disclosure requirements and continues to monitor new developments related to China RoHS, including the development of China RoHS Phase II and participation in the China RoHS Voluntary Certification Program.

Dell Inc is compliant to all implemented RoHS type regulations worldwide, including but not limited to, Korea, Japan, United States (e.g. California), Ukraine, Serbia, Turkey, Vietnam, Singapore, India, Kosovo, Taiwan, and Mexico. Dell Inc continues to monitor, influence and develop our processes to comply with upcoming proposed RoHS type regulations, including but not limited to, Brazil, Argentina, Jordan, United Arab Emirates (UAE), and Customs Union (Russia, Belarus, Kazakhstan).

European Union REACH

REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals, EC 1907/2007) is the European Union's chemical regulation that came into force on June 1, 2007 and will be phased in over an 11 year period (until 2018). Dell Inc supports the basic objective of REACH to further improve the European Union's chemicals regulatory system, including the aim to advance public health and safety and the protection of the environment.

Dell Inc meets all requirements of REACH and is committed to provide our customers with up to date information about Substances of Very High Concern (SVHC) in our products according to REACH requirements. The [Dell Inc's Materials Restricted for Use](#) specification restricts the use of substances restricted under REACH as well as certain SVHC on a global level.

Voluntary Activities on Substances of Concern

Elimination of Mercury

Dell Inc transitioned all of its new laptop displays to light-emitting diode (LED) by 2010. In addition to the energy savings when compared to cold cathode fluorescent lamp (CCFL), LED display technology eliminates the use of mercury commonly found in CCFL. This technology has been incorporated in all Dell Inc notebooks and all flat panel displays. We still claim an EU RoHS exemption for mercury in projector lamps as well as a small number of video displays in legacy EMC storage products.

Elimination of Arsenic in Glass

Arsenic is commonly used during the manufacturing of glass to reduce the effects of iron impurities in glass. Dell Inc began adopting Arsenic-free display glass in newly designed Dell branded notebooks in 2009. Dell Inc has now expanded its portfolio of arsenic-free glass to all Dell branded notebooks and all Dell branded flat panel displays.

Elimination of BFR, PVC and Halogens



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Brominated Flame Retardants (BFR) and Polyvinyl Chloride (PVC) are used in various components, wires and cables in electronic products. Dell Inc continues to make progress towards our commitment to eliminate BFR and PVC from personal computing products, as acceptable alternatives are identified. These efforts aim to lower possible product health and environmental impacts without compromising product performance.

All BFRs and PVC were restricted from the external case plastics in Dell branded products since 2004. Our list of BFR and PVC free products in fiscal year 2017 includes:

- Dell Venue™ tablet products
- Dell XPS™ laptops and tablets
- Dell Precision™ mobile workstations
- Dell Latitude™ laptops (except Latitude 3-series)
- Select Dell OptiPlex™ desktops
- Dell P-Series flat-panel displays

In addition to these efforts, prior to the merger with Dell, EMC had been working for several years to reduce the use of halogens in newly designed printed circuit boards (PCBs). Halogens are an ingredient in flame retardants commonly used in laminates for PCBs, but there are concerns about halogens' impact on the environment and human health. With the introduction of halogen-free laminates in 2013, and of a halogen-free solder mask in 2014, the majority of newly designed, heritage EMC storage product PCBs (all that are technically feasible) are free of halogens below contemporary detectable limits of 50 ppm.

We continue to advocate for criteria in EPEAT (and other eco-labels and green public procurement standards) when those standards award additional points to supplier product lines that are offered as halogen-reduced (e.g. halogen-free laminate).

Engagement in Environmental Preferable Materials Initiatives

Where viable alternatives do not yet exist, Dell Inc is working with its industry partners to promote the development of standards and reliable, environmentally sound and economically scalable technical solutions.

ChemSec Business Group:

Dell Inc is a member of ChemSec's Business Group. This is a collaboration among companies working together to reduce environmentally sensitive materials. The Group gathers leading companies across a diversity of sectors, for the development of effective corporate practice in the substitution of hazardous substances. See <http://chemsec.org/business-and-investors/business-dialogue/> for details.

Green Chemistry and Commerce Council (GC3):

Dell Inc is a member of GC3. GC3 is a cross sectorial, business-to-business network of companies and other organizations working collaboratively to advance green chemistry across sectors and supply chains. GC3 vision is to advance green chemistry, green engineering and design for the environment and works to develop and promote tools, policies and business practices to drive green chemistry throughout supply chains. Visit <http://www.greenchemistryandcommerce.org/>



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Verifying Compliance

Dell Inc requires suppliers to sign a Supplier Declaration of Conformity (SDoC) to certify that all product materials comply with [Dell Inc's Materials Restricted for Use](#) specification. This documentation is required to release a part to production. To sign the SDoC, the supplier must certify that the product meets the latest specification, provide the mass and concentration for declarable substances above the identified threshold concentration and record any applicable exemptions. At Dell Inc's request, the supplier must also be able to provide technical documentation in the form of internal design controls, supplier declarations, or analytical test data. Dell Inc's goal is to collect supplier declarations on each part in a product's bill of materials. This will ensure that each product meets the legislated materials requirements.

An additional level of compliance verification strategy is our supplier RoHS audit program, in which Dell Inc parts are selected at random and submitted for third-party, analytical testing. The audit is conducted on a regular basis. Samples are tested for the presence of restricted materials, including those prohibited by the RoHS Directive. The audit is used to further validate SDoCs as another measure to ensure supply chain compliance with the [Dell Inc's Materials Restricted for Use](#) specification.

Chemicals in the Manufacturing Process

To further our commitment to safeguard human health, safety and the environment, Dell has formed the Manufacturing Process Chemicals Program to monitor, address, and mitigate risks associated with the use of chemicals in Dell product manufacturing.

Guidelines for Management of Manufacturing Process Chemicals

In 2017, Dell will issue its Guidelines for Management of Manufacturing Process Chemicals to address risks associated with using chemicals in the manufacturing process. Within these guidelines, Dell will restrict the use of certain substances throughout its organization and supply chain beyond regulatory requirements. Suppliers will be expected to demonstrate conformance to the Guidelines for manufacturing operations that produce products supplied to Dell.



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Revisions

Date	Description
May 2017	Add process chemicals, minor revisions & formatting following merger of Dell & EMC
May 2013	Minor revision
June 2009	Minor revision
December 2005	Initial publication

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