

ENVIRONMENTAL REQUIREMENTS FOR CLOUD HARDWARE TRANSPORT PACKAGING

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1 Purpose

This document is to provide the environmental requirements for Transport Packaging for Cloud server hardware equipment, including servers, spare and replacement parts, and networking equipment. This document is based on international laws and regulations as well as Microsoft policy that reflects our Microsoft Sustainability goals. This document is specific to Transport Packaging for Cloud Server equipment that is used to contain or bundle or pack such equipment when it is being delivered to, transported between, or collected from Microsoft Data Centers worldwide.

2 Definitions

Bio-based	A material that is composed, in whole or in significant part, of biological materials or renewable agricultural (including plant, animal, and marine materials) or forestry materials.
Biodegradable plastic	A degradable plastic in which the degradation results from the action of naturally- occurring micro-organisms such as bacteria, fungi, and algae. This includes compostable plastics, which may be labeled with ASTM D6400 or other regional markings.
Compostable	Materials that are biodegradable and have access to composting facilities.
Composite Wood	Wood-based panels made from pieces, chips, particles, or fibers bonded together with a resin, e.g., particleboard or plywood.
Forest Stewardship Council (FSC)	An international non-profit organization founded in 1993 to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests. The association consists of a diverse group of representatives from environmental and social groups, the timber trade and the forestry profession, indigenous people's organizations, community forestry groups and forest product certification organizations from around the world. Web site is http://www.fsc.org .
Hardware Products	Any electrical or electronic device that is dependent on electric currents or electromagnetic fields in order to work properly. This includes equipment for the generation, transfer and measurement of electrical currents and fields.
Importer	Any entity who is responsible for the importation of a product into a particular jurisdiction.
Illegally harvested	Timber harvested in contravention of the applicable laws or regulations in the country of harvest.
Packaging	All products made of any materials of any nature to be used for the containment, protection, handling, delivery, and presentation of goods from the producer to the consumer or the user.
Packaging Component	Any part of packaging that can be separated by hand or by using simple physical means. For example, shippers, crates, boxes, fillers, pallets, desiccant, straps and adhesives are considered packaging components.
Recyclable	Materials that are accepted in local collection receptacles and by local waste haulers, and can be sorted at a material recovery facility (MRF), reprocessed and

	manufactured back into valuable feedstock for new material or product with an end market – at scale and economically.
Supplier	A manufacturer who provides packaging components or materials directly to Microsoft or Microsoft manufacturing partners.
Sustainably forested material	Wood based material that is certified to one of the following: the Forest Stewardship Council (FSC) chain of custody standard; the Programme for the Endorsement of Forest Certification (PEFC) international chain of custody standard; or a national forest certification system that is in compliance with PEFC's Sustainability Benchmark, which includes documentation of chain of custody certificates for fibre.
Trader	Any natural or legal person who, during a commercial activity, sells or buys on the internal market timber or timber products already placed on the internal market.
Transport Packaging	Packaging and packaging components for Cloud Server equipment (servers, spares and replacement parts, and networking equipment) that is used to contain or bundle or pack such equipment when it is being delivered to, transported between, or collected from Microsoft Data Centers worldwide.

3 Environmental Requirements for Transport Packaging

3.1 Substance Restrictions

Per worldwide substance restrictions that pertain to packaging (e.g., Packaging & Packaging Waste Directives) as well as Microsoft policy, all Transport Packaging must comply with all applicable substance restriction laws and regulations including the following:

Table 1:

Substance / Category	Reference Citation	Application	Threshold Limit
Arsenic compounds	REACH (EC) 1907/2006 (ANNEX XVII)	All Packaging components	Not intentionally added
Boric Acid	REACH (EC) 1907/2006 (ANNEX XVII)	All Packaging components	No more than 0.1 % by weight (1000 ppm) when measured at the article level
Borate Flame Retardant	REACH (EC) 1907/2006 (ANNEX XVII)	All Packaging components	No more than 0.1 % by weight (1000 ppm) when measured at the article level
Dimethyl fumarate	REACH (EC) 1907/2006 (ANNEX XVII)	All Packaging components	No more than 0.00001% by weight (0.1 ppm) when measured at the article level

Elemental chlorine (Bleaching agent)	Microsoft Policy	All Packaging components	Not intentionally added
Formaldehyde	US/CA CARB Rule US Federal Law 111- 199/TSCA Section 601; Germany- ChemVerbotsV GB 18401-2010 (China)	Composite wood products or components	Not present in the final product
Lead, Cadmium, Chromium (VI), Mercury	EU Packaging Directive 94/62/EC; US State Toxics in Packaging (TIP)	All Packaging	Sum of the metal must not exceed 0.01% by weight (100 ppm) of the sum of Cd, Hg, Pb & Cr (VI) per material
Nonylphenols (NP) and Nonylphenol Ethoxylates (NPE)	REACH (EC) 1907/2006 (ANNEX XVII)	Textile, leather, metal, pulp and paper parts	Banned
Organochlorine pesticide dicofol	(EC) 850/2004 (Persistent Organic Pollutants) regulation)	Wood	Banned
Pentachlorophenol (PCP)	EU Biocidal Product Regulation	Wood, textiles, leather	Not intentionally added
Perfluoroalkyl and polyfluoroalkyl substances (PFAS)	US Toxics in Packaging Clearinghouse Model Legislation (TPCH)	All Packaging	Sum total must not exceed 0.01% by weight (100 ppm)
Phthalates		All Packaging	Sum total must not exceed 0.01% by weight (100 ppm)
PVC	Microsoft Policy; Korea K-REACH GB-30981-2020 (China) GB-38507-2020 (China) GB-33372-2020 (China)	All Packaging	Not intentionally added
Volatile Organic Compounds (VOCs)		Coatings Printing inks Adhesives	Please reference the full list of restrictions contained in the GB Standard Found here

3.2 Pallets and Wood-based Packaging Requirements

Microsoft will not purchase wood-based packaging or product components from any suppliers engaged in the following activities in any downstream manufacturing operations or supply chain operations:

- Logging of any ancient forests
- Deriving material from byproducts that have origins from ancient forests; or
- Producing material originating in other protected areas, except as permitted by land use management guidelines.

All wood products must comply with the Illegal Timber Regulation (EU) 995/2010. The Regulation prohibits the sale or distribution in the European Union of illegally harvested timber and products derived from such timber. The Regulation applies to both imported and domestically produced timber and timber products. Examples of covered timber derived products include unfilled packaging, cartons, boxes, cases, bags, and trays. Recycled products as well as printed papers such as books, magazines, and newspapers are not in scope of the Regulation - neither are filled packaged products.

All Transport Packaging consisting of wood packaging material and/or dunnage must be:

- Either heat treated or fumigated in line with ISPM15 procedures.
- Officially marked with the ISPM15 stamp consisting of 3 codes (country, producer and measure applied) and the IPPC logo; debarked.

These requirements do not apply to:

- Wood 6mm thick or less
- Manufactured wood packaging material made entirely from processed wood produced using glue, heat, and pressure e.g. plywood, oriented strand board and veneer
- Wood packaging material used in trade within the EU

4 Environmental Sustainability and Reporting Requirements

This section provides Microsoft's Transport Packaging requirements that support the following Microsoft sustainability goals and objectives:

- Achieve our Science Based Target to reduce Scope 3 greenhouse gas emissions by 55% by 2030
- Zero waste by 2030 for its direct waste footprint
- Elimination of single use plastics in packaging
- Increase the material circularity of all cloud infrastructure related materials

4.1 Packaging Reporting Requirements

Upon request, suppliers shall provide the following information for all Transport Packaging:

- Packaging material content
- Packaging weight
- Packaging recycled content
- Packaging material type

The Safety, Serviceability and Certifications team will provide you with a template to populate this information. Training and guidance will also be offered by the SSC team. Contact Cloud-env-docs@microsoft.com for questions and technical support. The documentation shall be provided within 14 days of request by Microsoft.

Upon request, Supplier may be required or encouraged to report its best practices and voluntary efforts regarding packaging sustainability to Microsoft.

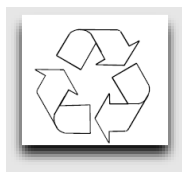
5 Material Composition Identification Marking of all Packaging

Transport Packaging materials must be marked and labelled to provide material identification. This includes the following materials:

- Cardboard
- Filler/foam
- Plastic materials (unless excluded)
- Pallets

The EU Packaging Directive provides a system for packaging material composition identification per European Commission Decision 97/129/EC: Identification System. Although material coding in Europe is voluntary, several member states have implemented laws requiring material coding of packaging using the EU identification coding system. Current international industry accepted methods reflect this numbered marking system, and it is generally customary practice of packaging manufacturers to mark packaging for material composition purposes.

Packaging components made of materials other than plastic must be marked by placing the numeral within the Möbius Loop symbol with the abbreviation for the material type placed below it where allowed under country regulations. To ensure optimal visibility, a minimum diameter of 10 mm is desirable for the Möbius Loop recycling symbol. The symbol should not have a diameter of less than 6 mm.



5.1 Plastic packaging markings - all plastics

All plastic Transport Packaging must be marked such that the plastic resin is identified by using ASTM D7611, DIN 6120, or equivalent markings relevant to the country in which the product is being sold. Plastic packaging components with surface area < 50 cm² are exempt from this marking requirement. Tape, plastic protective and stretch wraps, and labels and plastic strapping are also exempt from this marking requirement. The EU/SPI material identifier code is placed within the Möbius Loop symbol with the abbreviation for the resin type placed below it where allowed under country regulations. The EU/SPI Material Identifier and EU/SPI Code columns in Table 1 should be used, exception is China and Taiwan, which are included separately in the Table 1.

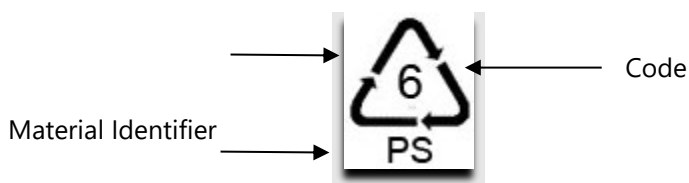


Table 2: EU/SPI material identifier codes

Packaging Material Description	EU/SPI Material Identifier	EU/SPI Code	Chinese Material Identifier	Chinese Code	Taiwan Material Identifier	Taiwan code
Polyethylene glycol terephthalate	PET	1	PET	01	PET	1
High density polyethylene	HDPE	2	PE-HD	02	HDPE	2
Polyvinyl chloride	PVC	3	PVC	03	PVC	3
Low density polyethylene	LDPE	4	PE-LD	04	LDPE	4
Polypropylene	PP	5	PP	05	PP	5
Polystyrene (Polyvinyl benzene)	PS	6	PS	06	PS	6
Other	Other	7	Other	07	Other	7

Labels should be positioned in places clearly visible, durable, and easily legible when the packaging is opened. Labels must be visible on two opposite surfaces on the packaged items. If two labels cannot be placed on two side of the packaged item, then a single label must be affixed to a minimum of one side of the packaged item.

5.2 Korea Separate Discharge Mark – polymer padding

Labelling with Korean Separate Discharge Mark is mandatory for polymer padding packaging (e.g. foams, expanded resins) used to pack electronic equipment, cardboard, and plastic bags.

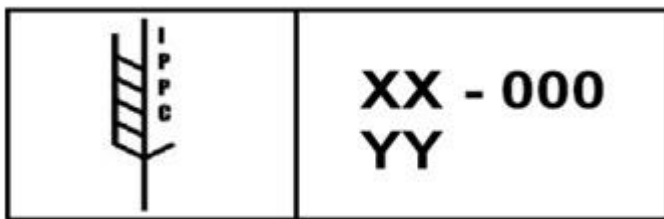
The following packaging materials are exempt from Korea Separate Discharge Marking requirement:

- Packaging materials whose surface is less than 50 cm² (7.75 in²).
- Plastic sheet and film with a surface area less than 100 cm² (15.5 in²). Plastic bags are included in the scope of plastic sheet and film. Example for bags: A 6 cm wide x 10 cm tall bag that uses 120 cm²
- plastic film, exceeding the 100 cm² limit, must be marked unless otherwise exempt.
- Packaging components with a volume less than 30 milliliters (1.01 fl oz.) or a capacity of less than 30 grams (1.06 oz.) measured by weighing the amount of water that the container can hold.
- Packaging material on which it is technically difficult to print, engrave, or label due to elements or structural properties.
- Plastic bags, plastic sheet, and plastic film packaging materials that do not have any printing, engraving, embossing, or labelling.

5.3 Wood Packaging

All wood Transport Packaging, including pallets) shall be marked by ISPM 15 Measures. ISPM 15 applies to coniferous (softwood) and non-coniferous (hardwood) raw wood packaging material. This includes pallets, dunnage, crating, packing blocks, drums, cases, spools/reels, bulk heads, load boards, pallet collars and skids.

Wood packaging material bearing the stamp or mark below is certified as being ISPM 15 compliant. It may be stamped or branded to the wood packaging material in any color.



An ISPM 15 internationally recognized certification mark must include the following:

- **IPPC** certification symbol (this is a registered trademark).
- **XX**: represents the two letter ISO country code where the wood was treated.
- **000**: represents the unique certification number (which ensures that the wood packaging material can be traced back to the treatment provider and/or manufacturer).
- **YY**: is the treatment abbreviation where:
 - **HT**: is the code for heat treatment using conventional steam or dry kiln heat chamber to a minimum of 56° C for a minimum of 30 minutes
 - **MB**: is the code for methyl bromide fumigation
 - **DH**: is the code for heat treatment using dielectric heat
 - **SF**: is the code for sulphuryl fluoride fumigation

6 Reference Sources

European Parliament of the Council Regulation (EU) 2016/2031 of the on protective measures against pests of plants.

European Parliament and Council Directive 94/62/EC on packaging and packaging waste

REACH legislation: Regulation (EC) No 1907/2006

Hazardous Substances Law 5753-1993 (English translation from Hebrew text)

International Standard for Phytosanitary Measures 15 (ISPM 15); International Plant Protection Convention (IPPC)

India Ministry of Environment, Forest, and Climate Change

K-REACH = Act on on Registration and Evaluation of Chemical Substances, South Korea