



Dell Milestones in Proactively Reducing and/or Eliminating Sensitive Chemicals: BFR/CFR/PVC

1996	Shipped first Blue Angel-certified PCs and displays (prohibiting all PBBs (polybrominated biphenyls), PBDEs (polybrominated diphenyl ethers) and short-chain paraffins)
1998	Shipped first TCO-certified PCs and displays (prohibiting all (PBBs), (PBDEs), and short-chain paraffins).
2002	<p>Prohibited the use of all PBBs and PBDEs (including decabromodiphenyl ether (DecaBDE)) in all Dell products.</p> <p>Prohibited the use of PVC (polyvinyl chloride) in all mechanical parts to less than 25 grams.</p> <p>Led High Density Packaging User Group (HDPUG) industry consortium project to explore the health and safety impacts of halogen-free (Brominated/chlorinated flame retardants (BFR/CFR) and polyvinyl chloride (PVC)) circuit board laminate materials.</p>
2003	Eliminated all halogenated flame retardants (BFRs and CFRs) in desktop, laptop and server chassis plastic parts weighing more than 25 grams.
2004	<p>Eliminated all halogenated flame retardants (BFRs and CFRs) from the external case and chassis plastics of all Dell-branded products.</p> <p>Shipped first Blue Angel-certified printers with BFR/CFR-free chassis plastic parts (except high-temperature fuser assembly on laser printers).</p>
2005	Actively participated in the US EPA Design for Environment project “Flame Retardants in Printed Circuit Boards Partnership” to understand the environmental and human health attributes of selected flame retardants used in printed circuit boards, including tetrabromobisphenol A (TBBPA)
2006	Commenced the International Electronics Manufacturing Initiative (iNEMI) and High Density Packaging User Group (HDPUG) programs to develop further understanding of technical and practical aspects of halogen-free electronic materials.
2008	<p>Implemented BFR/CFR/PVC scoring criteria into quarterly business reviews with suppliers. Suppliers risk having their overall scores reduced during Dell quarterly business reviews for not offering BFR/CFR/PVC-free products.</p> <p>Dell Studio Hybrid™ became the first BFR/CFR/PVC-reduced Dell desktop to offer a motherboard containing BFR-free laminates (CFRs and PVC are not used in motherboards to begin with) per Japan</p>

	<p>Electronics Packaging and Circuits Association (JPCA) ES-01-1999, as well as BFR/CFR/PVC-free chassis plastics.</p> <p>Dell Latitude™ E4200 laptop became the first Dell laptop to contain a motherboard using BFR-free laminates and BFR/CFR/PVC-free chassis plastics. Additionally, the system fan housing and impeller were constructed using BFR-free plastics (CFRs and PVC have never been used in this application).</p>
2009	<p>Released first completely BFR/CFR/PVC-free products — the G2210 and G2410 monitors. All components, including printed wiring boards and packaging, of the G-series monitors were designed to be BFR/CFR/PVC-free , with no exceptions.</p> <p>BFR/CFR/PVC-free cables became available in North America, Japan, Europe, the Middle East and Africa.</p>
2010	<p>Committed that, by the end of 2011, all newly introduced Dell personal computing products will be BFR-, CFR- and PVC-free¹, as the industry identifies acceptable alternatives that will lower product health and environmental impacts without compromising product performance.</p> <p>Proactively eliminating the four chemicals hexabromocyclododecane (HBCDD), bis (2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP) and dibutylphthalate (DBP) as their restrictions begin in 2014 under EU REACH. As of July 1, 2010, all newly designed Dell products are free of these four chemicals.</p> <p>Transitioned to BFR- and PVC-free components, such as removable media storage devices, memory, hard disk drives, Notebook LCDs, and Notebook Keyboards in our End User Computing products.</p> <p>Transitioned to LED (light-emitting diode) illumination for all new laptop displays, thereby eliminating the need for mercury in those products.</p>
2011	<p>Introduced multiple mainstream BFR/PVC-Free products, including the OptiPlex 990 SFF and Latitude E6420 systems, which can be configured to be completely free of BFR/PVC. Also launched the DELL Professional P2412H-HF 24” Monitor with LED, which is BFR/PVC-Free (including external cables), and is made from environmentally responsible materials such as arsenic-free, mercury-free LED panel.</p>
2012	<p>Introduced many products with BFR/CFR/PVC-Free features:</p> <ul style="list-style-type: none"> - Flat Panel Display Models: P1913, P1913S, P2212, P2012H, P2212H, P2312H, P2412H - Notebooks Models: <ul style="list-style-type: none"> o XPS 13 o Inspiron 13z o Latitude E6420, E6230, E6330, E6430, E6530, E6430 ATG, E5430, E5530 - Desktop Models: OptiPlex 990 and 9010 SFF
2013	<p>Introduced complete product lines with BFR/CFR/PVC-Free features</p> <ul style="list-style-type: none"> - Flat Panel Display: P-Series Display - Notebooks: <ul style="list-style-type: none"> o XPS Series

	<ul style="list-style-type: none">○ Latitude Series²○ Mobile Precision Series- Tablets: XPS Tablets- Desktop: OptiPlex 9020 USFF
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¹ Dell has adopted the BFR/CFR/PVC-free definition as set forth in the "iNEMI Position Statement on the Definition of 'Low-Halogen' Electronics (BFR/CFR/PVC-Free)." Plastic parts contain <1000 ppm (0.1 percent) of bromine (if the Br source is from BFRs) and <1000 ppm (0.1 percent) of chlorine if the Cl source is from CFRs, PVC or PVC copolymers. All printed circuit board (PCB) and substrate laminates contain bromine/chlorine totaling less than 1,500 ppm (0.15 percent), with maximum chlorine of 900 ppm (0.09 percent) and maximum bromine of 900 ppm (0.09 percent). Service parts after purchase may not be BFR/CFR/PVC-free. Exclude peripheral accessories.

² Exclude Latitude 3XXX Series