Recyclable Packaging Materials

Selection and Identification

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1.0 Introduction

1.1 Abstract

IBM uses a comprehensive waste management system to reduce the impact of our waste materials on the solid waste stream. This integrated system emphasizes source reduction and recycling programs prior to investigating alternatives for disposal. Material recycling strategies will focus upon the use of:

1. Recycled material(s) in our packaging,
2. Other materials which provide a resource for secondary applications (e.g., recyclable materials).

1.2 Purpose

- To establish parameters for the recycled content to be included in corrugated and plastic packaging.
- To reduce and/or eliminate the use of non-recyclable materials or materials compositions that prevent or hinder the recycling of IBM packaging after use.
- To promote recycling by providing information (in the form of markings) which will increase the likelihood that our packaging materials will be recycled.

1.3 Compliance

Compliance with the requirements herein will be enforced as a condition of purchase per IBM purchase contracts. When the requirements of this specification conflict with applicable governmental regulations, the more stringent shall take precedence.

Related international standards include ISO 11469, DIN 6120 (Germany), ISO 1043, the Japanese “Law for Promotion of Effective Utilization of Resources" (4/2001) and the Korean “Extended Producer Responsibility” law (1/2003). This specification aims to comply with all of these; routinely applied to all subject materials.

1.4 Scope

This specification considers two ways recycling may be used to reduce our contribution to municipal solid waste.

- It redirects material which would otherwise be sent to a landfill.
- It may conserve natural resources or reduce the amount of waste material generated from processes which utilize raw or virgin materials.

1.5 Application

1. This specification applies to all primary, secondary, and tertiary packaging for products, devices, parts, subassemblies, materials, and supplies purchased by IBM for use in its manufacturing and distribution operations.
2. This specification applies to all packaging used in protecting, handling, or marketing of IBM products, parts and supplies including those manufactured by an OEM.

3. This specification is to include, but is not limited to, the following packaging materials and packaging components:
   - Molded cushions (of any resin)
   - Fabricated cushions (of any resin)
   - Corrugated fiberboard
   - Paperboard
   - Rigid and flexible plastics
   - Adhesive tapes and glues
   - Inks, dyes, coatings

1.6 Exemption

This specification does not apply to IBM contracts negotiated prior to its date of publication. However, a target date for compliance should be provided for any deviations existing under current purchase orders.

1.7 Referenced Documents

External Documents:

The following represent the regulatory force behind these requirements in the various countries that are affected or an internationally recognized standard (ISO, DIN, etc.).

Country	Document Title / Description	Date
Japan	"Law for Promotion of Effective Utilization of Resources"	4/26/1991
	Japanese Ordinance No.1 of the Ministry of Environment and the Ministry of Economy, Trade and Industry"	3/28/2001
Korea	Extended Producer Responsbility (http://www.epr.or.kr/eng)	1/2003
ISO 11469	"Plastics -- Generic identification and marking of plastics products"	5/11/2000
ISO 1043	Plastics -- Symbol and abbreviated terms (4 parts):	
	Part 1: Basic polymers and their special characteristics	/2000
	Part 2: Fillers and reinforcing materials	/2000
	Part 3: Plasticizers	/1996
	Part 4: Flame Retardants	/1998
Germany	**DIN 6120-1**: Marking of Packaging and Packing Material for the Purpose of Recovery - Plastics Packaging and Packing Material - Part 1: Artwork / Graphics	12/1996
	DIN 6120-2: Marking of Packaging and Packing Material for the Purpose of Recovery - Plastics Packaging and Packing Material - Part 2: Additional Marking	12/1996

IBM Internal Documents:

Part No.	Document Title / Description	Date
11P9401	Artwork for Japanese Symbols for PLASTIC materials	4/26/1991
11P9402	Artwork for Japanese Symbols for PAPER materials	4/26/1991
31L5345	[same as] **GA21-9261-11a**: "Packaging and Handling: Supplier and Interplant Requirements" (linked directly below)	5/26/2001
Http://www-1.ibm.com/procurement/proweb.nsf/objectdocswebview/fileibm+packaging+requirements+manual/$file/ibm+packaging+requirem ents+manual.pdf		

2.0 Requirements

Japanese and Korean marking requirements are now a part of this specification. In short, this means that packaging materials subject to identification marking requirements will bear the traditional symbols included herein and in addition will bear the Japanese and Korean symbol(s) if required. Refer to sections 3.0 and 4.0 (pages 14-22) for a convenient summary table of these symbols. For artwork, refer to Engineering Specifications 11P9401 (Japanese artwork for plastic symbology) and 11P9402 (Japanese artwork for paper symbology) and the official Korean web site for downloadable files.

2.1 Cellulosic Materials

2.1.1 Performance of Recycled Paper Products

The following principles should be adopted to achieve maximum performance from recycled paper products:

- Use a recycled fiber source of premium grade (long fiber length).
- Use a recycled fiber source that is free of contaminants.
- Use recycled fiber in moderation since too much can result in poor performance.

High-performance corrugated packaging is best achieved through the specification of performance properties (e.g., compressive strength) and not necessarily the material burst strength.

2.1.1.1 Guidelines for Recycled Fiber Content

Corrugated fiberboard packaging should be manufactured using a **minimum of 50%** recycled fiber content using the maximum available post consumer material where adequate supplies exist.

2.1.1.2 Calculating Recycled Fiber Content

Because corrugated mediums travel in the vertical as well as horizontal direction, take-up factors must be used when calculating a material's combined basis weight to compensate for the additional material. Industry approximations for the take-up factors are shown below:

Flute	Take-up Factor
A	1.55
B	1.35
C	1.43

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Typical Example:
Board Type:                 Double wall
Flute:                      B/C
Test:                       350 psi
Liner Combination:          /26/44/26/42
Combined Basis Weight:      200 lbs/msf
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Sample Calculation: The combination of 100% recycled mediums and interior liners with near-virgin outside liners produces a high-performance, corrugated product with a proportionately large amount of recycled fiber. An example of a high-performance board with a similarly high contribution from reclaimed material is illustrated in Table 1.

Table 1: Recycled Content Calculation						
Component	**Basis Weight (lbs/msf)**	**(times) Recycled Content (%)**	**(equals) Recycled Content (lbs/msf)**	**(times) Take-up Factor**	**(times) Quantity**	**(equals) Total Recycled Content (lbs/msf)**
Liner board	42	25%	10.5	--	2	21.0
Liner board	44	100%	44.0	--	1	44.0
Medium	26	100%	26.0	1.43	1	37.2
Medium	26	100%	26.0	1.35	1	35.1
Total	200					137

$$\text{Recycled Content (\%)} = \frac{137 \text{ lbs/msf}}{200 \text{ lbs/msf}} = 68.5\%$$

2.1.2 Recycling Aids for Second-Generation Cellulosic Materials

IBM wishes to reduce or eliminate the use of non-recyclable packaging materials and packaging materials compositions that hinder recycling. The performance of any recycled paper products may be enhanced by incorporating any or all of these IBM required practices that apply:

- Eliminate the use of free-rise foam-in-place where feasible.
- Eliminate the use of adhesives to commingle materials (e.g., foam cushions glued to a corrugated pad).
- Minimize the use of bleached white corrugated board or oyster white board.
- Use water-based inks when printing materials. Ink components which have been FDA/USDA approved are the only acceptable alternatives.
- Use only functional coatings or impregnating that does not adversely affect material recycling. Some coatings that aid resistance to water, grease, or scuffing may be used with no adverse effect on material recycling.
- Avoid the use of film laminations and/or cross-linked resins such as urea formaldehyde or polyethylene coated paperboard or solid bleached sulfate (SBS).
- Unless specifically instructed otherwise, use paper or plastic tape or starch glues in place of staples and hot-melt adhesives on the container's manufacturer joint and/or closures.

The 100% Recycled Symbol

The American Forest and Paper Association (AFPA) promotes the use of the 100% recycled symbol on all paper products that are manufactured with 100% **recovered** paper fiber. Containers that are free of contaminants (e.g., corrugated coatings) should be marked with a symbol. The 100% recycled symbol is shown in Figure 1.

If part-specific artwork has not been included with the purchase order, the 100% recycled symbol should be printed near the box maker's certificate in approximately the same size. Markings should appear on bottom major flaps of RSC or HSC type containers, and the width panels of tubes (e.g., double-cover packaging).

Figure 1. The 100% Recycled Symbol

The Recycled Content Symbol

The AFPA recycled content symbol may be used to identify any paper or paperboard packaging that is manufactured from **less than 100%** recycled paper fibers. It is shown in Figure 2. The term "total recycled fiber" or "total recycled paper" may be used in place of "total recovered fiber". This symbol must state recycled content within 5% (by weight).

If part-specific artwork has not been included with the purchase order, the less than 100% recycled symbol should be printed near the box maker's certificate in approximately the same size.

Figure 2. The Recycled Content Symbol

Subsidiary Content Mark

A statement of subsidiary content information may be included directly below the primary claim. The subsidiary claim should be used to clarify the percentage of recovered paper fibers obtained from post consumer sources. Example: Substitute 40%

POST CONSUMER for YY% SUBSIDIARY CLAIM.

The RESY Symbol/System

This symbol (Figure 3) is only used in Europe, specifically for the German market. It is a symbol that indicates compliance to requirements which guarantee that the material bearing this symbol is recyclable. It obligates German recycling companies to collect

and recycle the material. Use of the symbol must be applied for and a fee assessed. Application can be made through local European paper or corrugated manufacturers or directly through RESY GmbH, PO Box 101541, 64215 Darmstadt, Germany.
For detailed information see http://www.resy.de/ind-eng.htm

Figure 3. The RESY Symbol. In this figure, 10330 represents a unique identifier assigned to a specific corrugated manufacturer or user.

2.2 Polymeric Material

2.2.1 Guidelines for Recycled Resin Content

In addition to specifying the use of easily recyclable materials, IBM Corporation promotes recycling through its purchase of products that contain recycled materials. To assist in achieving this objective, IBM requires that plastic packaging must be manufactured using the maximum possible post consumer recycled resin. This requirement is contingent upon several factors, including the existence of processes that produce equivalent performing materials. The percentage of post consumer content technically achievable depends on the chemistry of the material utilized, the performance requirements of its end use application, and the availability of usable post consumer recyclate feed stocks. Due to these variables, this requirement will be measured on an individual application basis. For example, polyurethane foams are currently produced using a process that does not permit recycled resin to supplement prime material while some high density polyethylene (HDPE) materials can achieve up to 100% recycled content. It is IBM's intention for suppliers to assess the use of post consumer recycled resin for IBM applications, and utilize the maximum percentage content practicable.

SPI Resin Identification Code - Guide to Correct Usage:
http://www.plasticsindustry.org/outreach/recycling/2124.htm

Note: Rigid plastic packaging containers (RPPCs) with a minimum capacity of 0.236 liters (eight ounces) or its equivalent volume and a maximum capacity of 19 liters (five gallons) or its equivalent volume must be manufactured with at least 25% post consumer recycled content material or be reused a minimum of five times, in order to be sold in the states of California or Oregon, starting 1/1/95. Certification for the above two options is required within 60 days of receiving notification via certified mail. For the 25%

post consumer recycled content option, certification should be obtained from the container manufacturer. The five time reuse option must be certified by the product manufacturer.

Figure 4. The Resin Identifier

2.2.2 Plastic Coding System (applicable to Rigid Plastic Packaging Containers)

The Society of Plastics Industry (SPI) has developed a coding system that identifies the commonly used plastic resins for the purpose of recycling. Although originally designed to assist plastic bottle manufacturers, some industrial plastic manufacturers and users of plastic packaging have adopted use of the system to assist them with resin sortation for recycling.

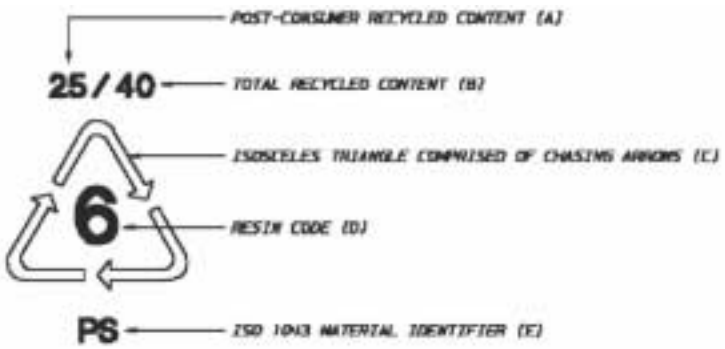
In Figure 4, "A" and "B" indicate the percent of recycled content of the material in the form: post consumer/total recycled material. This presents a straightforward means of identifying the recycled content of the material, yet eliminates the potential for misleading marketing claims. The recycled composition of a packaging part may be described as follows:

(A) 25% Post consumer waste recycled content
15% Industrial waste recycled content

(B) 40% Total recycled content
60% Material

100% Total

(C) is the figure outline; an isosceles triangle comprised of chasing arrows.
(D) is the numerical identification for the material and has been taken from the SPI standard.



Refer to Table 2 for a list of selectable SPI resin numbers. Use of the SPI resin number "7" in conjunction with the ISO 1043 acronym. If the plastic is not a pure resin, it should bear the mark "Other" in place of the ISO 1043 acronym.

(E) is the acronym identifying the material. The ISO 1043 acronyms are identified in Table 2. It is essential that the SPI resin number "7" be accompanied by the ISO 1043 acronym, if appropriate.

Application of the resin identifier requires that resins be 99% pure to avoid contamination during subsequent recycling.

If the plastic part is **not** manufactured from **100%** post consumer recycled materials, a qualification must be made which clearly identifies the minimum percentage of recycled plastic in the package. This qualifier must state recycled content within 5% (by weight). Suppliers of plastic packaging having knowledge that their materials contain or have been in contact with contaminants, including hazardous materials, must consider the effects of these elements and may best serve the recycling effort by intentionally omitting the resin identifier.

Table 2. Plastic Coding Systems

Material	ISO 1043-1 Code	SPI & EU Resin No.	Japan and Korea	EU Directive Code	SPI Code
Polyethylene terepthalate	PET	1	PET	PET	PETE
High-density polyethylene	PE-HD	2	HDPE	HDPE	HDPE
Vinyl/polyvinyl chloride *	PVC*	3 *	PVC*	PVC*	V*
Low-density polyethylene	PE-LD	4	LDPE	LDPE	LDPE
Polypropylene	PP	5	PP	PP	PP
Polystyrene	PS	6	PS	PS	PS
Polyurethane (ester type)	PURS	7	OTHER	-	-
Polyurethane (ether type)	PEUR	7	OTHER	-	-
Commingled/Mixed Resin	-	7	OTHER	-	-

*Note: IBM prohibits the use of Vinyl/polyvinyl chloride (PVC) for any packaging applications

Table 3. Other Materials

Material	Code	EU Identification Number
Corrugated Fibreboard	PAP	20
Solid Fibreboard	PAP	21
Paper	PAP	22
Steel	FE	40
Aluminium	ALU	41
Wood	FOR	50
Cork	FOR	51
Cotton	TEX	60
Jute	TEX	61
Colorless Glass	GL	70
Green Glass	GL	71
Brown Glass	GL	72

2.2.3 Marking of the Resin Identifier

Molded Parts

When marking a molded plastic piece with the resin identifier, it is recommended that the identifier be embossed on the part ejection pins. Because the pins are not an integral part of the mold, the molder selects the appropriately marked pin whenever new parts are molded. This method of imprinting is preferred as this process allows flexibility in resin recycled content identification. It also adds little expense to tool development or the piece price of molded cushion parts. Each time a cushion is molded, the resin identifier (e.g., six for EPS) and recycled content will be permanently displayed on the molded part.

Fabricated Parts

It is recommended that fabricated parts including those made of polyurethane or polyethylene similarly apply the resin identifier using either hot wire imprinting or a stamp which prints the appropriate mark using permanent ink. Caution must be used when selecting the ink and location to ensure it does not smear or transfer to the machine covers. Each individual component must be marked. In Korea, the marking may be applied with a small label.

2.3 Responsibilities of IBM's Suppliers

1. These requirements apply to all packaging materials used to make shipments to IBM. They also apply to all packaging materials purchased by IBM, and subsequently used by IBM for its products, parts and supplies shipments.
2. Suppliers of packaging material products have the sole responsibility to accurately identify and mark the post consumer recycled content in their products so as to comply with any international, federal, state and local laws. These laws may require specific levels of recycled content and/or labeling in accordance with environmental labeling and truth in advertising regulations.
3. Suppliers who design packages for shipment of parts, options, supplies or products **must ensure** that they utilize materials and methods which are conducive to recycling. Examples that introduce contaminants which would preclude the subsequent recycling of packaging materials are:
   - The use of free-rise foam-in-place where foam is dispensed directly into the corrugated container, or
   - The use of adhesives to commingle materials (e.g., polyethylene foam glued to a corrugated pad).
   - In addition, avoid the specification of colors which may inhibit recycling and unless required for a specific application, the use of halogenated flame retardants is prohibited.
4. Suppliers who use packaging materials for shipments to IBM or sell packaging materials to IBM, but do not manufacture and monitor all phases of the material

production, shall verify that their supplier of cellulosic material conforms to the requirements identified in 2 above.

5. Suppliers should contact IBM Purchasing at a manufacturing or distribution location if they are in need of assistance in understanding these responsibilities.

2.4 Local IBM Responsibilities

It is recommended that local Purchasing and Packaging Engineering groups establish site audit programs to assure packaging materials entering the manufacturing or distribution process are recyclable and properly identified with the correct resin identifier (in the case of cushioning) or properly marked using the recyclable and/or recycling symbols (whichever is applicable). These programs may vary depending upon number of suppliers, number of parts received, etc.

3.0 Japanese Symbols for Paper and Plastic Packaging Materials

All containers and packaging made of plastic or paper such as carton box, molded cushion, bag/envelope and film/sheet are applicable, but corrugated fibreboard material and fabricated plastic cushion are not applicable. Material initials are derived from ISO 11469.

In summary, the preference is for the markings to appear on each article so that they can be easily identified. However, there are many exceptions including situations where markings of any type are not normally done. In this case, a combination marking on the shipping container to identify all materials contained within the package assembly must be applied whether the materials are marked individually or not. The purpose of the combination marking is communicate to consumers in Japan prior to purchase and to identify materials that are not or cannot be marked individually. All subject items should be marked regardless of origin or destination since redeployment of inventory to Japan is possible. The regulation that requires this is applicable only to Japan but the markings may appear on goods sold outside of Japan. Unless specifically exempted herein, all packaging materials are within scope of this rule.

The package engineer shall obtain (written) acceptance from the responsible Japanese Brand Planner for the application artwork.

Step by Step Instructions:

1. Find the corresponding “part name” from the first column of the following table.
2. Then determine which material type accurately describes the item.
3. Specify that the marking(s) indicated be printed or embossed on the article itself where feasible and/or within the combination marking on the outer shipping container.
4. In case the direct marking is omitted (on the article), the combined indication on the carton or other readable location is required.
5. Plastic cases and paper cases such as plastic-CD-case and paper-CD-case are not applicable for the indication, because these cases will be stored together with CDs and will not be disposed.
6. Containers and Packaging being otherwise free from printing, stamping or embossing are exempted from the marking but the combined indication on the external container is required in this case.
7. All containers and packaging with insufficient marking space (less than 50 square centimeters) are exempted from marking but the combined indication on the external container is required.
8. The size of the identifying mark shall be more than 6 mm high for printing, and more than 8 mm high for stamping and embossing. No maximum size is given.
9. IBM Reference: The artwork files are available on ERE for P/N 11P9401 (for plastics) and P/N 11P9402 (for paper).

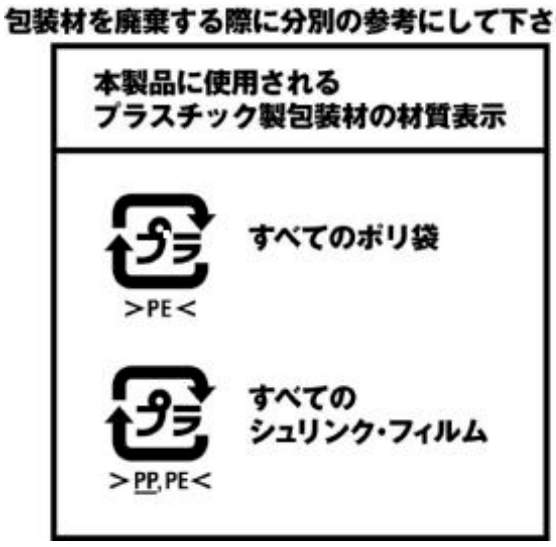
Part Name	Material/Process	Japanese Mark
Carton Box	**Corrugated Fiberboard**	**N/A**
	Paper/Paperboard	
	Plastic **(Example: made of Polyethylene (PE))**	
Cushion	**Corrugated Fiberboard**	**N/A**
	Paper/Paperboard (including molded paper pulp)	
	Molded Plastic Cushion **(Example: made of PE)**	
	Fabricated Plastic Cushion	**N/A**
Bag/Envelope	**Plastic** **(Example: made of PE)**	
	(Example: made of paper)	
Film/Sheet	**Plastic** **(Example: made of PE)**	
	Paper	

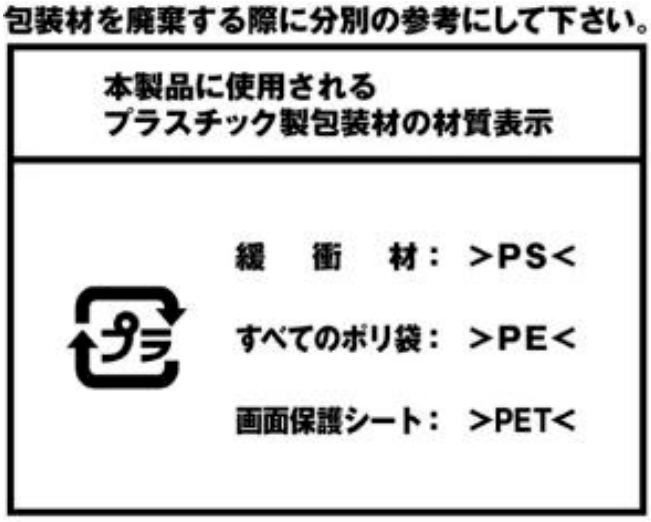
General Identification Marks	**Plastics**	
	Paper	
Composites	**Mixed Material Types:** Use the appropriate general identification mark of the most predominant item and then underline the most predominant item. In this example, a composite of predominantly polyethylene plastic (PE) combined with some metal (M).	
	Mixed Plastics: Use the appropriate general identification mark and then underline the most predominant item. In this example, a composite of predominantly polypropylene plastic (PP) combined with polyethylene terepthalate (PET).	

Notes:

1. IBM Reference: The artwork files are available on ERE for P/N 11P9401 (for plastics) and P/N 11P9402 (for paper).
2. Plastic cases and paper cases such as plastic-CD-case and paper-CD-case are not applicable for the indication, because these cases will be stored together with CDs and will not be disposed.
3. Containers and Packaging being otherwise free from printing, stamping or embossing are exempted from the marking but the combined indication on the external container is required in this case.
4. All containers and packaging with insufficient marking space (less than 50 square centimeters) are exempted from marking but the combined indication on the external container is required.
5. The size of the identifying mark shall be more than 6 mm high for printing, and more than 8 mm high for stamping and embossing.

Examples of Markings for Exterior Containers and Individual Items:

Example 1: English translation (ref) of illustration shown in example 2. Provided for understanding. Important: Print the Japanese version, not the English version where applicable.	
Example 2: Japanese marking showing how multiple materials would be identified on the outer container. Same meaning as that shown in example 1. **Important:** Where applicable, this would be what is printed (not the English version shown in example 1).	

Example 3: English translation (ref) of message shown in example 4. Important: Print the Japanese version, not the English version if applicable.	
Example 4: Japanese marking showing how multiple materials would be identified on the outer container if applicable. Important: Japanese version shall be used; English translation (ex. 3) is for reference only.	

4.0 Korean Discharge Marks for Packaging

The scope of this law that affects IBM products is all packaging materials of plastic resin, in particular that used for expanded foam cushions ("buffers") are applicable. Material initials are derived from ISO 11469. These marks are mandatory as of 1/1/2003 (**grace period expires 7/1/2004**) for almost all electronic and electrical products sold in Korea that are handled directly by end consumers. Markings must be as large as practical but must be at least 8mm x 8mm or larger. Direct printing or embossing (molded in) are preferred but an attached label may also be used if necessary. Additional details can be found at this web site.

Http://www.epr.or.kr/eng Artwork files can be downloaded. Many sizes are available.

Executive Summary for all Electronic / Electrical Items:

DO Mark: Molded and Fabricated Foam Cushions, Padded Envelopes and other cushioned plastic wraps or bags including microfoam and Bubble Wrap used **for Finished Goods (Systems) AND Options**. Options are believed to be in scope because they are SOLD to end consumers.

Do NOT Mark: Corrugated boxes or inserts, tape, banding, stretch wrap, poly bags, ESD Bags, Vacuum formed materials, Molded Pulp, paper cushions (ie. Pad Pak and similar) or any packaging for **FRU's** (field replacement units), Spare Parts or components. FRU's are out of scope because they are not SOLD.

Material Description (Shown only are those that are likely to exist in IBM).	**Korean Discharge Marks: If more than one is shown select the one that results in greatest contrast and legibility. The gray markings shown are for embossing or molding into the material.**
Expanded Polystyrene (EPS or PS) **Ref: #6 on the SPI scale** **Note: ARCEL should qualify for this symbol since it is also marked as #6 on the SPI scale.**	

Expanded HIGH Density Polyethylene (HDPE) **Ref: #2 on the SPI system.**	
Expanded LOW Density Polyethylene (LDPE) **Ref: #4 on the SPI system.**	
Expanded Polypropylene (EPP or PP) **Ref: #5 on the SPI scale**	

OTHER: May include the following: • **Polyurethane (PU)** • **Composite or Commingled Materials** **Ref: #7 on the SPI scale**	
Note: Korean markings also exist for PET, PVC, LDPE, Paper, Aluminum, Steel, Glass and other specialty items which should not apply to IBM packaging subject to this regulation. Refer to: http://www.epr.or.kr/eng for all available symbols.	

5.0 Definitions and Key Words

Buffer	Another word for “foam cushion” in South Korea. Specifically, packing materials that are made from foam-like single synthetic resins, which are made of beads containing hydrocarbons such as butane, hexane, pentane, etc., puffed by applying heat, or by other means. Examples of "buffer" materials: expanded polystyrene (EPS), expanded polyethylene (EPE) and expanded polypropylene (EPP).
Cellulosic	A substance made of plant parts including wood, paper
Commingle	To intermix dissimilar materials.
Discharge Mark (Korea)	A marking placed on the packaging materials to support recycling efforts.
Expanded Foam	Expanded resinous material with a cellular structure, manufactured by the dispersion of a gas in the liquid resin, and the subsequent setting of the expanded mass.
Fabricated Foam	Foam, usually expanded and extruded in plank form, that is cut and/or bonded into its final useful form.
Flexible Container	A plastic container that can be flexed and twisted, without the aid of tools, without damaging the container.
Foam-In-Place	Two liquid components combined under heat to produce a polyurethane foam which is cast and formed around a particular shape. This process may be performed in either of two ways: A. Using a mold, as with pre molding where finished cushions will be sent to the packager. B. Using only the item to be packaged and the shipping carton, as with free-rise foam-in-place.

Industrial Waste	Material discarded from industrial operations or manufacturing processes. Such material can only be counted as recycled content if it would otherwise have not been recovered.
Molded Foam	Foam that has been cast into a particular form and allowed to expand and form its cellular, bubble-like structure. Note: all molded foams are expanded but not all expanded foams are molded, some are extruded.
Options	Items that are purchased by consumers for the purpose of upgrading their computer systems. Examples: Monitors, hard disk drives, mice, keyboards, speakers, etc. These are “in scope” for Korean markings.
Polymeric	A substance made of plastic.
Post consumer Waste	Materials which have been diverted, sorted for recycling after they have performed their designed purpose.
Primary Package	The first layer of packaging in contact with the part.
Recyclable	Waste material which is capable of being processed for subsequent use. Materials are only recyclable if there is a widely available economically viable collection, processing, and marketing system for the material.
Recycled	Material which has already been reclaimed from a waste product and processed in order to regain material.
Recycling	The conversion of an item or material from its existing state for reuse as a similar or different item or material.
Reusable	When applied to packaging, reusable means a container, package, or component of the container or package (e.g., a foam cushion, plastic bag, etc.) is capable of being used more than one time, without being significantly changed (i.e., used in its same physical form, requiring only minor repair or cleaning). Reusable is not to be confused with recycling (which reprocesses the material).
Rigid Plastic Packaging Container (RPPC)	A plastic container which is not a flexible container, holds between 0.236 liters (eight ounces) and 19 liters (five gallons), and has essentially the same shape empty as full. Ref. California Legislation.
Secondary Material	Resultant material of a processed recyclable material.
Secondary Package	The second layer contains primary package(s).
Source Reduction	The design and manufacture of products and packaging with minimum volume of material and/or a longer useful life.
Suppliers	Organizations who provide parts, products, and components to an IBM site. This can include other IBM sites as well as independent vendors.
Tertiary Package	This includes the shipping container and all additional internal dunnage materials, if any.

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