



Environment, Health & Safety Requirements for Packaging

EHS-710 Revision G 7/17/09

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Questions regarding requirements contained in this standard should be directed to: ProductStandards@xerox.com

This document is available on the Internet @ www.office.xerox.com/sdds/transportation.html

LIST OF REVISIONS		
Rev	Date	Changes
OR	08/05/02	<ul style="list-style-type: none"> Original Release- Harmonized with FX
B	8/10/07	<ul style="list-style-type: none"> Major revision adding China RoHS, Japan EcoMark and Korean marking requirements.
C	10/26/07	<ul style="list-style-type: none"> Amend Requirement 5.5 to include statement: "Compliance with ISPM-15 shall be based on heat treatment (HT) only. Methyl bromide (MB) fumigation is prohibited to support Xerox applications." Remove "Green Dot" from Appendix C.
D	12/16/08	<ul style="list-style-type: none"> Section 4.0: New terms defined Requirement 5.6 added requiring conformance with formaldehyde emission limits specified in 93120-93120.12, Title 17 of the California Code of Regulations. Requirements 5.8 and 5.10 to packaging of machines, options and consumables/ supplies. Requirement 5.14 added: All non reusable packaging shall be separable. Moved from best practice to a requirement for machines, options and consumables / supplies. Remained a best practice for FRU/spares and incoming materials to Xerox manufacturing facilities. Best Practice 6.6 added to List of Best Practices Appendix A: Addition of "Polyvinyl chloride (PVC) only permitted in Parts used for ensuring the safety (i.e. Electrical cable, Tube, Tape, Sleeve and Battery, fuse breaker, Electrolytic capacitor, Switch, Terminal block)." Appendix A (Asia Pacific Prohibited Substances): Removal of substances prohibited before the date of this Standard. Appendix B -Limited requirements to packaging of machines, options, consumables / supplies and FRU / spares (i.e. excluded requirement for stretch wrap, shrink film, banding, tape, desiccant and pallets.) Appendix B- Added symbol for natural wood that had been mistakenly deleted last version. Appendix B- The symbol for corrugated fiberboard is not marked as "optional" (i.e. mobius loop is mandatory) Appendix B (Paper) - Added "Not required for packaging with a surface area smaller than 200 mm²". Appendix B (Metal, Glass, Wood) - Added "Not required for packaging components with a surface area smaller than 5x10³ mm²". Appendix B (Marking Requirements for Korea) - revised to state: "NOTE: This requirement does not apply to the packaging of consumables, spare parts and options. It only applies to the foam cushions on products including printers, scanners, and copiers". Removed Requirements for Japan from Appendix B. Appendix D added: U.S. Environmental Protection Agency (EPA) recommended recovered fiber content for paperboard & packaging components
E	3/21/09	<ul style="list-style-type: none"> Added Appendix E, Substances of Very High Concern as listed in the European Union Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Directive Appendix A updated to include Perfluorooctane sulfonate (PFOS) and remove PBDO.
F	3/23/09	<ul style="list-style-type: none"> Removed requirement: "Composite wood products, including packaging materials made from hardwood plywood, particle board and medium density fiberboard must comply with the formaldehyde emission limits specified in 93120-93120.12, title 17, California Code of Regulations. A label, in conformance with the regulation, is to be applied to every finished good produced or to every box containing finished goods. Any additional documentation required for compliance, including exemptions for sell-through provisions, is to be provided upon request."
G	7/17/09	<ul style="list-style-type: none"> Updated Appendix A (Prohibited Substance List) to include dimethylfumarate (DMF) Updated Appendix A (Prohibited Substance List) to include cobalt dichloride

1.0 SUMMARY

This standard specifies the minimum environment, health, and safety requirements for packaging of products, parts, or materials shipped to any manufacturing site, distribution center or customer from suppliers or other Xerox locations.

2.0 SCOPE

This standard applies to all Xerox organizations and third party suppliers.

3.0 OBJECTIVE

Comply with all applicable regulations, satisfy customer requirements and achieve corporate waste minimization goals. Any packaging that complies with this standard will be marked indicating its material composition as reflected in Appendix B of this Standard and will be capable of being recycled.

4.0 DEFINITIONS

- Commingled Plastic: a mixture of different plastics.
- Consumable: Also called Supply. Item consumed by product during normal operation. Examples include but not limited to toner, ink, paper, drum cartridge, print cartridge, fuser, and developer and photoreceptor.
- Copolymer: a polymer consisting of two or more different monomers.
- Customer Replaceable Unit: Customer installable item that requires scheduled replacement. This is considered a consumable
- Environmental Claim: a statement, symbol, or graphic that indicates an environmental aspect of a product, component or package.
- Field Replacement Unit (FRU): Any assembly made available to support unscheduled replacement of like parts in existing equipment.
- Incoming Materials to Manufacturing: Any material and/or part coming into a manufacturing facility that becomes assembled or made into a product.
- Manufactured Wood Packaging Material: wood-based materials such as plywood, particle board, oriented strand board, veneer and wood wool that have been created using glue, heat and pressure.
- Machine: A product that performs a function on its own without the need of additional items. Examples include but not limited to printer or image output terminal (IOT), scanner or image input terminal (IIT) and multifunction product (MFP).
- Non-Manufactured Wood Packaging Material (NMWP) [also called Solid Wood Packing Material (SWPM)]: solid wood (usually softwood [coniferous]) material that is used in the construction of crates, packing blocks, load boards, pallet stringers and other material handling devices.
- Option: Items that are added to machines to provide additional capabilities. Examples include but not limited to second feeder, finisher, high capacity feeder and cart.
- Packaging: Any item that is used to protect, contain and/or transport a product, part or material. Packaging may be described as being primary, secondary or tertiary. Items that support the contents throughout their functional lifetime and remain as part of the printer are not packaging (e.g. toner cartridges).
- Pre-Consumer Waste: material, generated during a manufacturing process, which is diverted from the waste stream for another use. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.
- Primary Packaging: The first wrap or containment of a product. Contains the product or material (e.g. a box holding transparencies, a carton containing toner cartridge).
- Post-Consumer Waste: material generated by consumers or businesses after using a product to the point that it is no longer usable for its intended purpose. This includes material returned through the distribution chain.
- Recycled Content: proportion, by weight, of recycled material.
- Recycled Packaging: packaging reprocessed from recovered material.
- Recyclable Packaging: packaging that can be diverted from the waste stream at end of life and returned to raw materials using available processes.
- Reusable Packaging: packaging designed for reuse.

- **Rigid Plastic Packaging Container (RPPC):** container that meets all of the following criteria:
 - Made entirely of plastic (except for caps, lids and labels).
 - Contain at least 8 fluid ounces (237 milliliters) but not more than 5 gallons (19 liters).
 - Capable of maintaining shape while holding a product.
 - Capable of multiple re-closures with an attached or unattached cap or lid.
 - Normally used to store a product for at least 7 days.
- **Secondary Packaging:** Packaging that contains the primary package (e.g. a carton containing boxes of transparencies).
- **Spare:** Any part made available to resolve unscheduled replacement of like parts in existing equipment.
- **Supply:** Also called consumable. Item consumed by product during normal operation. Examples include but not limited to toner, ink, paper, drum cartridge, print cartridge, fuser, developer and photoreceptor.
- **Tertiary Packaging:** Contains or holds primary and/or secondary packages primarily for transport purposes (e.g. shrink wrap, pallet).

5.0 REQUIREMENTS (Mandatory)

- 5.1 **REDUCE:** Reduce packaging weight and volume to the minimal levels necessary to achieve the purpose of the package (e.g. European Union's Essential Requirements).
- 5.2 **REUSE:** Where technically and economically feasible, utilize reusable packaging.
- 5.3 **RECYCLE:** Utilize materials that are recyclable. Where technically and economically feasible, use recycled material instead of virgin material. Recycled material from post-consumer waste is preferred over recycled material from pre-consumer waste.
- 5.4 Packaging used to transport **hazardous materials** must comply with all applicable international, federal, state and local regulations through which the package will travel. Contact regulatory agencies directly for detailed requirements. It is beyond the scope of this document to include these requirements. Questions regarding shipping hazardous materials in North America and Europe can be directed to ProductStandards@xerox.com
- 5.5 **Non-Manufactured Wood Packing (NMWP)**, also called Solid Wood Packaging Material (SWPM), must meet International Standard for Phytosanitary Measures Publication No. 15 (ISPM-15) and be properly identified on at least 2 sides. NMWP must also be bark free when shipped into Australia. Compliance with ISPM-15 shall be based on heat treatment (HT) only. Methyl bromide (MB) fumigation is prohibited.
- 5.6 Do not use materials that contain prohibited substances listed in Appendix A.
- 5.7 Identify packaging materials according to Appendix B.
- 5.8 Weights and dimensions of packages and weights of packaging components for machines, options and consumables / supplies must be reported to Xerox. FRU/Spare parts are exempted from this requirement. This information is required for compliance with packaging regulations, such as those implementing the EU Packaging Directive. Information to record includes the following:
 - Outside dimensions and total weight of packaged product (cm, g)
 - Total weight of primary packaging by material type (g)
 - Total weight of secondary packaging by material type (g)
 - Total weight of tertiary packaging by material type (g)
 - Material type classifications: Paper, Plastic, Wood, Aluminum, Tin Plate, Glass, Steel and Other
 - % Recycled Content (all packaging)
- 5.9 Suppliers shall provide Xerox with the approximate recycled content (by weight or volume) for packaging of machines, options and consumables/supplies. Exempted from this requirement are FRUs and spare parts
- 5.10 EH&S Labeling Guidelines for Xerox Products, Parts & Materials, including Primary Packaging must be identified per Appendix C.

- 5.11 Plastic bags or sheets that are 1 mil (0.025 mm, 0.001 inches) thick or less, 305 mm (12 inches) in circumference for bags and 232 cm² (36 in²) for sheets must be marked with the following symbol. This requirement does not apply to stretch wrap. Minimum size of symbol is 76 x 127 mm (3 x 5 inches). Reduce appropriately to fit a smaller item. Contact Xerox at ProductStandards@xerox.com for an electronic file of this symbol.



- 5.12 It is required that all non reusable packaging for machines, options and consumables / supplies be separable. It is a best practice for FRU / spares and incoming Materials to Manufacturing Facilities. All packaging materials shall be able to be segregated into like material without the use of tools. Multi-layer bags (e.g. metalized bags or static shield bags) are exempt from this requirement."
- 5.13 Must comply with the specific requirements of the European Union Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Directive indicated in Appendix E.

6.0 BEST PRACTICES (Preferred)






- 6.1 Use Kraft or unbleached paper materials whenever possible.
- 6.2 Do not use coatings or adhesives that prevent recycling.
- 6.3 Avoid using polyurethane foam.
- 6.4 Avoid using pre-molded polyurethane and/or foam-in-place.
- 6.5 Avoid using commingled plastics and copolymers. Only use if there is an established recycling process that can be utilized in all applicable markets. Rubberized versions of Expanded Polystyrene (EPS) are acceptable as long as they can be recycled as a monomer material (e.g. brand names RMER, NEPS).
- 6.6 Follow US Environmental Protection Agency (EPA) guidelines on recommended recovered fiber content for paperboard and packaging components (see Appendix D).
- 6.7 Rigid Plastic Packaging Containers (RPPC) shall be composed of at least 25 percent post consumer resin.

Appendix A Harmonized Prohibited Substance List
Asbestos
1,1,2-Trichloroethane
Azo colorants (only those containing more than one aromatic amine specified in 74/69/EEC)
Benzene
Cobalt dichloride
Cyanide Compounds
dimethylfumarate (DMF)
Halogen-Containing Polymers from plastic packaging
Heavy Metals (Total shall be less than 100 ppm): Cadmium /Cadmium Compounds Hexavalent Chromium & its Compounds Lead/Lead Compounds Mercury/Mercury Compounds
Hexachlorobenzene
Ozone Depleting Substances (ODS)
Pentachlorophenol
Perfluorooctane sulfonate (PFOS)
Polybrominated Biphenyls (PBBs)
Polybrominated Diphenylethers (PBDEs)
Polychlorinated Biphenyls (PCBs)
Polychlorinated Naphthalenes (PCN)- more than 3 chlorine atoms
Polychlorinated terphenyl (PCTs)
Polyvinyl chloride (PVC) - Permitted only in Parts used for ensuring the safety: Electrical cable, Tube, Tape, Sleeve and Battery, fuse breaker, Electrolytic capacitor, Switch, Terminal block
Radioactive Substances
Short Chain Chlorinated Paraffins (SCCP)
Tributyl Tin (TBT) and Triphenyl Tin (TPT) and Tributyl Tin Oxide (TBTO)
The following are prohibited only for products that will be distributed in Asia-Pacific market areas
Brominated Flame Retardants (BFR) in addition to PBB and PBDE.

Appendix B – Material Identification

NOTES:


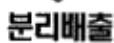
1. These requirements are based on regulations from the European Union, China, Japan and Korea. Their intent is to facilitate recycling by identifying the material of each packaging component.
2. Only one mark per component is required and the mark must be legible.
3. All packaging components for products, options and consumables must be identified as indicated in the table below. Stretch wrap, shrink film, banding, tape, desiccant and pallets do not require identification. FRUs and spares are regarded as best practice.

General Requirements			
Minimum size should be 20X 20 mm. Marking can be proportionately reduced below this size to accommodate smaller packaging components (must be legible).			
PLASTIC			
<i>Type</i>	<i>Code</i>	<i>#</i>	
Polyester	PET	01	
High density polyethylene	HDPE	02	
Polyvinyl chloride	PVC	03	
Low density polyethylene	LDPE	04	
Polypropylene	PP	05	
Polystyrene	PS	06	
Other Plastic	Other	07	
PAPER			
Not required for packaging components with a surface area smaller than 200 mm ² .			
All paper material including but not limited to: Paper Paperboard Corrugated Cardboard Corrugated Fiberboard Non-corrugated Fiberboard		 All paper material must have this symbol	 Optional- Corrugated fiberboard cartons should also have this symbol
METAL, GLASS & WOOD			
Not required for packaging components with a surface area smaller than 5x10 ³ mm ² (5000mm ²).			
<i>Type</i>	<i>Code</i>	<i>#</i>	
Steel	FE	No #	
Aluminum	ALU		
Glass	GL		
Natural Wood	NW		
COMPOSITES			
<i>Type</i>	<i>Code</i>	<i>#</i>	
Plastic/aluminum	No Code	90	
Plastic/tin		91	
Plastic/mixed metals		92	
Plastic/glass		95	
Glass/aluminum		96	
Glass/tin		97	
Glass/mixed metals		98	
Paper or fiberboard/mixed metals		80	
Paper or fiberboard/plastic		81	
Paper or fiberboard/aluminum		82	
Paper or fiberboard/tin		83	
Paper or fiberboard/plastic/aluminum		84	
Paper or fiberboard/plastic/aluminum/tin		85	

Appendix B (continued) – Material Identification

Requirements for Korea

NOTE: This requirement does not apply to the packaging of consumables, spare parts and options. It only applies to the foam cushions on products including printers, scanners, and copiers.

PLASTIC		
<i>Type</i>	<i>Code</i>	
Polyester	PET	 ← Code changes according to material type
High density polyethylene	HDPE	
Low density polyethylene	LDPE	 ← Text does not change (Reads: “Separate Disposal”)
Polypropylene	PP	
Polystyrene	PS	
Other Plastic	Other	

Appendix C – EH&S Labeling Guidelines for Xerox Products, Parts & Materials, including Primary Packaging

Labeling guidelines for secondary packaging are indicated, as appropriate.

Product marking requirements are covered in EH&S-1001.

Note to Supplier: Artwork containing these requirements is typically provided by Xerox in the form of an Adobe Illustrator file. Contact Xerox Group program manager if artwork has not been provided.

Key:

Required

NR Not presently required by current EH&S regulatory regulations.

Packaging Contents										
		Waste Toner (waste toner sump)	Toner, Developer, Replenisher, or Cartridge & Primary Pkging	Toner, Developer or Replenisher Bottle	Solid Inks	Water-Based Liquid Inks	Solvent-Based Liquid Inks	Photoreceptor	Service Materials/Supplies (primary& secondary Packaging)	Equip Parts (printers, copiers, Kits and Options)
Label Graphics & Symbols	Chemical Composition (e.g. SPI code)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ingredients (e.g. CAS #)	NR	NR	NR	NR	NR		NR		NR
	Health Hazard Warning	NR	NR	NR	NR	NR	See comment #5	NR	See comment #5	NR
	Physical Hazard Warning	NR See comment #1	NR	NR	NR	NR	See comment #5	NR	See comment #5	NR
	Agency Approval	NR See comment #6	NR See comment #6	NR See comment #6	NR	NR	NR	NR	NR	See #6
	Product Identifier (e.g., part #)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/> See comment #4	<input checked="" type="checkbox"/> See comment #4
	Green World Alliance	See comment #2	See comment #2	See comment #2	NR	See comment #2	See comment #2	See comment #2	See comment #2	See comment #2
	Hazardous Material Shipping Information	NR	NR	NR	NR	NR		NR		NR
	Voluntary Ecolabel	NR	See comment #3	See comment #3	NR	NR	See comment #3	NR	NR	See comment #3
	Comments: #1- For products distributed in Asia/Pacific market, include warning "DO NOT INCINERATE" #2 – Use if return system has been established #3 - Applies if eco label certification has been achieved. #4 – Both primary and secondary packaging shall include Xerox name, product name and part number. Refer to MN2-155.2 and Xerox Packaging Graphic Standards for details. #5 - Symbols, graphics, language and text may vary by country #6 - Consult with Xerox Product Safety Engineering for unique applications. Examples include UL, CSA, and Russia GOST. GOST symbol required for all equipment going to Russia.									

<p style="text-align: center;">Appendix D</p> <p>US Environmental Protection Agency (EPA) recommended recovered fiber content for paperboard and packaging components</p>	
Item	Post Consumer Fiber (%)
Corrugated Containers < 300 psi	25 to 50
Corrugated Containers > 300 psi	25 to 30
Solid Fiber Boxes	40
Folding Cartons	40 to 80
Industrial Paperboard	45 to 100
Padded Mailers	5 to 15
Carrier board	10 to 15
Brown Papers (e.g. wrapping paper and bags)	5 to 20 %
Miscellaneous (e.g., pad backs, covered binders, book covers, mailing tubes, protective packaging)	75 to 100

Appendix E

Use of any of the following material(s) in concentrations greater than 0.1 % is to be disclosed to Xerox.

Substance	CAS No.
Anthracene	120-12-7
4,4'-Diaminodiphenylmethane	101-77-9
Cobalt dichloride	7646-79-9
Diarsenic pentaoxide	1303-28-2
Diarsenic trioxide	1327-53-3
Sodium dichromate	7789-12-0 10588-01-9
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2
Dibutyl Phthalate (DBP)	84-74-2
Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7
Benzyl butyl phthalate (BBP)	85-68-7
Hexabromocyclododecane (HBCDD)	25637-99-4, 3194-55-6, 134237-51-7, 134237-50-6, 134237-52-8
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCPs)	85535-84-8
Bis(tributyltin) oxide (TBTO)	56-35-9
Lead hydrogen arsenate	7784-40-9
Triethyl arsenate	15606-95-8