

Product Category Rules (PCR)

(Approved PCR ID: PA-AD-02)

Publishing and Commercial printing (intermediate goods)

Release date September 8, 2010

The Carbon Footprint of Products Calculation and Labeling Pilot Program

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**Product Category Rule of
“Publishing and Commercial printing (intermediate goods)”
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Foreword

-The contents provided in this PCR may be arbitrarily changed and revised through PCR revision procedures as a result of discussions with relevant stakeholders during the period of the Japanese CFP Pilot Project. This PCR will expire at the end of the Project (scheduled until March 31, 2012).

- This English translation of the original Japanese PCR is provided for information purpose.

No.	Items	Contents
1	Scope	<ul style="list-style-type: none">- This PCR prescribes rules, requirements, and instructions applicable to “publishing and commercial printing (intermediate goods)” under the CFP Pilot Project.- In development of this PCR, publishing and commercial printing were treated as “intermediate goods (business-to-business product),” within the range up to and including the production stage where printing industry can be directly involved in.
2	Definitions of products	
2-1	Descriptions of product category	<p>(1) Publishing printing A generic term for a printed matter or material published by publishing companies. Includes the following:</p> <ul style="list-style-type: none">- newspaper (daily newspaper, evening newspaper, trade paper, color newspaper, etc.),- magazine (weekly magazine, biweekly magazine, magazine published every ten days, monthly publication, bimonthly publication, quarterly journal, etc.),- book (book, collected work, dictionary, encyclopedia, art book, yearbook, paperback, etc.),- map,- music score,- study guide, drill and textbook,- telephone book,- self-publication,- electronic publication (CD-ROM and DVD, etc.), etc. <p>[Source: <i>Vision for the Print Industry of the Year 2000</i>, The Ministry of International Trade and Industry (1988)]</p> <p>(2) Commercial printing A generic term for a printed matter used in advertising and sales promotion by commercial enterprises and used mainly internally by government offices, industries, and educational institutions. Includes the following:</p> <ul style="list-style-type: none">- poster,- catalogue,- flyer,- pamphlet,- promotional magazine,- POP,- greeting card,- calendar,

		<ul style="list-style-type: none"> - sticker, - report, - minute, - mailing list, - explanatory material, - package insert, - manual, - company history, - anniversary commemorative, - public information, - internal newsletter, - sales report, - price list, - tariff schedule, etc. <p>[Source: <i>Vision for the Print Industry of the Year 2000</i>, The Ministry of International Trade and Industry (1988)]</p>
2-2	Components of products	<ul style="list-style-type: none"> - All components (ink, glue, wire, etc.) comprising “publishing and commercial printing (intermediate goods),” which uses printing plates such as offset, gravure, flexography, and letterpress printing, etc. - Following items are excluded from the assessment. <ul style="list-style-type: none"> > On-demand printing that does not use printing plates > Electronic publishing (CD-ROM, DVD, etc.) > POP > Supplements (electronic media, samples, etc.)
3	Referenced Standards and PCRs	There is no PCR referenced as of October 10, 2009.
4	Terms and Definitions	<p>(1) Graphic arts; printing A general term for the process of manufacturing and processing printed matter. Specifically, the term refers to the technique of reproducing multiple copies of an original containing images and characters by creating a plate using that original, applying ink to the plate, and transferring the information on the plate (in the form of ink) to paper, etc. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(2) Offset printing A printing process by which printing ink on a plate is first transferred to blanket or other such transfer medium, then transferred from the blanket to paper or other receiving media. In general, it uses mostly lithographic plates. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(3) Gravure printing An intaglio printing process by which, using a plate created by photoengraving or mechanical engraving, ink on non-image areas is removed by a doctor blade. Then, applying pressure to transfers ink remaining in to the depressed image areas paper or other media. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(4) Flexography A printing process that uses engraved plate (made from rubber, resin, or other such elastic material) and liquid ink. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(5) Letterpress A relief printing process that uses type and photoengraving, etc. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p>

		<p>(6) Electronic publishing Published of materials to electronic media, such as CD-ROM, instead of paper media. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(7) POP (point of purchase advertising) Advertising displayed in retail store. [Source: <i>Promotional Marketing POP Glossary</i>, Japan Promotional Marketing Institute Inc. (2001)]</p> <p>(8) Plate-making Plate-making is a broad term that refers to “the processes or operations employed in creating a printing plate, sometimes including both prepress and printing plate process”. In this PCR, it is used only in the narrow sense of “creating the films used to create a plate”. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(9) Prepress A general term referring to all the processes up to printing, including design, layout, composition, photoengraving, electronic processing, printing plate, etc. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(10) RIP (Raster image processor) A processing system that interprets the commands of a page description language such as PostScript. A page composed of images and characters is converted to a raster image (bitmap data) that can be printed by a printer, etc. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(11) DTP (Desktop publishing) A system for using workstation or personal computer for printing, from the creation of illustrations to scanning in photographs, editing, composition, and output. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(12) DDCP (Direct digital color proofer) A device used to create a color proof by directly outputting computer digital data to paper or other media without using a film intermediate. Methods include inkjet, sublimation thermal transfer, fusion thermal transfer, and laser. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(13) Machine plate; press plate The actual plate set on the press for printing. Sometimes this term is called “machine plate (process),” referring to the process or entire operations to make a printing plate. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002); <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(14) PS plate (Pre-sensitized offset plate) An offset printing plate supplied by the manufacturer pre-coated with sensitized material. [Source: JIS B 9621 (2000)]</p>
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	<p>(15) Gum solution A solution introduced to desensitize non-image areas of the plate surface to ink. Also known as gum arabic. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(16) Master paper The general term referring to a plate made from paper or polyester film that is mainly used in electrostatic printing. It is made using a direct plate-making method, bypassing a filmmaking process, of which there are two types: electrophotographic and silver halide photography. In common parlance, paper-based electrophotographic plates are called “pink masters,” while polyester film-based silver halide photography plates are called “silver masters”. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(17) Photopolymer plate A sensitized resin relief plate comprising steel, aluminum, or polyester film support thickly coated with a sensitized resin composition hardened by inducing a photopolymerization reaction through exposure to ultraviolet light. [Source: <i>Printing Glossary</i>, The Japanese Society of Printing, Science and Technology (2002)]</p> <p>(18) Number of impressions Total number of times that paper is impressed on printing press during printing run. This value is the basis for calculating printing price. For color printing, number of impressions is “‘the number of colors’ multiplied by ‘the number of prints’”. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(19) Coating Process of applying coating material onto the surface of paper, film, or printed matter and hardening it for the purpose of adding gloss or protection. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(20) Lamination The process by which two or more sheets of paper or film are overlaid and bonded together using adhesive or thermal compression or other such means. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(21) Cutting The process of cutting stacked and aligned paper to a specific size. [Source: <i>Book Binding Glossary</i>, Nihon Seihon Koshi Shinbunsha (1998)]</p> <p>(22) Book binding The book finishing process in which signatures are assembled in specific order and then bound, using glue, wire, or thread, in an easy to read manner. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(23) Die cutting In the production of corrugated board or paperboard boxes, printed board is cut and creased to a specific template. [Source: <i>Glossary of Printing Terminology Useful in the Pressroom</i>, Japan Federation of Printing Industries (2002)]</p> <p>(24) Folding In the book binding process, the folding of a signature in the correct folding order</p>
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		<p>to obtain serial page numbers. [Source: <i>Printing Terminology - Basic Terms</i>, JIS Z 8123 (1995)]</p> <p>(25) Binding; Stitching To bind book contents (pages) in order to prevent from scattering. A book is bound by using thread, wire, adhesive, or spiral, etc. [Source: <i>Book Binding Glossary</i>, Nihon Seihon Koshi Shinbunsha (1998)]</p> <p>(26) Tipping A leaf (single page) or folded insert (printed pages collated separately from the book proper) that is pasted into a specified place into a book. Done by manually pasting or using a tipping machine. [Source: <i>Book Binding Glossary</i>, Nihon Seihon Koshi Shinbunsha (1998)]</p> <p>(27) Cover A cover protects the inside of the book, displays its contents, provides ornamentation, and determines the book's appearance. [Source: <i>Book Binding Glossary</i>, Nihon Seihon Koshi Shinbunsha (1998)]</p> <p>(28) Bundling, Strapping Method by which magazines and such that are to be simply packaged or not completely packaged are bundled together to a height of about 30 cm by twine, string, etc. [Source: <i>Book Binding Glossary</i>, Nihon Seihon Koshi Shinbunsha (1998)]</p> <p>(29) Open recycling A type of recycling in which discharged materials are collected for reuse and recycled as raw material, material, etc. for products besides the original product. Also called "cascading" or "downgrade recycling". [Source: <i>Product Environmental Load Allocation for EcoLeaf Recycling/Reuse</i>, Japan Environmental Management Association for Industry (2004), and other reference material]</p>
5	Range of assessment	
5-1	Calculation unit	Sales (delivery) unit
5-2	Life cycle stages	<p>Following life cycle stages shall be covered.</p> <ul style="list-style-type: none"> - Raw material acquisition stage - Production stage
6	General requirements applied to all stages	
6-1	Life cycle flow chart	<ul style="list-style-type: none"> - Life cycle flow chart is provided in Annex A (normative). - When calculating GHG emissions, make detailed life cycle flow chart for each targeted product.
6-2	Range of data collection	<ul style="list-style-type: none"> - Direct department-associated "lighting" and "air-conditioning" as well as "fuel and electricity (including that for lighting and air-conditioning) used for warehouse facilities storing raw materials, intermediate goods, or products" shall be included in data collection. - Indirect department (e.g., clerical department, research department, etc.) shall be excluded. If it is difficult to separate only direct department from those indirect departments, indirect department may be included. - Locality shall not be taken into account.
6-3	Data collection period	<ul style="list-style-type: none"> - Data collection period shall be the most recent and consecutive one year. - When the data above can not be collected, precision of the data used shall be assured.
6-4	Allocation	Use physical quantities that can be obtained by calculators of their GHG emissions and are proportional to input/output. Details of physical quantities are provided in No.7-6 and No.8-6.
6-5	Cut-off criteria	<ul style="list-style-type: none"> - When conducting cut-off, the range of cut-off shall be within 5% of the total life cycle GHG emissions, and the range shall be clearly reported. Cut-off shall,

		<p>however, be conducted, provided that it is difficult to use any scenarios, similar data, and estimated data.</p> <p>- [Special exceptions of cut-off criteria] is provided in No.7-6.</p>
6-6	Others	<p>[Rules related to transport]</p> <ul style="list-style-type: none"> - All transports between sites shall be included. - Primary data shall be collected as much as possible, either by the “fuel consumption method,” the “fuel cost method,” or the “ton-kilometer method”. (See Annex B for your understanding.) - GHG emissions associated with transport within the same site shall not be included. - When there are multiple suppliers, delivered sites, or consignees, etc., weighted average value (kg) of fuel consumption amount shall be used. - For international transport, regarding road transport in other country, if there are national or private rules of transport in the country, data may be collected pursuant to the rules. <p>[Wastes treatment]</p> <ul style="list-style-type: none"> - GHG emissions associated with combustions of carbon derived from fossil fuels contained in wastes incinerated shall be included. - For the items to be recycled, GHG emissions of transport and up to and including recycling preparation process shall be calculated and included. - GHG emissions reduced by indirect effects shall not be included.
7	Requirements for the raw material acquisition stage	
7-1	Range of the processes	<p>Following processes shall be covered.</p> <p>(1) Processes related to acquisition and manufacture of raw materials (including intermediate materials and semi-processed goods)</p> <p>(2) Processes of transport within/outside the country, from producing site (or supplier) of raw materials, etc. to manufacturing plant (manufacturing site of applicable product).</p>
7-2	Data collection items	<p>Both GHG emissions per unit related to raw materials acquisition and manufacture (kg-CO₂e/kg) and input amounts shall be collected. (For input amounts, unit listed in [] shall be used)</p> <p>a) for DTP materials manufacturing process</p> <ul style="list-style-type: none"> - “proofing stock” [kg] <p>b) for plate-making materials manufacturing process</p> <ul style="list-style-type: none"> - “plate-making film” [m²] - “developer and fixer solution” [kg] <p>c) for press plate materials manufacturing process</p> <ul style="list-style-type: none"> - “PS plate” and “master paper” used in offset printing [m²] - “developer” and “gum solution” used for PS plate [kg] - “developer” and “fixer solution” used for master paper [kg] - “developer,” “plating solution,” “copper ball,” and “etching fluid” used in the plate process for gravure printing [kg] - “flexographic plate” used for the flexographic printing [m²] - “developer,” etc., used for the flexographic plate [kg] - “sensitized resin letterpress plate,” etc., used in letterpress printing [m²] - “developer,” etc. used for sensitized resin letterpress plates, etc. [kg] <p>d) for printing materials manufacturing process</p> <ul style="list-style-type: none"> - “substrate,” “ink,” “solvent,” and “fountain solution” [kg] <p>e) for coating materials manufacturing process</p> <ul style="list-style-type: none"> - “varnish” [kg] <p>f) for lamination materials manufacturing process</p> <ul style="list-style-type: none"> - “film” and “adhesive” [kg] <p>g) for die cutting and cutting materials manufacturing process</p> <ul style="list-style-type: none"> - “trimming die” used for die cutting [piece]

		<p>h) for book binding/finishing materials manufacturing process</p> <ul style="list-style-type: none"> - “glue,” “wire,” “cover material,” and paperboard (box)” [kg] <p>i) for packaging materials manufacturing process</p> <ul style="list-style-type: none"> - “cardboard,” “pp strap band,” “twine,” “kraft paper,” and “stretch film” [kg]
7-3	Primary data collection items	<ul style="list-style-type: none"> - Primary data of raw materials actually used shall be collected. If it is difficult, secondary data may be used. - When other raw materials not listed in No.7-2 are used, data shall be collected under above condition.
7-4	Primary data Collection method and Requirements	Not stipulated.
7-5	Scenario	<p>[Transport scenario]</p> <p>If it is difficult to collect primary data, the following scenario may be used.</p> <p>(1) Transport within the country</p> <p>a) Road transport only</p> <ul style="list-style-type: none"> - Means: 4-ton truck (10-ton truck is used only for web offset printing substrate) - Distance: 500km for one-way (assumed the distance from Tokyo to Osaka, as transport between prefectures) - Loading ratio: 25% <p>b) Transport including sea transport</p> <p>1) Transport within the country (Raw materials producing site or supplier => Port)</p> <ul style="list-style-type: none"> - Means: 4-ton truck - Distance: 100km for one-way (assumed the distance from a prefectural border to another side of the boarder, as transport within a prefecture) - Loading ratio: 25% <p>2) Sea transport within the country (Port to port)</p> <ul style="list-style-type: none"> - Means: Container ship (4,000 TEU or less) - Distance: 1,500km for one-way (assumed the distance from Tokyo to Hokkaido, or Tokyo to Kyusyu, as domestic transport) <p>3) Transport within the country (Port to manufacturing site of applicable product)</p> <ul style="list-style-type: none"> - Means: 4-ton truck - Distance: 500km for one-way (the distance from Tokyo to Osaka is assumed, as transport between prefectures.) - Loading ratio: 25% <p>(2) Transport including international transport</p> <p>For transport distance in international sea transport, the CFP Pilot Project Secretariat prepares the data as “reference data”.</p>
7-6	Other	<p>[Allocation]</p> <p>Each process shall be allocated by the physical quantity shown below.</p> <p>(1) Plate-making materials manufacturing process</p> <ul style="list-style-type: none"> - For “developer” and “fixer solution”, “area (m²)” of film used <p>(2) Press plate materials manufacturing process</p> <ul style="list-style-type: none"> - For “developer” and “gum solutions” used for PS plate, the “area (m²)” of PS plate used - For “developer” and “fixer solutions” used for master paper, the “area (m²)” of master paper used

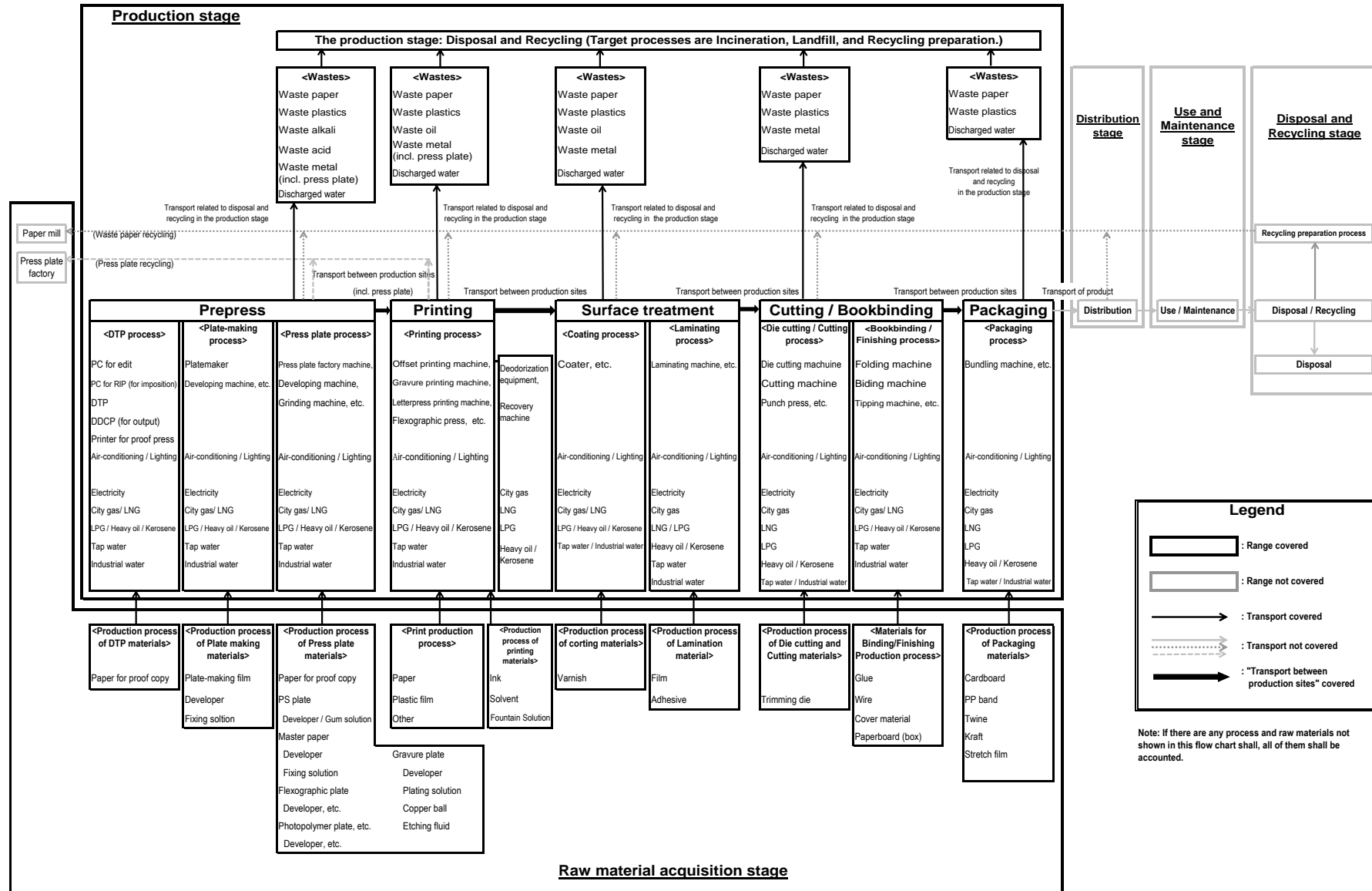
		<ul style="list-style-type: none"> - For “developer,” “plating solutions,” “copper ball,” and “etching fluid” used in the plate process for gravure printing, the “area (m²)” of gravure plate used - For “developer,” etc. used for the flexographic plate, the “area (m²)” of flexographic plate used - For “developer,” etc. used for the sensitized resin letterpress plate, the “area (m²)” of sensitized resin letterpress plate used <p>(3) Printing materials manufacturing process</p> <ul style="list-style-type: none"> - For “ink,” “solvent” and “fountain solutions,” “number of sheets” of substrate, “number of impressions” or “weight (kg)”. In the case of using web offset presses, “number of folds of the substrate” refers to “number of sheets of substrate” <p>(4) Coating materials manufacturing process</p> <ul style="list-style-type: none"> - For “varnish,” “number of sheets” of substrate <p>(5) Laminating materials manufacturing process</p> <ul style="list-style-type: none"> - For “adhesive,” “number of sheets” of substrate <p>(6) Book binding/finishing materials manufacturing process</p> <ul style="list-style-type: none"> - For “glue” and “wire,” “number of copies” of publishing and commercial printing product or “number of bound sheets” of substrate <p>(7) Packaging materials manufacturing process</p> <ul style="list-style-type: none"> - For “cardboard,” “PP strap band,” “twine,” “kraft paper” and “stretch film,” “number of sheets,” “number of copies,” or “number of packages” <p>[Special exceptions of cut-off criteria]</p> <p>(1) Cut-off based on GHG emission</p> <ul style="list-style-type: none"> - The following materials may be conducted cut-off since it is confirmed in trial calculation that GHG emissions for each raw material are less than 0.1% of the total GHG emissions from the raw material acquisition stage. <ul style="list-style-type: none"> (a) “Printer toner” and “printer ink” used in the “DTP process” (b) “Proofing ink” used in the “plate-making process” (c) “Cleaning fluid,” “powder,” and “cloths” used in the “printing process” (d) “Thread” and “bookmarks” used in the “book binding/finishing process” - When cut-off conducted, the total GHG emissions of raw materials shall be adjusted to 100% by the following method: $\text{GHG emissions} = (\text{collected GHG emissions}) \times 100/99$ - See Annex C for overview of test calculation of GHG emissions that determined the raw materials for exclusion. <p>(2) Cut-off based on weight</p> <p>Because publishing and commercial printing comprise diverse types and production lots, their raw materials input/output amounts vary widely in their effect on the total weight. This PCR therefore does not set a single cut-off value for the input weights of raw materials. For cut-off of unspecified raw materials, it requires a careful conduction after performing test calculation and confirming the results.</p> <p>[Data collection from multiple suppliers]</p> <p>Primary data of all suppliers shall be collected. For supplier whose primary data collection is difficult, the weighted average of primary data of other suppliers may be used. However, the ratio of such substituted data shall be less than 50% of the total amount of the raw material.</p>
8	Requirements for the production stage	

8-1	Range of the processes	<p>Following processes shall be covered.</p> <p>(1) Processes related to manufacture and packaging, etc. (including transport between manufacturing sites)</p> <p>(2) Processes related to transport and proper wastes treatment for the waste materials considered as wastes..Note: “Manufacture, packaging, etc.” include all the processes such as “DTP,” “plate-making,” “press plate,” “printing,” “coating,” “lamination,” “die cutting /cutting,” “book binding/finishing,” and “packaging,” etc.</p>
8-2	Data collection items	<p>(1) For all processes, types and input amounts of electricity, fuel, and water input to the production stage shall be collected.</p> <ul style="list-style-type: none"> - Electricity (kWh), city gas (Nm³), LNG (t), LPG (t), heavy oil (kL), kerosene (kL), tap water (kg) and industrial water (m³) - When groundwater is used, input amount of fuel and electricity used for pumping up the groundwater shall be collected <p>(2) Types and discharge amounts of wastewater, wastes and recycled items from the production stage</p> <ul style="list-style-type: none"> a) DTP, plate-making, press plate processes <ul style="list-style-type: none"> - Waste paper (t), waste plastic (t), waste alkali (t), waste acid (t) waste metal (t), and discharged water (m³) b) Printing process <ul style="list-style-type: none"> - Waste paper (t), waste plastic (t), waste oil (t), waste metal (t), and discharged water (m³) c) Coating, lamination processes <ul style="list-style-type: none"> - Waste paper (t), waste plastic (t), waste oil (t), waste metal (t), and discharged water (m³) d) Die cutting/cutting, book binding/finishing processes <ul style="list-style-type: none"> - Waste paper (t), waste plastic (t), waste metal (t), and discharged water (m³) e) Packaging process <ul style="list-style-type: none"> - Waste paper (t) and waste plastic (t)
8-3	Primary data collection items	<ul style="list-style-type: none"> - Primary data on manufacturing processes actually conducted shall be collected. If it is difficult, secondary data may be used. - When other manufacturing processes data not listed in No.8-2 are used, data shall be collected under above condition.
8-4	Primary data Collection method and Requirements	<ul style="list-style-type: none"> - If electricity is generated in manufacturing site and used for the production of the product, the fuel consumption amount used for the electricity generation shall be collected as primary data, and calculate GHG emissions associated with the production and combustion. - If electricity consumption amount of the processing machine is difficult to be measured, “power rating” of used machine, etc. may be used. In this case, however, the reason of difficulty in obtaining primary data by measurement shall be stated.
8-5	Scenario	<p>[Transport scenario]</p> <p>If it is difficult to collect primary data, the following scenarios may be used.</p> <p>(1) Transport of intermediate goods between manufacturing sites</p> <ul style="list-style-type: none"> - Means: 4-ton truck - Distance: 100km for one-way (assumed the distance from a prefectural border to another side of the boarder, as transport within a prefecture) - Loading ratio: 25% <p>(2) Transport for disposal and recycling in the raw material acquisition stage</p> <ul style="list-style-type: none"> - Means: 4-ton truck - Distance: 100km for one-way (assumed the distance from a prefectural border to another side of the boarder, as transport within a prefecture) - Loading ratio: 25%

		<p>[Waste treatment scenario]</p> <p>If it is difficult to collect primary data, the following scenario may be used. (Values are the ratio of generated amounts by treatment method).</p> <ul style="list-style-type: none"> - For “waste paper,” incineration shall be set as 2%, recycling as 98% (*). - For “waste metal,” open-recycling shall be set as 100% (*). - For “plastic waste,” “waste oil,” “waste alkali,” and “waste acid,” incineration shall be set as 100%. <p>(*) Source: “<i>Investigation into the State of By-Products Generation (2006 Results)</i>,” Clean Japan Center (issued on March 2008)</p>
8-6	Other	<p>[Rules related to allocation]</p> <p>Each process is allocated by the following physical quantity.</p> <ol style="list-style-type: none"> (1) DTP process <ul style="list-style-type: none"> - “Number of pages (A4-size equivalent)” (2) Plate-making process <ul style="list-style-type: none"> - “Area” of film used (m²) (3) Press plate process <ul style="list-style-type: none"> - “Area” of plates used (m²) (PS plate, master paper, gravure plate, flexographic plate, sensitized resin letterpress plate, etc.) (4) Printing process <ul style="list-style-type: none"> - “Number of sheets” of substrate, “number of impressions,” or “weight of substrate (kg)” For web offset presses, “number of folds of the substrate” means “number of sheets of substrate”. (5) Coating process <ul style="list-style-type: none"> - Number of sheets” of substrate (6) Lamination process <ul style="list-style-type: none"> - “Number of sheets” of substrate (7) Die cutting/cutting process <ul style="list-style-type: none"> - “Number of copies” or “number of sheets” (8) Book binding/finishing process <ul style="list-style-type: none"> - “Number of copies” or “number of sheets” (9) Packaging process <ul style="list-style-type: none"> - “Number of copies,” “number of sheets,” or “number of packages” <p>[Production in multiple manufacturing sites]</p> <p>Primary data on all manufacturing sites shall be collected. For manufacturing site whose primary data is difficult to be collected, weight average of primary data of other manufacturing sites may be used.</p> <p>[Recycled materials and reused materials]</p> <ul style="list-style-type: none"> - If recycled materials are used for raw materials, calculate GHG emissions emitted after the transport processes for ones readying for the recycling preparations. - If reused materials are used for raw materials, calculate GHG emissions related to processes for reusing (collection, cleaning, etc.).
9	Requirements for the distribution stage	
9-1	Range of the processes	Excluded from the assessment.
9-2	Data collection items	Excluded from the assessment.
9-3	Primary data collection items	Excluded from the assessment.
9-4	Primary data Collection method and Requirements	Excluded from the assessment.
9-5	Scenario	Excluded from the assessment.
9-6	Other	Excluded from the assessment.
10	Requirements for the use and maintenance stage	
10-1	Range of the processes	Excluded from the assessment.

10-2	Data collection items	Excluded from the assessment.
10-3	Primary data collection items	Excluded from the assessment.
10-4	Primary data Collection method and Requirements	Excluded from the assessment.
10-5	Scenario	Excluded from the assessment.
10-6	Other	Excluded from the assessment.
11	Requirements for the disposal and recycling stage	
11-1	Range of the processes	Excluded from the assessment.
11-2	Data collection items	Excluded from the assessment.
11-3	Primary data collection items	Excluded from the assessment.
11-4	Primary data Collection method and Requirements	Excluded from the assessment.
11-5	Scenario	Excluded from the assessment.
11-6	Other	Excluded from the assessment.
12	Items applied secondary data	<ul style="list-style-type: none"> - The data provided in the “Tentative Database of GHG Emission Factors for the CFP Pilot Project” (hereafter called “Tentative Database of GHG Emission Factors”). - Of secondary data which is not included in the “Tentative Database of GHG Emissions Factors,” the data prepared as “reference data” by the CFP Pilot Project Secretariat.
13	Communication requirements	
13-1	Unit to be displayed on the label	- Calculation unit shall be used. The communication methods described in the “Guidelines of CFP system” and the “Standards of PCR development” can also be used. However, in this case, its appropriateness shall be studied on the CFP verification panel.
13-2	Label position and Size	<ul style="list-style-type: none"> - When displaying CFP label, follow the common rules, the “Specifications of CFP Label and Displaying Other Information,” and display the label as “intermediate goods”. - For displayed position, label can be displayed on invoice, packing list, or packaging. However, it shall not be displayed directly on products of publishing and commercial printing, in order to avoid confusion with the CFP of “final goods”. - Those who completed assessment process of their GHG emissions can display “list of verified products” on their catalog or the website, etc.
13-3	Contents of additional information	Not stipulated.

Annex A (normative) Life cycle flow chart



Annex B (informative): Collection of fuel consumption data and calculation of GHG emissions for truck transport

B.1 Fuel consumption method

B.1.1 Collect data on fuel consumption [L] for each mean of transport, and convert the fuel unit, “L,” to “kg” by using following equation.

$$\text{Fuel consumption [kg]} = \text{Fuel consumption [L]} \times \text{fuel density } \gamma \text{ (kg/L)}$$

$$\text{Fuel density of gasoline: } \gamma = 0.75 \text{ kg/L}$$

$$\text{Fuel density of light oil: } \gamma = 0.83 \text{ kg/L}$$

B.1.2 Calculate GHG emissions by multiplying fuel consumption [kg] by secondary data for each type of fuel.

B.2 Fuel cost method

B.2.1 Collect data on fuel cost [km/L] and transport distance [km] for each mean of transport, and calculate fuel consumption [kg] by using following equation.

$$\text{Fuel consumption [kg]} = (\text{Transport distance [km]} / \text{Fuel cost [km/L]}) \times \gamma \text{ (kg/L)}$$

B.2.2 Calculate GHG emissions by multiplying fuel consumption [kg] by secondary data for each type of fuel.

Annex C (informative): Overview of test calculation of GHG emissions by specifying raw materials conducted cut-off

C.1 Names and numbers of samples of “publishing and commercial printing” products subjected to test calculations

Name	Number of samples
Pamphlet	6
Catalogue	6
Monthly publication	3
Book	2
Calendar (hanging type)	3

C.2 Overview of test calculation results

No.	Name of raw materials input	Input quantitative ratio * (%)	GHG emissions quantitative ratio * (%)
1	“Printer toner” used in the DTP process	0.000 - 0.003	0.000 - 0.005
2	“Printer ink” used in the DTP process	0.000 - 0.002	0.000 - 0.002
3	“Proofing ink” used in the press plate process	0.000 - 0.031	0.006 - 0.063
4	“Cleaning fluid” used in the printing process	0.005 - 0.030	0.011 - 0.073
5	“Powder” used in the printing process	0.002 - 0.074	0.002 - 0.020
6	“Clothes” used in the printing process	0.000 - 0.115	0.000 - 0.001
7	“Thread” used in the book binding/finishing process	0.017	0.056
8	“Bookmarks” used in the book binding/finishing process	0.017	0.050

* The “input quantitative ratio” or “GHG emissions quantitative ratio” is the ratio (%) to either; the “total value for all raw materials inputs” or the “total value for the GHG emissions of all raw materials” in the raw material acquisition stage for each sample subjected to test calculation.

Annex D (informative)

Referenced materials

- D.1 *Guidelines of CFP (Carbon Footprint of Products) system (revised edition)***, The rules study committee for calculation, communication and assessment of CO₂ emissions (July 16, 2010)
- D.2 *Standards of PCR (Product Category Rules) development (revised edition)***, The rules study committee for calculation, communication and assessment of CO₂ emissions (July 16, 2010)
- D.3 *General Principles for the Assessment and Labeling of Carbon Footprint of Products (TS Q 0010 (2009))***
(April 20, 2009)
- D.4 *Specifications of CFP Label and Displaying Other Information***, The Ministry of Agriculture, Forestry and Fisheries, the Ministry of Economy, Trade and Industry, the Ministry of Land, Infrastructure, Transport and Tourism, and the Ministry of the Environment (August 3, 2009)
- D.5 *Vision for the Print Industry of the Year 2000***, The Ministry of International Trade and Industry (1998)
- D.6 *Investigation into the State of By-Products Generation (2006 Results)***, Clean Japan Center (March, 2010)

[PCR revision histories]

Approved PCR ID	Release data	Contents revised
PA-AD-02	September 8, 2010	<p>(1) Changed corresponding to the revisions of the basic rules.</p> <p>(2) Adapting the contents to the new PCR draft template.</p> <p>(3) For handling of recycling of the wastes discharged from each stage (other than the disposal and recycling stage), up to and including recycling preparation process shall be calculated. (It applies mutatis mutandis to “No.2-(7): Handling of recycling standards” provided in the “Standards of PCR development”.)</p> <p>(4) For handling of the wastes collected for value, up to and including the recycling preparation process shall be calculated. (It applies mutatis mutandis to “No.2-(7): Handling of recycling standards” provided in the “Standards of PCR development”.)</p>