

Eco Mark Product Category No.162

“Laminators Version1.0” Certification Criteria

—Applicable Scope—

A pouch- type laminator that treats A4- or A3-size films by laminating them

Established March 20, 2018
Last revised April 1, 2019
Expiration date March 31, 2030

Japan Environment Association
Eco Mark Office

NOTE: This document is a translation of the criteria written in Japanese. In the event of dispute, the original document should be taken as authoritative.

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1. Purpose of Establishing Certification Criteria

Omitted

2. Applicable Scope

A pouch- type laminator that treats A4- or A3-size films by laminating them.

3. Terminology

Omitted

4. Certification Criteria and Certification Procedure

The corresponding boxes in the Attached Certificates shall be checked/filled in, stamped with the applicant company seal and submitted. When overseas Ecolabelling is acquired by utilizing the Mutual Recognition Agreement, for certifying 4-1-2.(5) and (6), the testing shall be conducted at a testing laboratory certified by ISO/IEC 17025 (corresponding JIS Q17025 “General requirements for the competence of testing and calibration laboratories”).

4-1. Environmental Criteria and Certification Procedure

4-1-1. Resource Saving and Resource Recycling

- (1) The product shall have a design that enables disassembly for recycling. Specifically, the Appendix 1 “Product design checklist” shall be satisfied.

[Certification Procedure]

Compliance with this item shall be indicated in the attached certificate. In addition, Form 1 “Product design checklist” shall be submitted.

- (2) Supply of the spare parts shall be continued for five years after suspension of the product manufacturing.

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate. In addition, copies of the instruction manual, leaflet and website indicating the matters related to this item shall be submitted.

- (3) Repair subcontract systems shall be available, and repairs shall be carried out as requested by the users (repair system). The following requirements on the repair system shall be satisfied:

- a. information on repair subcontract system is available;
- b. information on the scope of repair (details of services), contact address, etc.

are provided to users.

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate. In addition, copies of the instruction manual, leaflet and website indicating the matters related to this item shall be submitted.

- (4) Consideration shall be given to resource saving of packaging materials. Specifically, Appendix 2 “Packaging material checklist” shall be satisfied.

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate. In addition, Form 2 “Packaging Material Check List” shall be submitted.

4-1-2. Prevention of Global Warming

- (5) Power consumption from start of warm-up till completion of treatment of one laminate sheet shall satisfy Table 1.

Table 1 standard of power consumption

Maximum size of a film to be treated	power consumption (Wh)
A3	≤30
A4	≤24

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate and a test result (Form 3) of power consumption from start of warm-up till completion of treatment of one laminate sheet shall be submitted. Note that measurement conditions shall be as described below. If a result of a first measurement exceeds 90% of the upper limit of the criteria in Table 1, the applicant shall perform a second measurement when five hours elapse after the main power source is turned off, and submit results of the two measurements (The results of both measurements shall each satisfy the criteria in Table 1).

<Measurement Conditions>

- Film: Each company’s (recommended) normal A4-size film having a thickness of 100μm (the short-edge binding).
- Paper to be used: Copy paper (size: A4 (210 x 297 mm), basis weight: 64 g/m²)
One sheet
- Ambient temperature: 25°C±5°C
- Set heating temperature: (Recommended) Normal set temperature based on the above conditions of the corresponding device

- Treatment rate: (Recommended) Normal set rate based on the above conditions of the corresponding device [50Hz]

The name and address of the analysis test center and the conformance to ISO/IEC17025 (corresponding JIS Q17025) shall also be indicated in the Attached Certificate.

- (6) The laminator shall have the automatic off function by which it shifts to the off mode when a non-operation state has continued for a certain period of time while the main function is stopped. In addition, the time to shift to the off mode shall be set to 60 minutes or shorter before shipment, and off mode power consumption shall be 2.0W or lower.

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate, and the test result of the off mode power consumption shall be submitted

The name and address of the analysis test center and the information on the conformance to ISO/IEC17025 (corresponding JIS Q17025) shall also be indicated in the Attached Certificate.

A copy of a corresponding page of an instruction manual, leaflet, website, etc. indicating automatic off function shall be submitted.

4-1-3. Restriction and Control of Hazardous Substances

- (7) The content rate of lead, mercury, cadmium and those compounds, hexavalent chromium compounds, polybrominated biphenyl(PBB) and polybrominated diphenyl ether(PBDE) in the product shall comply with ANNEX II of the [Commission Delegated Directive (EU)2015/863 amending Annex II of RoHS (II) Directive] (Table 2). However, this does not apply to those substances specified in ANNEX III.

[Certification Procedure]

Compliance with this item and the confirmation method shall be indicated in the Attached Certificate. In addition, it is recommended that checking is performed based on JIS Z 7201 “Management of chemical substances in products - Principles and guidelines”.

Table 2. Standard value of content rate

Material	Content rate[wt%]
Lead and its compounds	≤ 0.1
Mercury and its compounds	≤ 0.1
Cadmium and its compounds	≤ 0.01
Hexavalent chromium compounds	≤ 0.1
Polybrominated biphenyl (PBB)	≤ 0.1
Polybrominated diphenylether (PBDE)	≤ 0.1
Bis(2-ethylhexyl) phthalate(DEHP) *1	≤ 0.1
Butyl benzyl phthalate (BBP) *1	≤ 0.1

Dibutyl phthalate(DBP) *1	≤ 0.1
Diisobutyl phthalate(DIBP) *1	≤ 0.1

* The content rate refers to the content proportion in a homogeneous substance (minimum unit that can be separated by rule with totally uniform composition).

*1 Applicable to the applications submitted on or after July 22, 2019.

- (8) Polymer containing halogen shall not be used for plastic casing parts weighing over 25g. However, fluoroplastics, for example, PTFE, etc. are allowed to be used. In addition, plastic casing parts weighing over 25g shall have no short-chain chlorinated paraffin (SCCPs) (the number of chained C is 10 to 13 and contained chloride concentration is 50% or over), Polybrominated diphenylether (PBDEs, Bromine 4-7 and 10) and Hexabromocyclododecane (HBCD) added.

[Certification Procedure]

Compliance with this item and the confirmation method shall be indicated in the Attached Certificate. In addition, Form 4 “plastic material list used” shall be submitted. The manufacturer of the raw material, whether polymers containing halogens are added, and the name and CAS number of the flame retardants used or the code number according to the ISO1043-4 (JIS6899-4) shall be indicated. In addition, it is recommended that confirmation is performed based on JIS Z 7201 “Management of chemical substances in products - Principles and guidelines”.

- (9) In manufacturing the applied product, related environmental laws and regulations and pollution control agreement (hereinafter referred to as the “Environmental Laws, etc.”) must be followed with respect to air pollution, water contamination, noise, offensive odor, and emission of hazardous materials in the area where the plant performing the final manufacturing process is located.

In addition, the state of compliance with the Environmental Laws, etc. for the last five years from the date of application (whether there is any violation) must be reported. If there is any violation, it is necessary that proper remedies and preventive measures have been already taken, and the related Environmental Laws, etc. must thereafter be followed appropriately.

[Certification Procedure]

With respect to the compliance with the Environmental Laws, etc. in the area where the plant performing the final manufacturing process is located, a certificate issued by the representative of the business of manufacturing the applied product or the manager of the relevant plant (entry or attachment of the list of names of the Environmental Laws, etc.) must be submitted. (Form 5)

In addition, it is necessary to report whether there is any violation during the last five years, including a violation subject to administrative punishment or administrative guidance, and if there is, the following documents in a and b must be submitted:

- a. With respect to the fact of violation, guidance documents from administrative agencies (including order of correction and warning) and copies of written answers (including those reporting causes and results of correction) to such documents (making a series of progress clear);
- b. Following materials (copies of recording documents, and so on) concerning the management system for compliance with the Environmental Laws, etc. in 1)-5):
 - 1) List of the Environmental Laws, etc. related to the area where the plant is located;
 - 2) Implementation system (organizational chart with entry of roles, etc.);
 - 3) Document stipulating retention of recording documents;
 - 4) Recurrence prevention measures (future preventive measures);
 - 5) State of implementation based on recurrence prevention measures (result of checking of the state of compliance, including the result of onsite inspection).

- (10) Polymer containing halogen shall not be used for a laminate film that is supplied with the product or sold as a standard good.

[Certification Procedure]

Compliance with this item and the confirmation method shall be indicated in the Attached Certificate. In addition, it is recommended that confirmation is performed based on JIS Z 7201 “Management of chemical substances in products - Principles and guidelines”.

4-1-4. Information provision to uses

- (11) Information for users shown in 1) to 5) below shall be provided in an instruction manual, leaflet, website, etc.:
- 1) Information on appropriate usage of the following a. to c.
 - a. Thickness and size of a corresponding laminate film
 - b. Method of maintenance, such as care and cleaning of a roller, etc.
 - c. Precaution for use (not to cut a laminate film before treatment etc.)
 - 2) Information on usage that contributes to energy saving of the following a. to e.
 - a. Rated (maximum) power consumption
 - b. Warm-up period
 - c. Laminate treatment period (rate)
 - d. Energy saving function (such as the automatic off function, etc.)
 - e. Turning off the power switch after using (unplug from the outlet)
 - 3) Information on safety such as not disassembling the product
 - 4) Information on smell while in use (how to handle smell, etc.)
 - 5) Information on disposal or recycling of the product after use

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate. In addition, copies of the applicable part of the instruction manual, leaflet and website indicating information provided to users shall be submitted.

4-2. Quality criteria and certification procedure

- (12) The laminator shall have the reverse function that enables removal of any jammed laminate film, etc.

[Certification Procedure]

Compliance with this item shall be indicated in the Attached Certificate. In addition, copies of the applicable part of the instruction manual, leaflet and website indicating information provided to users shall be submitted.

5. Considerations

In manufacturing products, it is desirable to consider the following, although they are not requirements for certification. The conformance to the individual criteria item shall be indicated in Attached Certificates.

- (1) A collection and recycling system of products has been established.
- (2) As product specifications, in view of energy and resource saving, a laminate film of which thickness is less than 100 μ m shall also be usable, and such information shall be provided accordingly.
- (3) To facilitate recycling of rare metals (neodymium, dysprosium, cobalt, tungsten, tantalum and samarium) contained in equipment, parts containing many rare metals shall be identified.
- (4) A recycled material shall be used in a laminate film that is supplied with the product or sold as a standard good.

6. Product Classification, Indication and Others

- (1) A product classification shall be on an item number basis. However, a product of the same brand but having a different casing color shall be treated as the same product classification.
- (2) In principle, Eco Mark shown as below shall be indicated on the product. The licensees of Eco Mark Utilization Contract who own Eco Mark products shall also be

allowed to use the indication of the logo and certification number as before.



(Note for the indication)

- *For indicating the logo, Eco Mark certification number (eight-digit number) or the name of the licensee using the logo shall be appeared.
- * Such expression as “Eco Mark product” can be used following the 2.(2) of the Guide to Eco Mark Usage.
“Eco Mark product”, “#Eco Mark”, “www.ecomark.jp”, “Eco Mark Certificate”
- * In accordance with “Environmental Labeling Guidelines” of the Ministry of the Environment of Japan, etc., the environmental claims of certified products may be indicated in association with Eco Mark.
(<https://www.env.go.jp/policy/hozen/green/ecolabel/guideline/>)
- * The Guide to Eco Mark Usage shall be followed for any cases not listed above.
(<https://www.ecomark.jp/office/guideline/guide/>)

March 20, 2018	Established (Version 1.0)
April 1, 2019	Revised (Eco Mark Usage)
March 15, 2023	Extension of Expiration date
March 31, 2030	Expiration

Certification Criteria of this Product Category shall be revised as needed.

Appendix 1 Product Design Checklist (1/3)

Applicable Scope

The requirements apply to certain sub-assemblies of basic unit of equipment and consumables

Assembly	Unit composed of at least two components linked by power or design.
Chassis	Parts with functions serving as a frame to support the main parts of machines
Recycled plastic	Plastic composed of post-consumer material and pre-consumer material
Pre-consumer material	Material or rejected product generated from a disposal route in a product manufacturing process, excluding those that are generated in a material manufacturing process and that are reused as raw materials within the same process (plant).
Post-consumer material	Materials or products disposed of after they have been used as goods.
Recycled plastic part	Plastic part which contains recycled plastics
Reused plastic part	Plastic part that has been used in the past and are reused
Casing part	Part which protects the machine from environmental effects and user from getting into contact with moving, radiating, or current-carrying components.
Electrical/ electronic assembly	Assembly which includes at least one electric or electronic component.
Polymer alloy (Polymer blend)	General name of multi component polymers obtained by the chemical binding of the polymers of more than two components. Polymer blend is the physical blending of different types of polymers.

Category classification

Any requirements are classified as either “Mandatory requirement” or “Optional requirement”.

Mandatory requirement	Requirements which must be met
Optional requirement	Requirements which should be met

Reference specification

ECMA341(Environmental Design Considerations for ICT&CE Products) 4th edition
December 2010, European Computer Manufacturer Association

Appendix 1 Product Design Checklist (2/3)

Mandatory requirement (items which must be met)

group	No	Requirement	Applicable scope	Compliance?	Remarks	Purpose						
Structure and Connection Technology	1	Components made of materials incompatible with each other are connected separably or via separation aids.	Casing parts, chassis, Electrical/ electronic assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No	Compatibility of materials can be checked with reference to Appendix C of ECMA 341 "Polymers Compatibility Guide", etc.	Promoting reuse and recycling						
	2	Electrical/ electronic assembly and electrical/ electronic parts are easily traceable and removal. Can parts replacement of which is substantially needed in maintenance/repair be easily removed?	Entire unit, including lamps	<input type="checkbox"/> Yes <input type="checkbox"/> No		Facilitating parts search						
	3	Disassembly for recycling can be done with universal tools exclusively	Housing, chassis, Electrical/ electronic assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No	"Universal tools" refers to widely used, commercially available tools. This requirement does not apply to connections where legal regulations have influenced the choice of joining technique.	Facilitating disconnection						
		Necessary points of application and working space for disassembly tools have been taken into consideration?	Casing parts, chassis, Electrical/ electronic assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No		Facilitating disconnection						
	4	Screwed connections to secure assemblies can be separated with no more than 4 tools.	Casing parts, chassis, Electrical/ electronic assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No	Tools can be distinguished by drive type (e.g., Phillips screw driver, flathead screw driver) and drive size (e.g., tool size)	Facilitating disconnection						
	5	Can the disassembly be performed by one person?	Entire unit	<input type="checkbox"/> Yes <input type="checkbox"/> No		Facilitating disassembly/ dismantling						
	6	The manufacturer did a trial disassembly according to 1-5 above.	Entire unit	<input type="checkbox"/> Yes <input type="checkbox"/> No								
Material Selection and Marking	7	Materials of plastic housing components with similar functions are limited to one material. This requirement shall not apply to parts that have been proved as reused parts or parts which require special functions "heat resistance", "impact resistance" and "abrasion resistance".	Casing parts weighing over 25g	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No applicable part used	For instance, "functions" refer to "heat resistance", "impact resistance" and "abrasion resistance". Polymer blend (polymer alloy) may be used.	Promoting reuse and recycling						
	8	Plastic parts weighing over 25g and larger than 200mm ² are marked in accordance with ISO11469 in consideration of ISO1043.	Entire unit (excluding plastic parts in reused composite assembly)	<input type="checkbox"/> Yes <input type="checkbox"/> No	The material identification of plastics shall enable all recycling companies to sort plastics by type.	Promoting reuse and recycling						
Resource Saving	9	Is the product designed giving consideration to weight reduction/volume reduction?	Entire unit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No product having equivalent functionality	Comparison with the equipment used in conventional machines. <table border="1" style="margin-left: 20px;"> <tr> <td>Name of conventional machine</td> <td></td> </tr> <tr> <td>Rate of weight reduction</td> <td></td> </tr> <tr> <td>Rate of volume reduction</td> <td></td> </tr> </table> Either the rate of weight reduction or rate of volume reduction may serve the purpose.	Name of conventional machine		Rate of weight reduction		Rate of volume reduction		Promoting resource saving
Name of conventional machine												
Rate of weight reduction												
Rate of volume reduction												

Appendix 1 Product Design Checklist (3/3)

Optional requirement (items which should be met)

group	No	Requirement	Applicable scope	Compliance?	Remarks	Purpose
Structure and Connection Technology	1	Separable connections are easily traceable.	Casing parts, chassis	<input type="checkbox"/> Yes <input type="checkbox"/> No		Facilitating parts search
	2	For products weighing over 10kg, the supporting surface can be maintained during the entire disassembly work.	Unit to be handled	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not covered	When the supporting surface can be maintained during the disassembly work without turning over the product, disassembly / dismantling will be facilitated.	Facilitating disassembly/ dismantling
Material Selection and Marking	3	Parts made of the same sort of plastics are dyed uniformly or compatibly. Integrated control elements shall be exempt from this requirement.	Casing parts	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No applicable part used	"Compatible dyeing" stands for different shades of one colour.	Promoting reuse and recycling
	4	Metallic painting which may require treatment for removal (metal plating and conductive coating) is avoided for the plastic parts. Direct printing on plastic parts is limited to the minimum required level (example: manufacturer's name).	Casing parts weighing over 25g	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No applicable part used	Large-area coating layer on the surface of plastic parts require treatment for removal. Laser markings are not considered as "prints" referred to herein. This item does not apply to the coating using the same materials with the plastic parts.	Promoting reuse and recycling
	5	Reused plastic part, recycled plastic part or plant-based plastic part with which the environmental load reduction effect is confirmed is used. (If yes,) <input type="checkbox"/> reused plastic part <input type="checkbox"/> recycled plastic part <input type="checkbox"/> plant-based plastic	Entire unit	<input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, fill in the left column) (If yes,) <input type="checkbox"/> reused plastic part <input type="checkbox"/> recycled plastic part <input type="checkbox"/> plant-based plastic	At least one such part shall be used. The ratio of combination does not matter.	Promoting reuse and recycling

Appendix 2 “Packaging material checklist”

■List of packaging material used for the product.

Indicate a name, mass, ratio of recycled materials in use of packaging materials that are used per product.

No.	Packaging material used for the product	mass[g]	Ratio of recycled material in product
1			%
2			%
3			%
Total			

Entry examples of the packaging materials in use: cardboard, polyethylene, foamed polystyrene, pulp mold.

■Packaging material checklist (Optional item: items which should be met)

It is determined that the product complies with the criteria when it meets all of the mandatory requirements:

No.	Requirement	Compliance	Remarks						
1	Is the product designed giving consideration to weight reduction/volume reduction?	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> No product having equivalent functionality	Comparison with packaging material used in conventional machines. <table border="1" style="width: 100%;"> <tr> <td>Name of conventional machine</td> <td></td> </tr> <tr> <td>Rate of weight reduction</td> <td></td> </tr> <tr> <td>Rate of volume reduction</td> <td></td> </tr> </table> Either the rate of weight reduction or rate of volume reduction may serve the purpose.	Name of conventional machine		Rate of weight reduction		Rate of volume reduction	
Name of conventional machine									
Rate of weight reduction									
Rate of volume reduction									
2	Is the product designed giving consideration to use of recycled materials? (Waste paper, recycled plastic, etc.)	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	“Consideration” shall mean examination of the possibility of use of recycled materials at the stage of selection of materials for packaging or the designing.						
3	Is the recycled waste paper used 70% or more, or the recycled plastic used 40% or more?	[Optional] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	If any recycled material is used, indicate it in the above list.						
4	Is the product designed giving consideration so that the amount of ink to be used in printing on a surface of packaging materials is reduced?	[Optional] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	It is desirable to share materials by products of a same company or standardize packaging materials used for a same product.						
5	Is the product such designed that sharing of materials is promoted?	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	It is desirable to share materials by products of a same company or standardize packaging materials used for a same product.						
6	Is the product designed giving consideration to selection of a material that is easy to recycle or reuse?	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	It is desirable to select a material that consumers can easily send to recycling, etc.						
7	If dissimilar materials are used in combination, is the product such designed that separation of parts is easy?	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No <input type="checkbox"/> No combined use of dissimilar materials	Dissimilar materials herein stated refer to metals and plastics, paper and plastics, etc., and do not mean a difference by a type of plastic.						
8	Whether materials are indicated according to the regulations or JIS standard, etc., so that the product can be easily recycled or reused.	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	It is necessary to provide an appropriate indication so that consumers can send the product to recycling, etc. In Japan, the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging is in effect, according to which the Report of the Committee for Considering Identification of Container and Packaging, etc. provides for the identification marks and method of displaying materials. As to products supplied to corporations, too, display of material shall be indispensable; however, indication of						

			materials may be omitted based on such provisions concerning the identification marks as “For the case of solid-color container and packaging” and “For the container and packaging on which the display cannot be attached.”
9	Are materials to be used in packaging selected so that use of any chemical substances which affect the environment is avoided or reduced? (Non-use of polymers containing halogens, HCFC, etc. (Appendix 3))	[Mandatory] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	If any chemical substance that affects the environment is used, it will be a problem when the product is recycled or disposed of.
10	Is there a system for collection and reuse or recycling of packaging materials?	[Optional] <input type="checkbox"/> Yes/ <input type="checkbox"/> No	As stated in the considerations of Act for Promoting Green Purchasing, it is desirable that the product has a collection/recycling system. For usage for individual use, compliance to the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging shall be regarded as the satisfaction of this item.

Appendix 3 HCFC Specified in “Packaging material checklist” No.9

Name of substance	Name of substance
Dichlorofluoromethane (HCFC-21)	Trichlorotetrafluoropropane (HCFC-224)
Chlorodifluoromethane(HCFC-22)	Dichloropentafluoropropane (HCFC-225)
Chlorofluoromethane (HCFC-31)	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
Tetrachlorofluoroethane (HCFC-121)	1,3- Dichloro -1,1,2,2,3-pentafluoropropane (HCFC-225cb)
Trichlorodifluoroethane (HCFC-122)	Chlorohexafluoropropane (HCFC-226)
Dichlorotrifluoroethane (HCFC-123)	Pentachlorofluoropropane (HCFC-231)
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	Tetrachlorodifluoropropane (HCFC-232)
Chlorotetrafluoroethane (HCFC-124)	Trichlorotrifluoropropane (HCFC-233)
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	Dichlorotetrafluoropropane (HCFC-234)
Trichlorofluoroethane (HCFC-131)	Chloropentafluoropropane (HCFC-235)
Dichlorodifluoromethane (HCFC-132)	Tetrachlorofluoropropane (HCFC-241)
Chlorotrifluoroethane (HCFC-133)	Trichlorodifluoropropane (HCFC-242)
Dichlorofluoroethane (HCFC-141)	Dichlorotrifluoropropane (HCFC-243)
1-Dichloro-1-Fluoroethane (HCFC-141b)	Chlorotetrafluoropropane (HCFC-244)
Chlorodifluoroethane (HCFC-142)	Trichlorofluoropropane (HCFC-251)
1-Chloro-1,1-difluoroethane (HCFC-142b)	Dichlorodifluoropropane (HCFC-252)
Chlorofluoroethane (HCFC-151)	Chlorotrifluoropropane (HCFC-253)
Hexachlorofluoropropane (HCFC-221)	Dichlorofluoropropane (HCFC-261)
Pentachlorodifluoropropane (HCFC-222)	Chlorodifluoropropane (HCFC-262)
Tetrachlorotrifluoropropane (HCFC-223)	Chlorofluoropropane (HCFC-271)

Source: Group I, Annex C of Montreal Protocol