



Restricted Substances for Hardware Products

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H00594 Revision History

Revision	Date	ECO	Description
A	2/17/00		Production Release
B	7/6/00	5319	Revised sections 2, 2.1 & 2.2 per ECO
C	7/7/00	5411	Corrected version for ECO 5319.
D	3/12/01	5520	Revised section 2.1 per ECO
E	2/21/02	5700	Revised all sections per ECO
F	11/11/04	C08547	Revised all sections per ECO
G	05/06/05	C09734	Added Reportable Substances Added requirements for equipment
H	08/14/06	C15709	Added Phthalates to Table B per ECO

Document References:

Microsoft Internal
H00642: Restricted Substance Control System
H02446: Microsoft Approved Analytical Labs
Analytical Methods
Please refer to Microsoft Document H02446, Microsoft Approved Analytical Labs, for information on methods and/or requirements.

Document Scope:

This document specifies restrictions on substances and materials used in the manufacture of Microsoft hardware products and equipment. This specification is applicable to all Microsoft hardware products and equipment unless specifically exempted by Microsoft. The listed restrictions apply to all materials purchased for use in Microsoft hardware products and equipment, including all constituents of parts, components and other materials. This specification also bans the use of certain ozone depleting substances during the manufacture of parts, components, materials and products purchased by Microsoft. This document is intended to ensure compliance with worldwide regulatory and customer requirements regarding banned and reportable substances, and is updated as required to reflect changing requirements. Please contact Microsoft to confirm the current release version of this document.

Labels that are attached to MS products such as certificates of authenticity (COA) are considered to be part of the product and hence subject to the requirements of H00594; and not subject to the requirements of S02689. Labels attached to packaging such as the COA are conversely considered to be part of the packaging. As such, they are subject to the requirements of S02689 restricted substances and not subject to the requirements of H00594. As a point of clarification, the requirements in S02689 regarding percent recyclable material do not apply to labels because they are not composed of paperboard or corrugated fiber board.

This document is a partner to the Microsoft Restricted Substance Control System Specification H00642 ("H00642") which outlines testing and certification requirements in support of the restrictions below. Compliance with H00642 may also require analytical test reports demonstrating background limits for lead, cadmium, and other restricted substances. Refer to Microsoft Specification H00642 for Supplier's Declaration of Conformity (SDoC) documentation and analytical reporting requirements.

This specification does not apply to product packaging or shipping materials, which are covered by Microsoft specification S002689. This specification also does not apply to optical media, CD-ROM and DVD, as they are not regulated as either packaging or hardware.

SECTION A: Restricted Substances

Substances listed in Section A shall not be intentionally added to materials used in Microsoft hardware products and equipment in the restricted applications; nor, in the case of ozone depleting substances, used in the manufacture of Microsoft hardware products and equipment. Background limits in Section A provide for trace amounts of naturally occurring or unintentional impurities in materials only. See Section C for Battery Content Restrictions.

TABLE A: Restricted Substances

Restricted Substance	Legal and/or Regulatory References	Restricted Applications	Background Limit Weight % (PPM)
Lead and lead compounds	RoHS Directive (2002/95/EC) for electronic components and California Proposition 65 for external plastics/cables.	All Applications	In PVC and Plastics: 0.0100 (100 PPM) In all other materials: <u>(See Notes A1 & A2 on RoHS Substances)</u> 0.1000 (1000 PPM) See Microsoft Document H02446, Microsoft Approved Analytical Labs, for test method requirements for PVC and plastics
Cadmium and cadmium compounds	RoHS Directive (2002/95/EC) for electronic components	All Applications <u>(See Note A1)</u>	0.0100 (100 PPM) See Microsoft Document H02446, Microsoft Approved Analytical Labs, for test method requirements for PVC and plastics
Mercury and mercury compounds	RoHS Directive (2002/95/EC) for electronic components	All Applications <u>(See Note A1)</u>	RoHS 0.1000 (1000 PPM)
Hexavalent chromium (chromium VI) and hexavalent chromium compounds	RoHS Directive (2002/95/EC)	All Applications <u>(See Notes A1 and A2)</u>	0.1000 (1000 PPM)
Polybrominated biphenyls (PBB)s	RoHS Directive (2002/95/EC)	All Applications <u>(See Note A1)</u>	0.1000 (1000 PPM)
Polybrominated diphenyl ethers (PBDEs)	RoHS Directive (2002/95/EC)	All Applications <u>(See Note A1)</u>	0.1000 (1000 PPM) Cumulative
Deca-brominated diphenyl-ethers (deca-BDE)	Microsoft Policy		
Asbestos and asbestos materials	76/769/EEC (+91/659/EEC)	All Applications	0.1000 (1000 PPM)
Azo-based dyes and colorants with carcinogenic amino compounds	76/769/EEC	All Applications	0.0030 (30 PPM)
Brominated dioxins/furans, Chlorinated dioxins/furans	Microsoft policy	All Applications	0.0000005 (5 PPB)
Chloroparaffins with chain length 10-13 C atoms, chlorine content > 50% by weight	76/769/EEC	All Applications	0.1000 (1000 PPM)

Restricted Substance	Legal and/or Regulatory References	Restricted Applications	Background Limit Weight % (PPM)
Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Hydrofluorocarbons (HFCs), Halons and Ozone Depleting Substances	Montreal Protocol, Japanese Law, US Clean Air Act, 76/769/EEC and amendments.	All manufacturing operations, including but not limited to solvents, cleaning agents, compressed gas packages, refrigerants, foam plastics	NA
Polychlorinated Biphenyls (PCBs), Polychlorinated Terphenyls (PCTs)	76/769/EEC and Japanese Law: (The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances, class 1)	All Applications	0.0050 (50 PPM)
Radioactive materials	Laws for the Regulation of Nuclear Source Material, Fuel Material, and Reactors 1986 (Japanese Law)	All Applications	NA
Tributyl tin (TBT) and, Triphenyl tin (TPT) compounds	Japanese Law: (The Law concerning the Examination and Regulation of Manufacture etc. of Chemical Substances, class 2)	All Applications	0.0100 (100 PPM)

Notes:

A1) RoHS SUBSTANCES: These substances shall not be present above trace background levels in homogeneous materials used in Microsoft hardware products, except as permitted by exemptions allowed per EU Directive 2002/95/EC "Use of Certain Hazardous Substances In Electrical and Electronic Equipment" ("RoHS Directive"), with the exception of deca-BDE, which, although an exempted application under EU RoHS, is restricted by Microsoft in the same manner as other PBDEs. Except as specified in writing by Microsoft, all Microsoft products shipped from factories after July 1, 2005 must be Lead-Free in accordance with the requirements of the EU RoHS Directive 2002/95/EC.

A2) Regarding test equipment manufactured for Microsoft: Due to the exclusion of category 9 equipment (Monitoring and control instruments) from RoHS, lead use is permitted except for restrictions on use in PVC and plastics specified in Section A, and hexavalent chromium use is permitted. All other Section A and Section C restrictions apply, however, Section B does not apply to test equipment manufactured for Microsoft.

SECTION B: Reportable Substances:

Substances listed in Table B shall be disclosed on the Supplier's Declaration of Conformity (H00642 Appendix A) if present in Microsoft hardware products above the stated reportable limit. Appendix A of this document includes sample lists of specific substances covered by the restrictions. These lists are intended to be examples only and are not exhaustive or exclusive lists of reportable substances.

Table B: Reportable Substances

Restricted Substance (See note B1)	Reportable Applications	Reportable Limit Weight % (PPM)
Beryllium Oxide	All Applications	0.1000 (1000 PPM)
All other Beryllium / Beryllium Compounds	All Applications	0.1000 (1000 PPM)
Brominated Flame Retardants (other than PBBs or PBDEs which are banned in Section A)	All Applications	0.1000 (1000 PPM)
Polyvinyl Chloride (PVC)	All Applications	0.1000 (1000 PPM)
Antimony/ antimony compounds	All Applications	0.1000 (1000 PPM)
Bismuth/ bismuth compounds	All Applications	0.1000 (1000 PPM)
Nickel (See note B2)	All External Applications	0.1000 (1000 PPM)
Certain Phthalates ² : di(2-ethylhexyl) phthalate (DEHP), dibutyl phthalate (DBP), benzyl butyl phthalate (BBP), di-isononyl phthalate (DINP), di-isodecyl phthalate (DIDP), di-n-octyl phthalate (DNOP), Dimethoxyethyl phthalate (DMEP)	All Applications	0.1000 (1000 PPM)
Selenium/ selenium compounds	All Applications	0.1000 (1000 PPM)

Notes:

B1) Please refer to the Electronic Industries Alliance (EIA) standard Joint Industry Guide (JIG), Annex F for the detailed chemical lists with CAS-Numbers.

B2) Please refer to the JIG, Annex B for the details on Nickel in external applications.

Reference JIG at on of the following websites:

www.eia.org/new_policy/jig_download.phtml

www.jedec.org/download/search/ACF276.pdf

SECTION C: Battery Content Restrictions:

Section C specifies material restrictions for batteries supplied to Microsoft. Background weight % limits in Table A provide for trace amounts of naturally occurring or unintentional impurities in materials only.

Table C: Battery Content Specification:

Battery Material	Background Limit
Lead and its compounds	0.0400% (400 PPM)
Cadmium and its compounds	0.0020% (20 PPM)
Mercury and its compounds	0.0005% (5 PPM)