Guideline FSC 03230

Fully replaces SN 03230-X

Environmentally conscious product design and development - Overview, application, requirements, checklists -

Contents

Annexes (informative)

1. Scope

The present guideline applies throughout Fujitsu Siemens Computers (FSC).
It describes environmentally conscious product design and its integration into the product development process, and shall be applied during planning, development, introduction *and recycling* of hardware products within the company.
This guideline is valid for all end user products and electronically assembled components (e.g. optical disk drive, hard disk drive, power supply, mainboard, add-on cards, etc.), which are designed within FSC. The guideline is partially applicably for procured products - OEM (original equipment manufacturer) products and reseller products (not FSC branded). The relevant parts are marked. Products, which meet this guideline, maintain the legal requirements of recovery, reuse and recycling of the the European Directive WEEE (waste electrical and electronic equipment).
The annexes of this guideline are for the support of the requirements and have only an informative character. The internal processes stated in this guideline are in line with international and national standards and legislation. The guideline may therefore also be made available outside the company.
The objective is to assure the environmental compatibility of our products throughout the entire product life cycle.
The guideline offers the facility for adapting environmentally conscious product design flexibly to different product and customer groups.

Comments:
The guideline has been drawn up for both internal and external users. Both groups may use the Internet links. Access to Intranet pages or to copyrighted documents is reserved for FSC personnel. No guarantee can be provided that the links are up-to-date or complete, as this can be checked only during revision of the entire guideline document. Links to external sites contain exclusively third-party content, for which the issuers of this document assume no responsibility.
Documents, which are integrated into the guideline, are represented by symbols. An opening of the documents is effected by a "double click" on the symbols.

2. Release and updates

This guideline is released and updated by FSC TQM / SO TC. The latest version can be found on the Intranet at the following address: http://my.fsc.net/tqm
Should the external standards referred to in the guideline be amended, a new version of the guideline will be issued and the amended standard included. *Changes in the new issue are marked by lines at the margin and underlined cursive font.* Requests for changes to the content of this guideline should be submitted to FSC TQM or FSC SO TC. Obsolete versions shall be retained for at least 10 years.

Release status:

The present guideline replaces the former standard SN 03230 governing environmentally conscious product design and development, which has been thoroughly edited and restructured and its content revised.

Issue	**Month/ year**	**Content**	**Generated** Signature Depart-ment	**Release** Signature Department
Previous issue of standard SN 03230		Standard SN 03230: Archiv http://my.fsc.net/PortalB/DesktopDefault.aspx?tabid=4651&tabindex=-1		
01	06-2002	FSC Guideline 03230 governing environmentally con-scious product design and devel-opment	signed B. Kämpfle VP CC TC	signed A. v. Hammerstein CEO signed H.-G. Riegler-Rittner TQM
02	01-2003	FSC Guideline 03230	signed Birgit Kämpfle VP CC TC	signed H.-G. Riegler-Rittner TQM
03	04-2004	FSC Guideline 03230	signed Birgit Kämpfle VP CC TC	signed H.-G. Riegler-Rittner TQM
04	03-2005	FSC Guideline 03230	signed Birgit Kämpfle VP CC TC	signed H.-G. Riegler-Rittner TQM
04a	11-2006	FSC Guideline 03230	signed Birgit Kämpfle VP CC TC	signed H.-G. Riegler-Rittner TQM
04b	07-2007	FSC Guideline 03230	signed Birgit Kämpfle SO TC PS	signed H.-G. Riegler-Rittner TQM
05	*07-2007*	*FSC Guideline 03230*	*signed* *Birgit Kämpfle* *SO TC PS*	*signed* *H.-G. Riegler-Rittner* *TQM*

Table 1: Release status

3. Requirements upon environmentally conscious product design

3.1 Standard requirements

The guidelines and standards stated in the table below shall be observed during planning, development and launch of hardware products. The latest editions of the standards can be accessed from the corresponding links in the Table.
Whether the standard requirements (marked X) in the table are supplemented by further requirements (marked (X)) is indicated in the Product Agreement (see also 5. "Integration of the ecological requirements into the product development process")

	Requirements	Professional PC	Consumer PC	Thin Clients	Workstation	Profesional Monitor	Consumer Monitor	Professional Keyboards	Consumer Keyboards	Professional Notebooks Tablet PCs	Consumer Notebooks	Accessory / Components	Primergy / Primepower	BS 2000	Storage Systems	Systemboards
1	*Hazardous substances, list of prohibited substances, list of substances to be avoided* sn36350-2.pdf	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	Ecological requirements for packaging sn36350-5.pdf	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	Material requirements for plastic products in accordance with 3.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	*Chlorine-free bleached paper for printed product documentation supplied along with the device*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5 5a	Conformable to "Blue Angel" for Computers without requirement for internal power supply in clause 3.2.1.1 RAL UZ 78	X	(x)	(x)	(x)	X	(x)	X	(x)	X	(x)					
5b	Server, Workstations and Mainframes in accordance to the general requirements, described in chapter 3.1 of RAL UZ 78				X								X	X	X	

	Requirements	Professional PC	Consumer PC	Thin Clients	Workstation	Profesional Monitor	Consumer Monitor	Professional Keyboards	Consumer Keyboards	Professional Notebooks Tablet PCs	Consumer Notebooks	Accessory / Components	Primergy / Primepower	BS 2000	Storage Systems	Systemboards
6	Conformable to Nordic Ecolabelling (Nordic Swan Version 4.1) of Personal Computers	X	(x)		(x)	X	(x)	X	(x)	X	(x)					
7	Conformable to Swan labelling of Printed Wiring Boards (Version 1.1)															(x)
8	Conformable to TCO´99 Keyboards (ecology requirements)							(x)	(x)							
9	Conformable to TCO´05 Desktop Computers	(x)	(x)		(x)											
10	Conformable to TCO´05 Notebooks TCO Position paper on prismatic panels and glare panels glare_planets.pdf									(x)	(x)					
11	Conformable to TCO´03 CRT Displays 2.0 TCO´03 Flat Panel Displays					(x)	(x)									
12	Conformable to Energy Star for Computer; Version 4.0 Tier 1 Energy Star for Monitors Version 4.1 Tier 2 (equal to Group for Energy Efficient Appliances (GEEA))	(x)	(x)		(x)	(x)	(x)			(x)	(x)		(x)			
13	ECO-Declaration eco_declaration.doc	X	X	X	X	X	X	X	X	X	X		X	X	X	

Table 2: Requirements upon environmentally conscious products

3.2 Plastics

3.2.1 Reduction in the diversity of plastic types for enclosure components

Large enclosure components manufactured from plastics must be manufactured from a homopolymer or copolymer. Polymer blends (alloys) are permissible. Polymer blends are special mixtures of two or more plastics in which the characteristics are superior to those of the pure plastics which they comprise.
The plastic enclosures shall employ not more than two polymers or polymer blends, which shall be separable from each other. A maximum of four different types of plastic may be used for these parts.
Large enclosure components manufactured from plastics shall be designed such that the plastics employed can be re-used for the manufacture of high-quality, long-life plastic products by means of existing technology.

3.2.2 Material requirements for plastic products

Plastic products which promote dioxin or furan formation shall not be employed. Therefore polymers containing halogens and additives involving organic halogen compounds, in particular for use as flame retardants, shall not be permitted.
Except for process-induced, technically unavoidable impurities the plastic must be

- free from halogenated polymers and additives of halogenated compounds (except for fluoroorganic additives, if the content of fluoroorganic additives does not exceed 0.5 weight per cent)
- free from substances forming dioxin and furan.
- free from additions which are classified as (defined in Directive 67/548/EEC)
  - carcinogenic according to EC Category Carc.-Cat.1, Carc.-Cat.2, Carc.-Cat.3
  - mutagenic according to EC Category Mut. Cat.1, Mut. Cat.2 or Mut. Cat.3
  - teratogenic according to EC Category Repr. Cat.1, Repr. Cat.2, Repr. Cat.3
- free from PBB (polybrominated biphenyls), PBDE (polybrominated biphenyl ethers) or chlorinated paraffins.

Flame retardants shall not be assigned to one or more of the following risk phrases
(67/548/EEC classification, packaging and labelling of dangerous substances):

- R45: may cause cancer
- R46: may cause heritable genetic damage
- R60: may impair fertility
- R61: may cause harm to the unborn child
- *R50/51/53: very toxic or toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment*

Furthermore, the plastic products utilised should consist of at least 5 % by weight of recycled plastics. Authorised recycled material are grained plastic residues as well as waste from recycled plastic products.
For all plastic products >25g is a manufacturer declaration in accordance to below form required.

Manufacturer's Statement of Plastic Materials manufacturers_statement.doc

Table 3: Requirements upon plastics

The following are exempted from the above provision:

- unavoidable, process-induced, technological impurities;
- fluoroorganic additives (such as antidripping reagents) used to improve the physical properties of plastics, provided that they do not exceed 0.5% by weight;

- Fluoroplastics, PTFEs for example.
- plastic products with a weight < 25 g (exemption does not apply to caps of keyboards); but if possible all plastic products (including m < 25 g) should meet the material requirements specified above.

3.2.3 Marking of plastics

Plastics > 25 g in weight shall be marked in accordance with ISO 11469 and ISO 1043 (ISO 1043-1, ISO 1043-2, ISO 1043-3 and ISO 1043-4). Marking in this context shall also apply to plastics with a flat surface > 200 mm^2.

Note: The ISO standards referred to are also available as national standards (e.g. DIN ISO or DIN EN ISO). The ISO regulations referred to are undated references; the most recent issue of the ISO standard concerned therefore applies.
For examples of plastic marking, refer to Annex 3.

4. Check lists

4.1 Check list “Recyclable Design”

The Blue Angel (RAL UZ 78) check list contains, in the principles, the requirements for recyclable product design. The check list “Recyclable Design” of RAL UZ 78, which are contained in the table below, apply to all FSC IT-products.

Note: The present guideline covers all aspects of VDI 2243 “recycling-oriented product development” from 28-06-2002.

Apply to all FSC IT-products	check-list_recyclable_design.doc

Table 4: Check list “Recyclable Design”

4.2 Check list *for all products, which are designed and manufactured within FSC*

	Item	Compliance? Yes	Compliance? No	Comments
1	Are all legal material prohibitions kept? (Relevant selection for IT Industry: list of prohibited substances in accordance with SN 36350-2)			Requirements must be observed.
2	Is the product **free of** materials on the list of substances to be avoided in accordance with SN 36350-2?			
3	Has confirmation of observance of the lists of prohibited substances and substances to be avoided been requested from the manufacturer/supplier? (Template see word-file in Annex 4.1)			
4	Have the ecological requirements for packaging according to SN 36350-5 been met?			
5	Do the housing plastic products consist of no more than two types of polymer that are separable?			
6	Are the material requirements for plastic products kept in accordance with 3.2.2?			
7	Is the "Manufacturer´s Statement of Plastic Materials" available (3.2.2)? (Template see word-file in 3.2.2)?			
8	Are the requirements of the Blue Angel check list "recyclable design" in 4.1 met?			
9	Is the product conformable to the Ecolabel "Blue Angel"?			
10	Is the product conformable to the Ecolabel "Nordic Swan"?			
11	Is all required information for the ECO Declaration available?			
12	Is the product compliant to RoHS? (Template see word-file in Annex 5)			
13	Is the "Manufacturer´s certification for Lithium (Ion) Battery" available? (Template see word-file in Annex 6)			
14	*Is the "Information for users" (implementing WEEE Article 10) available? (Example see Annex 7.1)*			
15	*Is the "Information for treatment facilities (implementing WEEE Article 11)" available? (Template see word-file in Annex 7.2)*			

	Item	Compli-ance?		Comments
		Yes	No	
16	*Is the product marked in accordance to WEEE Annex IV (crossed-out wheeled bin – EN 50419)?*			
17	*Does the user manual contain all necessary information for batteries?* - Type of the battery and description of the battery change - Description, how permanently installed batteries can be safely removed. - Information about returning batteries			
18	Is there a renunciation on plastic products > 25 g with paint/metallization for design reasons?			
19	Can components be removed without damage?			
20	Are product labels easily separable or manufactured from a material, that doesn't disturb the material recycling of the product?			
21	Has preference been given to standard components and subassemblies?			
22	Can the product be dismantled without risk of injury?			

Table 5: Check list "Environmentally conscious product design"

Assessment of the check points

The responses should reflect the state of the art at the time of the assessment. Responses involving a clear "Yes" or "No" may not always be possible, however, as they are influenced by a number of factors and circumstances. For example:

- No other technical solution possible
- Equivalent processes not yet available/developed to maturity
- Future developments in recycling procedures and/or future legislation
- Observance of economic/ecological factors

Where necessary, fulfilment of the requirements must be indicated as a percentage.

Should the rules not be observed, a reason must be indicated, as optimization and/or modification at a later stage are often possible. The reason should be entered under "Comments". The same applies to non-relevant points.
Should an ecolabel be required by virtue of the Product Agreement, the requirements of the corresponding principles for issue must be observed. *The current requirements of the ecolabel "Blue Angel", "Nordic Swan", "TCO" and "Energy Star" can be downloaded from the web. The corresponding link is integrated in "Table 2: Requirements upon environmentally conscious products" (Chapter 3.1 of this guideline)*

4.3 Check list: "Mandatory manufacturers declarations for procured products"

	Mandatory declarations	Comments	Apply also to "Reseller"
1	*Has confirmation of observance of the lists of prohibited substances and substances to be avoided been requested from the manufacturer/supplier? (Template see word-file in Annex 4.1)*	Necessary for all products and components.	Yes: Confirmation of observance of the list of prohibited substances
2	*Confirmation of observance of the ecological requirements for packaging according to SN 36350-5*	Necessary for all products and components	no
3	*Declaration of RoHS compliance. (Template see word-file in Annex 5)*	Necessary for all products and components	yes
4	*Information for ECO Declaration? (Templates see word-files in Annex 8)* - *Eco Template* - *Appendix 1 - "Manufacturer´s Statement of Plastic Materials" for plastic parts >25g* - *Appendix 2 - "Manufacturer´s certification for Lithium (Ion) Battery"*	Necessary for all end user products.	no
5	*"Information for treatment facilities (implementing WEEE Article 11)" (Template see word-file in Annex 7.2)*	Necessary for all end user products.	yes
6	*Confirmation of observance of "principles for recyclable product design" in 4.1. (Check list see doc-file in 4.1)*	Necessary for all end user products.	no
7	*Confirmation of observance of this FSC Guideline in the latest version.*	Necessary for all products and components.	no
8	*Is the product marked in accordance to WEEE Annex IV (crossed-out wheeled bin)?*	Necessary for all end user products .	yes
9	*Does the user manual contain all necessary information for batteries?* - Type of battery and description of battery change - Description, how permanently installed batteries can be safely removed. - Information about returning batteries	Necessary for all end user products.	yes
10	Is the "Information for users" (implementing WEEE Article 10) available? (Example see *Annex 7.1*)	Necessary for all end user products.	yes

Table 6: Mandatory manufacturers declarations for procured products

4.4 Check list: “Optionally manufacturers declarations for procured products”

	Optionally declarations	
1	*Confirmation, that the product ist fully compliant to the German ecolabel “Blue Angel (RAL UZ 78)”.*	For end user products, if “Blue Angel” is demanded in the product agreement.
	“Declaration of the Plastics Manufacturer on Plastic Materials” in accordance with the following Blue Angel Template. ral_uz_78-plastic_confirmation.doc	
2	*Confirmation that the product ist fully compliant to the Nordic ecolabel “Nordic Swan”.*	For end user products, if “Nordic Swan” is demanded in the product agreement.
	Material Safety Data Sheet (MSDS) from the used flame retardants in plastic parts > 25g.	
	Following Nordic Swan Templates, signed by the manufacturer: nordic_swan_declarations.pdf	
3	*Confirmation that the product ist fully compliant to the ecolabel “Energy Star”.*	For end user products, if “Energy Star” is demanded in the product agreement.
4	*Confirmation that the product ist fully compliant to the ecolabel “TCO”.*	For end user products, if “Energy Star” is demanded in the product agreement.
5	*Confirmation that the product ist fully compliant to legal requirements outside EMEA sales. (e.g. compliance with “China RoHS”).* *(A legal overview at the time of release of this guideline is in Annex 9)*	For end user products, which should market ouside EMEA.

Table 7: Optional manufacturers declarations for procured products

5. Integration of the ecological requirements into the development/product launch process

5.1 Product specification

The ecological requirements upon the product to be developed shall be defined in the product specification as the output from the product definition process. The requirements shall be defined irrespective of whether the product is developed by FSC itself or purchased from other parties.

5.1a Obligatory requirements

Obligatory requirements are marked “X” in Table 2 in chapter 3, "Requirements upon environmentally conscious product design". They comprise all binding minimum requirements, which are based essentially upon the statutory requirements of the EU, Germany, and certain other countries with supplementary ecological requirements such as Sweden, Switzerland, and the USA.
Further-reaching requirements specific to FSC are also defined for certain product groups.

5.1b Optional requirements

The optional requirements shall be defined for specific product and customer groups.
All requirements shall be documented in the Product Agreement.
Table 2 in chapter 3, "Requirements for environmentally conscious product design", serves as a recommendation. Further standards may also be included. Responsibility for definition of the requirements rests with Product Management.

5.2 Review of observance of ecological requirements

Observance of the ecological requirements shall be reviewed in the course of the development process by the parties responsible for the product and for components, and the results of the review entered in the check lists provided under chapter 4.
The review shall be conducted upon conclusion of hardware development (MS 30) or of OEM qualification.
The following points shall be considered:

- Has observance *legal material prohibitions (relevant selection for IT Industry: list of prohibited substances) and substances to be avoided (list of substances to be avoided)* been agreed with all part and component suppliers?
- Have suppliers who are already qualified been issued with the latest versions of the lists of prohibited substances and substances to be avoided?
- Are component-specific and material-specific requirements, e.g. Blue Angel, Nordic Swan, etc., available and documented?
- Review of other requirements in accordance with Chapter 5.1.
- Observance of the requirements upon plastics.

Purchasing shall ensure observance of the lists of prohibited products and products to be avoided in the course of sourcing of components and subassemblies. A specimen letter can be found in Annex 4.

5.3 Product eco-certification

5.3.1 Product ECO Declaration

A manufacturer's declaration of the environmental characteristics (ECO Declaration) shall be issued for each *FSC-branded end user product* (business and consumer product) prior to release for series production (MS 70).
The declaration process shall be initiated by the Project Manager, for example through the FSC Center for Tests and Compliance in Augsburg. Following corresponding review of the products environmental characteristics, they shall be documented in the eco-declaration and placed on the Intranet together with the product-specific certificates, for example on the VIL server.
Example: http://extranet.fujitsu-siemens.com/vil/pc/vil/zertifikate_abg/ta06133.pdf

5.3.2 Environmental licences in accordance with the ecolabel

Where products are to be certified in accordance with an ecolabel (Blue Angel, Nordic Swan, TCO, etc.), the Project Manager or the relevant sales organization shall launch the process following release for series production (MS 70), for example through the FSC Center for Tests and Compliance in Augsburg. Following review of observance of the principles for issue, application shall be made for the ecolabel. All product documentation required for application for the ecolabel shall be made available by the Project Manager. The ecolabel certificates shall be placed on the Intranet together with product-specific certificates, for example on the VIL server.
Example: http://extranet.fujitsu-siemens.com/vil/pc/vil/zertifikate_abg/ta05628.pdf

Annex 1: Environmental standards and legislation

International Standards

IEC 1429	Marking of secondary cells and batteries with the international Recycling symbol ISO 7000-1135
IEC Guide 109	Environmental Aspects – Inclusion in Electro technical Product Standards
ISO 11469	Plastics -generic identification and marking of plastic products
ISO 1043-1	Plastics - symbols and abbreviated terms - Part 1: Plasticizers Basic polymers and their special characteristics
ISO 1043-2	Plastics - symbols and abbreviated terms - Part 2: Fillers and reinforcing materials
ISO 1043-3	Plastics - symbols and abbreviated terms - Part 3: Plasticizers
ISO 1043-4	Plastics - symbols and abbreviated terms - Part 4: Flame retardants
ISO 9241-3	Ergonomic requirements for office work with visual display terminals (VDTs) – Part 3: Visual display requirements
ISO 9241-4	Ergonomic requirements for office work with visual display terminals (VDTs) – Part 4: Keyboard requirements
ISO 9241-7	Ergonomic requirements for office work with visual display terminals (VDTs) – Part 7: Requirements for display with reflections
ISO 9241-8	Ergonomic requirements for office work with visual display terminals (VDTs) – Part 8: Requirements for displayed colours
ISO 9241-9	Ergonomic requirements for office work with visual display terminals (VDTs) – Part 9: Requirements for non-keyboard input devices
ISO 13406-2	Ergonomic requirements for work with visual displays based on flat panels - Part 2: Ergonomic requirements for flat panels displays
ISO 9995	Information technology – Keyboard layouts for text and office systems
ISO 7779	Acoustics – Measurement of airborne noise emitted by information technology and telecommunications equipment
ISO 9296	Acoustics – Declared noise emission values of computer and business equipment
ISO 14001	Environmental Management Systems – Specification
ISO 14020	Environmental labels and declarations – General principles
ISO 14021	Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)
ISO 14024	Environmental labels and declarations -- Type I environmental labelling -- Principles and procedures
ISO/TR 14025	Environmental labels and declarations -- Type III environmental declarations
ISO 14040	Life Cycle Assessment – General Principles and Practices
ISO/TR 14062	Environmental management - Integrating environmental aspects into product design and development
EN 50419	Marking of electrical and electronic equipment in accordance with article 11(2) Directive 2002/96/EC (WEEE)

German standards

DIN 6120-1	Marking of packing materials and packages for reclaiming recycling; plastics packaging materials and packages; graphic symbols
DIN 6120-2	Marking of packaging and packaging materials for recycling purposes - Plastics packaging and packaging materials - Part 2: Supplementary marking
VDI 2243	Recycling oriented product development

VDI 2343-X	Recycling of electrical and electronic products

Ecolabel

RAL-UZ 78	Basic criteria for the award of the environmental Label (Blue Angel)- Computers (Products: System unit, Portable Computer, Keyboard, Monitor)
Nordic Ecolabelling	Ecolabelling of Personal Computers (incl. Portable Computer and Monitor) – "Nordic Swan"
TÜV ECO Kreis	German Ecolabel from TÜV Rheinland: Requirements for Displays (CRT, Flat Panels) Personal Computers, Keyboards and Notebooks/Laptops
TCO´99	Requirements and test methods for environmental labelling of - Displays (CRT) Report 1 - Display (flat) and portable computers, Report 2 - System units, Report 3 - Keyboards, Report 4 - Ecology for displays, portable computers, system units and Keyboards, Report 5
TCO´03	Requirements and test methods for environmental labelling of Cathode Ray Displays (CRT) and Flat Panel Displays (FPD)
TCO´05	Notebook Computers
TCO´05	Desktop Computers
TCO´06	Media Displays (Modified and extended version of TCO 03 FPD version 3.0. A Media display can be a Flat Panel TV or a multifunction display intended to be used for e.g. monitoring or in other ways render moving images.)
EPA	Energy Star – labeled office equipment
GEEA	Energy label: Group of Energy Effiicient Appliance
2001/686/EC	Commission Decision of 22 August 2001 establishing the ecological criteria for the award of the Community eco-label to personal computers
2001/687/EC	Commission Decision of 28 August 2001 on establishing ecological criteria for the award of the Community eco-label to portable computers
2005/341/EC	Commission Decision of 11 April 2005 establishing ecological criteria and the related assessment and verification requirements for the award of the Community eco-label to personal computers
2005/343/EC	Commission Decision of 11 April 2005 establishing ecological criteria and the related assessment and verification requirements for the award of the Community eco-label to portable computers

Laws and regulations

Europe

67/548/EEC	Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances
76/769/EEC	Council Directive of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations

Amendments to 76/769/EEC listed by EUR Lex:
http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=en&numdoc=31976L0769&model=guicheti

90/128/EEC — Commission Directive 90/128/EEC of 23 February 1990 relating to plastic materials and articles intended to come into contact with foodstuffs

91/157/EEC — Council Directive 91/157/EEC of 18 March 1991 on batteries and accumulators containing certain dangerous substances.

Amendments to 91/157/EEC:
98/101/EC adapting to technical progress Council Directive 91/157/EEC

94/62/EC — European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste

Amendments to 94/62/EC:
97/129/EC (identification system for packaging materials)
99/177/EC (heavy metal concentration levels on packaging)
2004/12/EC
2005/20/EC

All legal documents based on 94/62/EC:
http://eur-lex.europa.eu/Result.do?direct=yes&lang=en&col=LB_DN&value=31994L0062&whereihm=Legal basis:31994L0062

Consolidated versions 2005-04-05:
http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1994/L/01994L0062-20050405-en.pdf

00/2037/EC — Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer

2002/95/EC — Directive 2002/95/EC of the European Parliament and of the council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

All Commission Decisions for the purposes of adapting to technical progress, the Annex to Directive 2002/95/EC of the European Parliament and of the Council regarding exemptions for applications:
http://eur-lex.europa.eu/Result.do?direct=yes&lang=en&col=LB_DN&value=32002L0095&whereihm=Legal%20basis:32002L0095

2002/96/EC — Directive 2002/96/EC of the European Parliament and of the council of 27 January 2003 on waste electrical and electronic equipment (WEEE)

2005/32/EC — *Directive 2005/32/EC of the European Parliament and of the council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council (EUP)*

2006/66/EC — *Directive 2006/66/EC of the European Parliament and of the council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC*

Note: As a rule, the European Union (EU) Directives have been translated into the languages of the Member States.

Germany

BattV	Ordinance on the Return and Disposal of used Batteries and Accumulators (Batterieverordnung)
BedarfsgegV	Ordinance relating to plastic materials and articles intended to come into contact with foodstuffs (Bedarfsgegenstandsverordnung)
ChemG	Chemicals Act (Chemikaliengesetz)
ChemVerbotsV	Ordinance on the reorganization and amendments to the bans and restrictions on the production, putting into circulation and use of dangerous substances, preparations and products pursuant to § 17 of the Chemicals Act (Chemikaliengestz)
FCKW VerbotsV	Ordinance on the ban of certain ozone-depleting halogenated hydrocarbons (FCKW-Halon-Verbots-Verordnung)
GefStoffV	Ordinance on dangerous substances (Gefahrstoffverordnung)
KRW/ABFG	Act on waste avoidance, recycling and disposal; Article 1 of the Act on the promotion of recycling and on the securing of an environmentally-compatible waste disposal (Kreislaufwirtschafts- und Abfallgesetz - KrW-/AbfG)
VerpackV	Ordinance on the avoidance of package waste (Verpackungsverordnung)
ElektroG	*Act Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment (Elektro-* und Elektronikgerätegesetz)

Note: The acts and ordinances listed above are transposed EU directives and therefore constitute national law in Germany.

Sweden

SNFS 1992:15	Ordinance relating to deviations from the Ban on the Use of Cadmium for Surface Treatment or as a Stabilisator or as a Colouring Agent

Swiss

CH: StoV	Ordinance on substances (Stoffverordnung)

USA

Clean air act	Ozone Label Rule

China

China RoHS	Management Methods for Controlling Pollution Caused by Electronic Information Products Regulation
GB 18455-2001	Packaging Recycling Marks
SJ/T 11363-2006	Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products
SJ/T 11364-2006	Marking for Control of Pollution Caused by Electronic Information Products
SJ/T 11365-2006	Testing Methods Testing Methods for Hazardous Substances in Electronic Information Products

Korea

Packaging	*Rules on the standards of product packaging materials & methods*

Annex 2: Definitions of terms

Dangerous substances
In the sense of the chemicals act (ChemG) sect. 19 (2), dangerous substances are:
"Substances, preparations and products from which dangerous or explosive substances or preparations can result or are released during manufacture or employ."
Section 3a of the same law defines which properties are classified as dangerous: for example, explosive, poisonous, highly inflammable, carcinogenic etc. are listed. Appendix I to the dangerous materials ordinance (GefStoffV) lists the physical - chemical - toxicological conditions leading to the classification.

End user products
In the sense of this guideline, end user products are all products (appliances, components, accessories), that FSC deliver to business or individual (consumer) users. This definition covers also storage products and servers for the operating of data centers.

Further application
Is the reuse of a used product (old part) for a different purpose, for which it was originally not intended. Its form may be retained and/or the product may be modified to a limited extent. It may already have been manufactured with the future use in mind.
Examples: mustard glass used as a drinking glass; plastic or paper shopping bag used as a garbage bag

Further utilization
Is the utilization of old materials, processing waste and process materials in a production process which is not identical to the one in which the original product was manufactured. This results in materials or products with different properties (secondary materials) or of a different form. It includes chemical recycling of plastics.
Example: Plastic waste used as filler

Manufactures
Substances or preparations which have received a particular shape, surface or form during production. These affect their function more than their chemical composition does, as such or in joined form.

Material recycling
Not retaining the form of the product (see reutilization respectively or further utilization)

Plastic products
Articles or stock shapes of plasic materials intended for useful purposes.

Product recycling
Retaining the form of the product (see reuse respectively or further application)

Preparations
Mixtures or solutions consisting of two or more substances.

Products
Products pursuant to this standard are products, especially raw materials, auxiliary materials, consumables, moulded materials, active and passive components, printed circuit boards as well as complete devices or systems.

Placing into market
In the sense of section 3 (9) ChemG, placing into market means:
"Handing over to third party or provision for third party: taking into the area within which this law is valid is considered as placing into market unless it is only transit traffic in accordance with number 8 of the second half-sentence."
Manufacturers, warehousers, carriers and retailers may be possible parties for placing substances into market. Procedures of placing into market are stock keeping, offering for sale, conclusion of delivery contracts and transferral of property.

Reuse
Is the use of a used product (old part) for the same purpuse as before, while retaining its form without (or with limited) changes to its components.
Examples: refill packaging, tire retreading, repair

Reutilization
Is the utilization of old materials, processing waste and process materials in a production process which is identical to the one in which the original product was manufactured. This includes chemical recycling of plastics to obtain base materials. Reutilization results in materials that are mainly equal in quality to the original materials.
Examples: metal scrap: turnings; thermoplastics: sprue

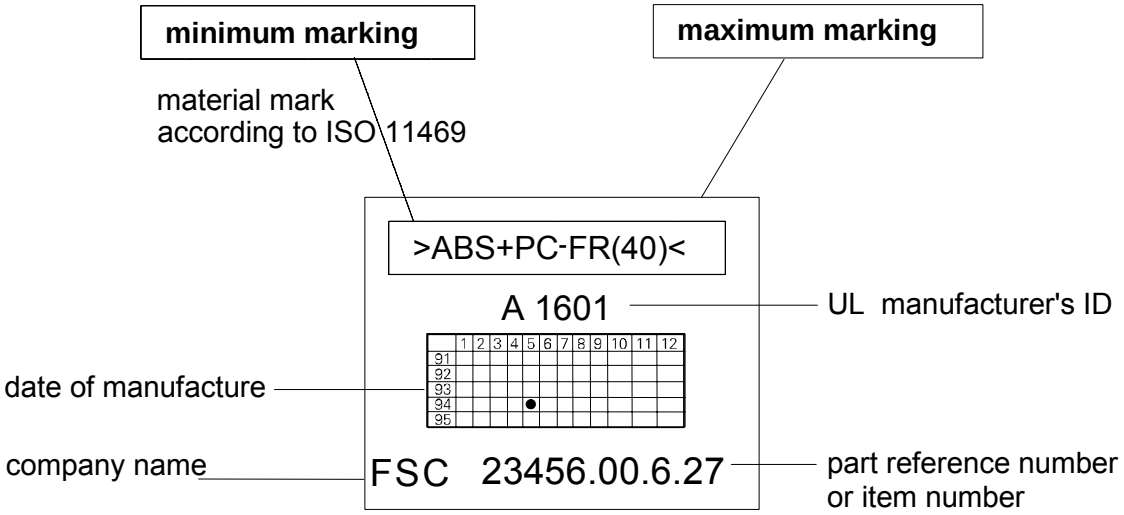
Substances
Natural or man-made chemical elements or chemical compounds, including auxiliary substances required to maintain stability, and any contamination resulting from the production process, not including carriers that can be separated from the substance without affecting its stability and without changing its composition.

Annex 3: Examples for marking of plastic products

1. Examples for marking of plastic products according to ISO 11469 (referring to ISO 1043)

plastic product	material mark	comments
single polymer	>ABS<	abbreviated term for acrylonitrile-butadiene-styrene (ISO 1043-1)
polymer blends or alloys	>PC+ABS<	main component in first place
single polymer containing flame retardants	>ABS-FR(40)<	ABS containing flame retardants from Code number 40 (Code 40 = halogen-free organic phosphorus compounds; ISO 1043-4)
compositions with a single filler or reinforcing material	>PP-MD30<	Polypropylene containing 30% by mass of mineral powder (abbreviated term for filler ISO 1043-2)
compositions containing plasticizers	>PVC-P(DBP)<	PVC containing dibutyl phthalate as plasticizer (abbreviated term for plasticizer ISO 1043-3)

2. Arrangement of the mark



Annex 4: Standard letter to FSC suppliers
- Observance of the lists of prohibited substances and substances to be avoided -

Dear Sir or Madam,

Contact with hazardous substances in products requires safety measures for the protection of human beings and the environment. This means that substances banned by law are not to be employed as a matter of principle. No hazardous substances which lead to impact on or nuisance to the environment are to be released during proper use of our products. In particular, hazardous substances, which present an obstacle to the recycling or disposal process and thus contribute towards increased costs, are to be avoided. The environmental compatibility of our products therefore serves as a hallmark of the company.

Fujitsu Siemens aims to avoid or replace hazardous substances and compounds in its products to the extent to which this is possible. We do not consider the observance of statutory requirements to be open to question. The enclosed informative list of prohibited substances provides a simplified overview of the prohibitions and restrictions upon hazardous substances in the EU and in other countries. It contains a selection of substances relevant to products in the IT and communications industry, the distribution of which is subject to the statutory prohibitions stated in the list of prohibited substances.

In addition to the prohibited substances, the avoidance of certain other substances is also recommended even though the legislator may not yet have placed restrictions upon their distribution within products. The need for such avoidance exists for example when the use of such substances could give rise to risk during the manufacture, use or disposal of products. The list of substances to be declared and avoided contains substances in this category. Particular importance is attached to compulsory declaration of the substances stated when present in products.

Please sign and return the enclosed confirmation (Appendix: Supplier's confirmation of list of prohibited substances and of substances to be avoided).

Kind Regards,

Fujitsu Siemens Computers

Note: The supplier is to be provided with the lists of prohibited substances and substances to be avoided.

Annex 4.1: Supplier's confirmation of list of prohibited substances and of substances to be avoided

hazardous_substances.dot

Annex 5: Manufacturer´s declaration of RoHS compliance

Declaration of RoHS compliance (2002/95/EC)

We hereby confirm and assure that the product

☐ is *compliant with* the maximum allowable impurity levels in homogeneous material[1] being considered for Directive 2002/95/EC RoHS (restriction on the use of certain hazardous substances in electrical and electronic equipment) for the following substances:

- Lead (≤ 0.1 % by weight)
- Mercury (≤ 0.1 % by weight)
- Cadmium (≤ 0.01 % by weight)
- Hexavalent chromium (≤ 0.1 % by weight)
- polybrominated biphenyls (PBB) (≤ 0.1 % by weight)
- polybrominated diphenyl ethers (PBDE) (≤ 0.1 % by weight)

☐ contains one or more of the six in the RoHS specified substances, *because of exempted applications.*

	substance	concentration in homogeneous material[1]	located in *(please specify the RoHS exemption)*
☐	Lead	> 0.1 % by weight	
☐	Mercury	> 0.1 % by weight	
☐	Cadmium	> 0.01 % by weight	
☐	Hexvalent chromium	> 0.1 % by weight	
☐	polybrominated biphenyls (PBB)	> 0.1 % by weight	
☐	polybrominated diphenyl ethers (PBDE)	> 0.1 % by weight	

Name and

address of the manufacturer:

Date:

Responsible person:

Signature:

Company Stamp or Seal:

[1] Homogeneous material means a material that cannot be mechanically disjointed in single materials

rohs.doc

Annex 6: Manufacturer´s certification for Lithium (Ion) Battery

MANUFACTURER'S CERTIFICATION FOR LITHIUM (ION) BATTERY

Battery model name:	
☐ lithium battery ☐ lithium ion battery	
☐ ≤ 2g (lithium metal or lithium alloy); 8g (lithium ion) ☐ > 2g (lithium metal or lithium alloy); 8g (lithium ion)	

Cells model name:	
☐ lithium cell ☐ lithium ion cell	
☐ ≤ 1g (lithium metal or lithium alloy); 1.5g (lithium ion) ☐ > 1g (lithium metal or lithium alloy); 1.5g (lithium ion)	

Number of cells per battery:	

☐ We certify that each cell or battery meets the requirements of the applicable test in the Manual of Tests and Criteria of the UN Recommendations on the Transport of Dangerous Goods, Part III, sub-section 38.3.

Name and address of battery manufacturer:	
Date:	
Responsible person:	
Signature:	
Company Stamp or Seal	

Additional battery information:

Weight of the battery pack: _____

Spare Part No: _____

Further battery name (synonym): _____

lithium_battery.doc

Annex 7: Manufacturer´s information in accordance to WEEE

Annex 7.1: Manufacturer's information for users (WEEE Article 10)

A26361-K600-Z120-8N1.doc

Annex 7.2: Manufacturer's information for treatment facilities (WEEE Article 11)

weee_information.dot

Annex 8: Manufacturer´s information for ECO Declaration

eco_declaration.dot
manufacturers_statement.dot
lithium_battery.dot

Annex 9: List of interesting links

Ecolabel

Blauer Engel (Blue Angel)	http://www.blauer-engel.de/englisch/navigation/body_blauer_engel.htm
Nordic Swan	http://www.svanen.nu/eng/
TCO	http://www.tcodevelopment.com
GEEA (Group for Energy Efficient Appliances)	http://www.efficient-appliances.org/
Energy Star Computers	http://www.energystar.gov/index.cfm?c=computers.pr_computers
Energy Star Monitors	http://www.energystar.gov/index.cfm?c=monitors.pr_monitors
EU Ecolabel	http://europa.eu.int/comm/environment/ecolabel/index.htm
summary ecolabel	http://www.gen.gr.jp/members.html

Acts/directives/standards

EUR Lex (The portal to European Union law)	http://eur-lex.europa.eu/en/index.htm
Abfallratgeber (Guideline for waste-only in german)	http://www.abfallratgeber-bayern.de/
DIN	http://www.din.de/cmd;jsessionid=B3A1FA1896D81EE555F51D772A579951.3?level=tpl-home&contextid=din&lang=en&languageid=en
ISO (TC 207 Environmental management)	http://www.iso.ch/iso/en/stdsdevelopment/tc/tclist/TechnicalCommitteeStandardsList-Page.TechnicalCommitteeStandardsList?COMMID=4594&INCLUDESC=YES
ECMA	http://www.ecma-international.org
IEC	http://www.iec.ch/
EuP	http://ec.europa.eu/enterprise/eco_design/index_en.htm http://www.ecocomputer.org http://www.ecostandby.org
WEEE	http://ec.europa.eu/environment/waste/weee/index_en.htm

FSC Environment and Recycling - Inernet

FSC Environment	http://www.fujitsu-siemens.com/environment
FSC Recycling	http://www.fujitsu-siemens.com/recycling

Internal links:

Siemens Greendesign	https://environment.siemens.com/en/themen/pe/greendesign/council/index.html
Siemens Corporate Offices for Environment	http://intranet.ct.siemens.de/en/referate/es/index.html
Standards Inquiry (Noris WEB - registration required)	http://nweb.mchp.siemens.de/
FSC TQM	http://my.fsc.net/tqm
Product Certificates and Center for Tests and Compliance	http://my.fsc.net/testcenter