

REFRIGERATOR AND FREEZER

PRODUCT GROUP CLASSIFICATION: UN CPC 44811

C-PCR-XXX (TO PCR 2024:06)

VERSION: X.Y.Z *(TO BE ADDED BY THE SECRETARIAT)*

VALID UNTIL 20XX-YY-ZZ *(TO BE ADDED BY THE SECRETARIAT)*

DRAFT FOR OPEN
CONSULTATION

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INTRODUCTION TO OPEN CONSULTATION

This draft PCR document is available for open consultation during the period stated on www.environdec.com. Feel free to forward the draft to any other stakeholder you might think is relevant, including colleagues and other organisations.

We are interested in comments from stakeholders on:

- General
 - Alignment with PCRs available in other programmes for type III environmental declarations, industry-specific LCA guidelines or similar.
- Scope of PCR
 - Product category definition and description
 - Classification of product category using CPC codes
- Goal and scope, life cycle inventory and life cycle impact assessment
 - Functional unit/declared unit
 - System boundary
 - Allocation rules
 - Data quality requirements
 - Recommended databases for generic data
 - Impact categories and impact assessment methodology
- Additional information

Comments shall be sent directly to the PCR Moderator (contact details available in Section 1). There is a template for comments on www.environdec.com that may be used.

For questions about the PCR, please contact the PCR moderator. For general questions about the International EPD System, EPD or PCR development, please contact the Secretariat via <https://www.environdec.com/support>.

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1 INTRODUCTION

1.1 GENERAL

This document constitutes complementary Product Category Rules (c-PCR) developed in the framework of the International EPD System: a programme for type III environmental declarations¹ according to ISO 14025:2006, ISO 14040:2006, ISO 14044:2006, and product-specific standards such as EN 50693 and IEC 63666. Environmental Product Declarations (EPD) are voluntary documents for a company or organisation to present transparent, consistent and verifiable information about environmental performance of their product (goods or services).

The rules for the overall administration and operation of the programme are the General Programme Instructions (GPI), publicly available on www.environdec.com. PCRs and c-PCRs complement the GPI and the normative standards by providing specific rules and guidelines for developing an EPD for one or more specific product categories (see Figure 1). A PCR/c-PCR should enable different practitioners using the PCR/c-PCR to generate consistent results when assessing products of the same product category.

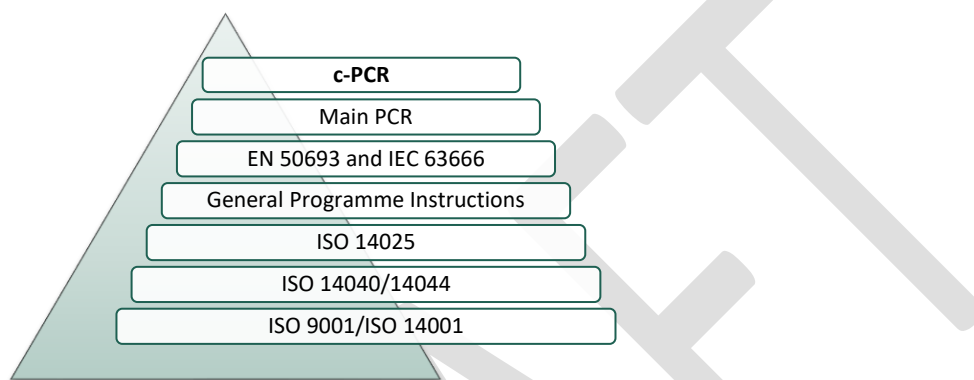


Figure 1 This c-PCR in relation to the hierarchy of standards and other documents.

The present c-PCR uses the following terminology:

- The term “shall” is used to indicate what is obligatory, i.e., a requirement.
- The term “should” is used to indicate a recommendation. Any deviation from a recommendation shall be justified in the EPD development process.
- The terms “may” or “can” are used to indicate an option that is permissible.

For definitions of further terms used in the document, see the GPI, the main PCR, and the normative standards.

A main PCR and its c-PCRs are valid for a pre-determined period of time to ensure that it is updated at regular intervals. The latest version of the PCR and its c-PCRs are available on www.environdec.com. Stakeholder feedback on PCRs and c-PCRs is very much encouraged. Any comments on this c-PCR may be sent directly to the PCR Moderator and/or the Secretariat during its development or during its period of validity.

Any references to this document shall include the PCR registration number, name and version.

The programme operator maintains the copyright of the PCR to ensure that it is possible to publish, update, and make it available to all organisations to develop and register EPDs. Stakeholders participating in PCR development should be acknowledged in the final document and on the website.

1.2 ROLE OF THIS DOCUMENT

This c-PCR complements the main PCR 2024:06 Electronic and electric equipment, and electronic components (non- construction), available on www.environdec.com. The c-PCR cannot be used by itself but shall be used together with PCR 2024:06, for products within the scope of the PCR (see Section 2.2.1). It is required to use an applicable c-PCR after it has been published 90 days. It is optional to use the c-PCR if it has been published for less than 90 days.

If more than one c-PCR is applicable, the EPD owner may choose to use any of them, but it is recommended to use the one that is more specific in scope in terms of product function. An alternative is to use, and verify the EPD towards, several applicable c-PCRs, as long as there are no conflicting requirements in the c-PCRs.

If requirements in the main PCR and the c-PCR are in conflict, the requirements in the c-PCR take precedence over those in the main PCR.

¹ Type III environmental declarations in the International EPD System are referred to as EPDs, Environmental Product Declarations.

See Figure 2 for an illustration on how PCR 2024:06 and this c-PCR relate to each other and the EPDs that may be based on them.

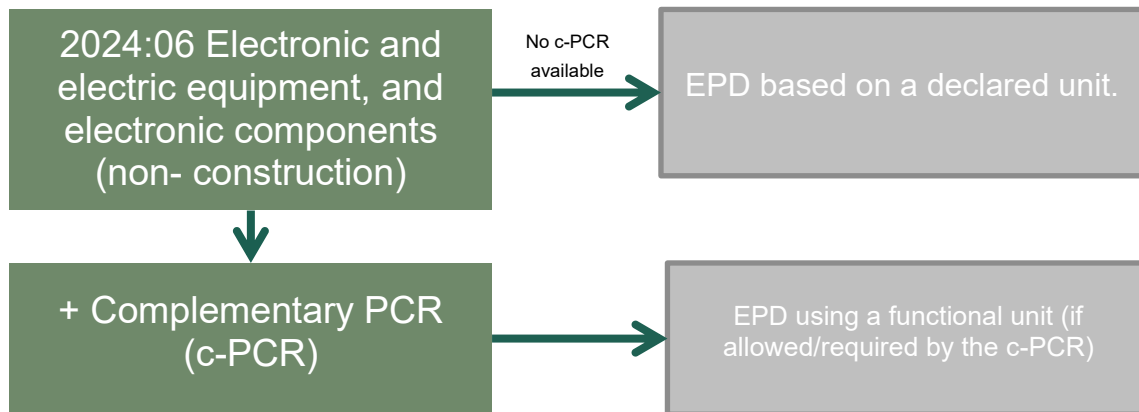


Figure 2 Overview of how PCR 2024:06 can be used directly, or together with a c-PCR, to develop an EPD. An EPD that uses a functional unit shall be based on a c-PCR. An EPD based on a declared unit can be developed without a c-PCR.

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2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Refrigerator and freezer parts thereof
Registration number and version:	<i>To be added by the Secretariat</i>
Programme:	 INTERNATIONAL EPD SYSTEM
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: support@environdec.com
PCR Moderator:	Xin He, Jiangsu Vnuo Certification and Testing Co., Ltd., hex_cvin@163.com
PCR Committee:	Jiangsu Vnuo Certification and Testing Co., Ltd., Hefei Midea Refrigerator Co., Ltd., China Association For Standardization, Foshan Green Development Innovation Research Institute, IVL Swedish Environmental Research Institute Ltd
Publication date	<i>To be added by the Secretariat</i> See Section 8 for a version history of the c-PCR.
Valid until:	<i>To be added by the Secretariat</i> The validity may change. See www.environdec.com for the latest version of the PCR and the latest information on its validity and transition periods between versions.
Development and updates:	The c-PCR has been developed following ISO 14027, including public consultation and review. The rules for the development and updating processes are described in Section 9 of the GPI. The c-PCR is valid for a pre-determined time period to ensure that it is updated at regular intervals. When the c-PCR is about to expire, the PCR Moderator shall initiate a discussion with the Secretariat on if and how to proceed with updating the c-PCR and renewing its validity. A c-PCR may be updated before it expires, based on changes in normative standards or provided significant and well-justified proposals for changes or amendments are presented. When there has been an update of the c-PCR, the new version should be used to develop EPDs. For small updates (change of third-digit version number), the previous version is normally immediately removed from the PCR library on www.environdec.com and there is no transition period. For medium updates (change of second-digit version number), the previous version of the c-PCR is valid in parallel during a transition period of at least 90 days, but not exceeding its previously set validity period. For large updates (change of first-digit version number), the previous version is valid in parallel during a transition period of at least 180 days, but not exceeding its previously set validity period. In case a c-PCR is developed by a CEN Product TC, the standard will replace this c-PCR, with a transition period of at least 90 days under which both are valid. Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR may be sent directly to the PCR Moderator and/or the Secretariat during its development or during its period of validity.

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Standards documents and conformance:	General Programme Instructions of the International EPD System, version 5.0 based on ISO 14025 and ISO 14040/14044. ² EN 50693 IEC 63366 If PCR 2024:06 refers to a later version of any of the above standards, the later version applies.
	At the time of publication, this c-PCR was available in English. If the c-PCR is available in several languages, these are available on www.environdec.com . In case of translated versions, the English version takes precedence in case of any discrepancies.

2.2 SCOPE

2.2.1 PRODUCT CATEGORY DEFINITION AND DESCRIPTION

This document provides complementary product category rules (c-PCR) for the assessment of the environmental performance of refrigerator and freezer and the declaration of this performance by an EPD. The product category corresponds to UN CPC 44811 Refrigerators and freezers, household type, electric or non-electric. The product category encompasses household refrigerators and freezers designed for low-temperature storage. These appliances may also incorporate additional convenience features such as humidity control, ice-making, and smart technology.

The UN CPC classification hierarchy is:

- Section 4 - Metal products, machinery and equipment
 - Division 44 - Special-purpose machinery
 - o Group 448 - Domestic appliances and parts thereof
 - Class 4481 - Domestic electric appliances; non-electric refrigerators and clothes drying machines
 - ▣ Subclass 44811 - Refrigerators and freezers, household type, electric or non-electric

This subclass is defined through the following headings/subheadings of the HS 2022 (WCO Harmonized System Nomenclature):

- 8418.10: Refrigerators and freezers, combined refrigerator-freezers, fitted with separate external doors, electric or other
- 841821: Refrigerators; for household use, compression-type, electric or other
- 841822: Refrigerators, household absorption type, electric
- 841829: Refrigerators, household, electric or not, other than compression-type
- 841830: Freezers; of the chest type, not exceeding 800 l capacity
- 841840: Freezers; of the upright type, not exceeding 900l capacity

2.2.2 GEOGRAPHICAL SCOPE

This c-PCR may be used globally.

2.2.3 EPD VALIDITY

See PCR 2024:06.

² Some rules influencing EPD development are independent of the GPI version referred to in the PCR. For example, the latest rules on EPD verification procedures in the GPI shall be followed within 90 days of its publication. See Section 5.1 in the GPI for a description of the four categories of rules and when they shall be followed.

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3 PCR REVIEW AND BACKGROUND INFORMATION

This c-PCR was developed in accordance with the PCR development process described in the GPI of the International EPD® System, including open consultation and review.

3.1 OPEN CONSULTATION

3.1.1 VERSION 1.0.0, 2026-XX-XX

This c-PCR was available for open consultation from 2026-XX-XX until 2026-XX-XX, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

Stakeholders were invited via e-mail or other means to take part in the open consultation and were encouraged to forward the invitation to other relevant stakeholders.

3.2 PCR REVIEW

3.2.1 VERSION 1.0.0, 20YY-MM-DD

PCR review panel:	The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com . Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review.
Chair of the PCR review:	<i>To be added by the Secretariat</i>
Review dates:	<i>To be added by the Secretariat</i>

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

As part of the development of this c-PCR, existing PCRs/c-PCRs and other internationally standardised methods that could potentially act as c-PCRs were considered to avoid unnecessary overlaps in scope and to ensure harmonisation with established methods of relevance for the product category. The existence of such documents was checked among the following EPD programmes and international standardisation bodies:

- International EPD System. www.environdec.com.
- PEP ecopassport®: www.pep-ecopassport.org
- JEMAI EcoLeaf: www.ecoleaf-jemai.jp
- EPD Italy: www.epditaly.it/en/
- EPD Global: <https://www.epd-norge.no/>

Table 1 lists the identified PCRs and other standardised methods.

Table 1 Existing PCRs/c-PCRs and other internationally standardised methods that were considered to avoid overlap in scope and to ensure harmonisation with established methods.

Name of PCR/standard, incl. registration number	Programme/standardisation body	Version number/date of publication	Scope
Electronic and electric equipment, and electronic components (non-construction)	International EPD System	PCR 2024:06, version 1.0.1	CPC 43-48 and 84, and HS code 85 Electrical machinery and equipment and parts thereof
Electrical and Electronic Products and Parts	JEMAI EcoLeaf	PA-SuMPO-PCR-02000-1-0-1 2025-11-20	CPC43 General-purpose machinery

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			CPC44 Special-purpose machinery CPC45 Office, accounting and computing machinery CPC46 Electrical machinery and apparatus CPC47 Radio, television and communication equipment and apparatus CPC48 Medical appliances, precision and optical instruments, watches and clocks CPC84 Telecommunications, broadcasting and information supply services
Product Category Rules for Electrical, Electronic and HVAC-R Products	PEP ecopassport®	PCR-ed4-EN-2021 09 06	Electrical, Electronic and Heating Ventilation Air Conditioning-Refrigeration (HVAC-R) products

3.4 REASONING FOR DEVELOPMENT OF C-PCR

This c-PCR was developed to provide rules and guidance additional to those in PCR 2024:06, for developing EPDs for the product category. The c-PCR thereby enables different practitioners to generate consistent results when assessing the environmental impact of products of the same product category, and thereby it supports comparability of products within a product category.

3.5 UNDERLYING STUDIES USED FOR C-PCR DEVELOPMENT

The methodological choices made during the development of this c-PCR (declared/functional unit, system boundary, allocation methods, impact categories, data quality rules, etc.) were primarily based on the following underlying studies:

- Andersen O, Hille J, Gilpin G, Andrae ASG (2014) Life Cycle Assessment of Electronics. Proceedings of 2014 IEEE Conference of technologies for Sustainability, 24-26 July 2014, Portland, OR, USA, DOI: 10.1109/SusTech.2014.7046212.
- Bovea MD, Ibáñez-ForésV, Pérez-Belis V (2020) Repair vs. replacement: Selection of the best end-of-life scenario for small household electric and electronic equipment based on life cycle assessment. Journal of Environmental Management, Volume 254, 2020, 109679, ISSN 0301-4797, DOI: 10.1016/j.jenvman.2019.109679
- Reale F, CastellaniV, Hischier R, Corrado S, Sala S (2019) Consumer Footprint - Basket of Products indicator on Household appliances, EUR 29758 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76- 05003-2, DOI:10.2760/964701, JRC116704,
- Shaukat MM, Masood H, Merah N, Al-Badour FA, Qadeer A, Afzal S (2021) Comparative Life Cycle Assessment of Two Different Models of a Home Appliance, International Journal of Sustainable Engineering, 14:6, 1658-1664, DOI:10.1080/19397038.2021.1945162.
- Anna Lewandowska, Przemysław Kurczewski, et al[2021]Environmental Life Cycle Assessment of Refrigerator Modelled with Application of Various Electricity Mixes and Technologies, eneygies, 2021, 14(17)5350.

4 LCA METHOD

This section provides specific rules, requirements and guidelines for developing an EPD for the product category as defined in Section 2.2.1.

4.1 MODELLING APPROACH

See PCR 2024:06.

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4.2 FUNCTIONAL UNIT

The functional unit for the refrigerator-freezer shall be defined as 1 refrigerator-freezer that provides at least 1 refrigeration compartment (4°C) and at least 1 freezing compartment (-18°C), each of a specified volume, and is used daily for food storage over a 10-year period. The functional unit for the refrigerator shall be defined as 1 refrigerator that provides at least 1 refrigeration compartment, each of a specified volume, and is used daily for fresh food storage over a 10-year period. The functional unit for the freezer shall be defined as 1 freezer that provides at least 1 freezing compartment (-18°C), each of a specified volume, and is used daily for frozen food storage over a 10-year period.

For example, 1 refrigerator that provides 230 L of cooling space (4 °C) and 110 L of refrigeration space (-18 °C) for food storage for 10 years of refrigerator use.

The functional unit shall be stated in the EPD. The environmental impact shall be given per functional unit.

4.2.1 REFERENCE SERVICE LIFE (RSL)

See PCR 2024:06.

The reference service life for refrigerator and freezer shall be 10 years.

4.2.2 PRODUCT LIFESPAN

See PCR 2024:06.

The product lifespan for refrigerator and freezer shall be 10 years. If other lifespans are chosen, it must be clearly indicated and provide the enough proof documentation.

4.2.3 TECHNICAL SPECIFICATION

A description of the function of the product should be included in the EPD, which includes product type, total volume, adjustable volume, type and volume of each chamber, dimensions (width x height x depth), name and quality of refrigerant, product weight and total weight including packaging, and additional product functions (such as antibacterial, ice-making, etc.). The volume calculation uses the standards IEC 62552-3 for the reference formula and tests.

4.3 SYSTEM BOUNDARIES

See PCR 2024:06.

EPDs that are developed based on this c-PCR shall cover cradle-to-grave.

The following subsections describe the covered information modules, respective processes, and other rules on the setting of system boundary.

4.3.1 MANUFACTURING STAGE: MODULES A1-A3

Material and components supply

- Production of all main parts and components.
- Extraction and processing of raw materials for the packaging.
- Collection and processing of used components, parts and materials, if applicable.
- Production of electricity and fuels used in the production of materials and components.
- Transport of raw materials and components along the supply chain to a distribution point (e.g., a stockroom or warehouse), including energy inputs for warehouse storage for the raw materials/components corresponding to at least 75% of the mass of the product.

Transport

- Transport of materials and components to the manufacturing site.
- End-of-life treatment of transport waste. Transporting waste mainly refers to packaging materials.
- Generation of electricity and production of fuels, steam and other energy carriers used in the transport processes.

Manufacturing

- Internal transports within the manufacturing site.

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- Assembly of the final product and testing.
- Storage of finished products.
- Production of consumer packaging.
- End-of-life management of waste generated during manufacturing.
- Maintenance and consumables of manufacturing equipment
- Production of electricity and fuels used in the manufacturing processes.

The waste generated in manufacturing processes comprises scrap materials (e.g., waste metal, plastic, mineral oil), pollutants (e.g., VOCs, non-methane hydrocarbons, wastewater), and refrigerants.

The following processes shall not be included:

- Manufacturing of production equipment, buildings, and other capital goods
- The basic lighting, heating, sanitation, cleaning facilities and other service facilities of the factory
- Employees' transportation and meals
- Department activities of administrative, management, research and development, experimental and marketing

4.3.2 DISTRIBUTION AND INSTALLATION STAGE: MODULES A4-A5

Distribution

- Transportation of the packaged product from the manufacturer's warehousing platform to the final user.

Installation stage

- End-of-life management of waste generated at the installation place, including packaging, and other waste associated with the installation processes. This includes collection, transport, and treatment.

4.3.3 USE STAGE: MODULES B1-B7

- Operation of the product during reference service life, mainly including energy consumption.

4.3.4 END-OF-LIFE (EOL) STAGE: MODULES C1-C4

- Transportation of the product to end-of-life treatment facility.
- Cleaning, separation and dismantling of the product.
- Disposal of material and components. (such as landfill, incineration, etc.)

4.4 CUT-OFF RULES

See PCR 2024:06.

Printed circuit boards (PCB) assembly, electronic displays (including LED, LCD, OLED), and refrigerants shall not be excluded, environmental impact assessment shall be conducted for these items. Any application of the cut-off rules, including LCI data excluded based on cut-offs, shall be described in the EPD.

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4.5 PROCESS FLOW DIAGRAM

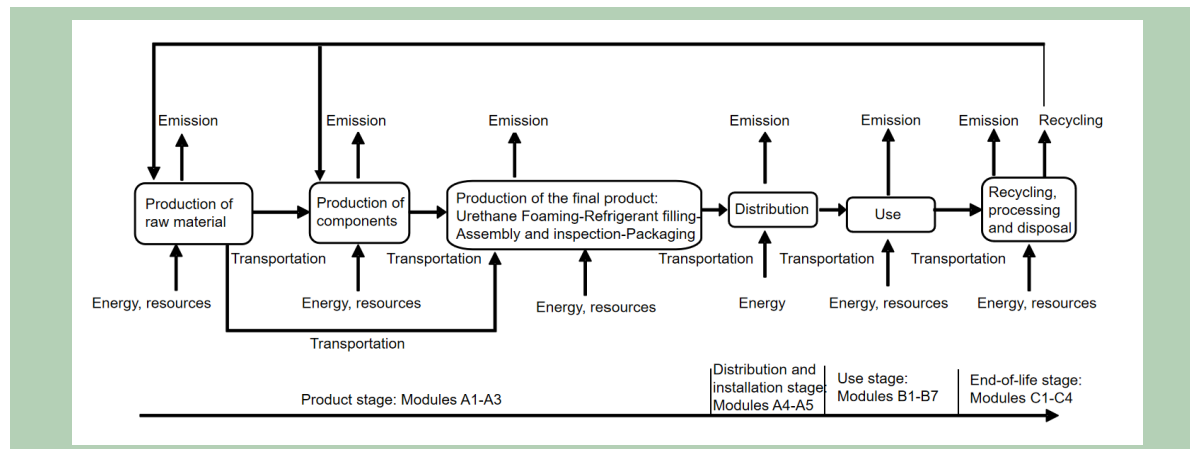


Figure 3 Process flow diagram illustrating the processes that shall be included in the product system, divided into the life-cycle stages.

4.6 ALLOCATION RULES

See PCR 2024:06.

4.7 DATA CATEGORIES AND DATA QUALITY RULES

See PCR 2024:06.

When the organization/entity conducting the product life cycle assessment study has financial or operational control, specific data should be collected. Furthermore, the process data collected should be representative. For processes contributing at least 80% to the product's environmental impact, specific data should be used even if they are not under financial or operational control. When specific data is unavailable, it is advisable to use generic data.

Any data used should preferably represent average values for a specific reference year. However, the way these data are generated could vary, e.g. over time, and in such cases they should have the form of a representative annual average value for a specified reference period. Such deviations should be declared.

4.8 OTHER LCA RULES

See PCR 2024:06.

4.9 SPECIFIC RULES PER LIFE-CYCLE STAGE

4.9.1 MANUFACTURING STAGE, A1-A3

- Data referring to processes and activities in a supply chain over which the EPD owner has direct management control shall be specific and collected on site.
- The Material and components supply stage shall include the assembly of main outer cabinet, door body, compressor, condenser, evaporator, internal components, polyurethane thermal insulation material, refrigerant, and printed circuit board (PCB) assemblies, as well as the raw material extraction and processing of basic packaging materials and shipping packaging materials. For printed circuit board (PCB) assemblies, it is necessary to collect the usage data of PCBs, resistors, diodes, capacitors, transistors, and solder, as well as obtain the upstream data of each component. Data referring to contractors that supply main parts, packaging, or main auxiliaries should be requested from the contractor as specific data, when available.
- Data on transport of main parts and components along the supply chain to a distribution point (e.g., a stockroom or warehouse) where the final delivery to the manufacturer can take place, should be specific and based on the actual transportation mode, distance from the supplier, type of fuel (e.g., gasoline, diesel, etc.) and vehicle load.

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- The Manufacturing process must include the foaming, refrigerant filling, assembly and inspection, and packaging processes as outlined in Figure 4. During the foaming process in the product manufacturing stage, although substances such as carbon dioxide and cyclopentane may leak, the leakage volume is extremely small and has negligible impact on the environment, there is no need to collect data on the desulfurization volume. In the refrigerant filling process during product manufacturing, although there is a small amount of refrigerant leakage, due to the extremely small leakage volume and negligible environmental impact, there is no need to collect data on the leakage volume.

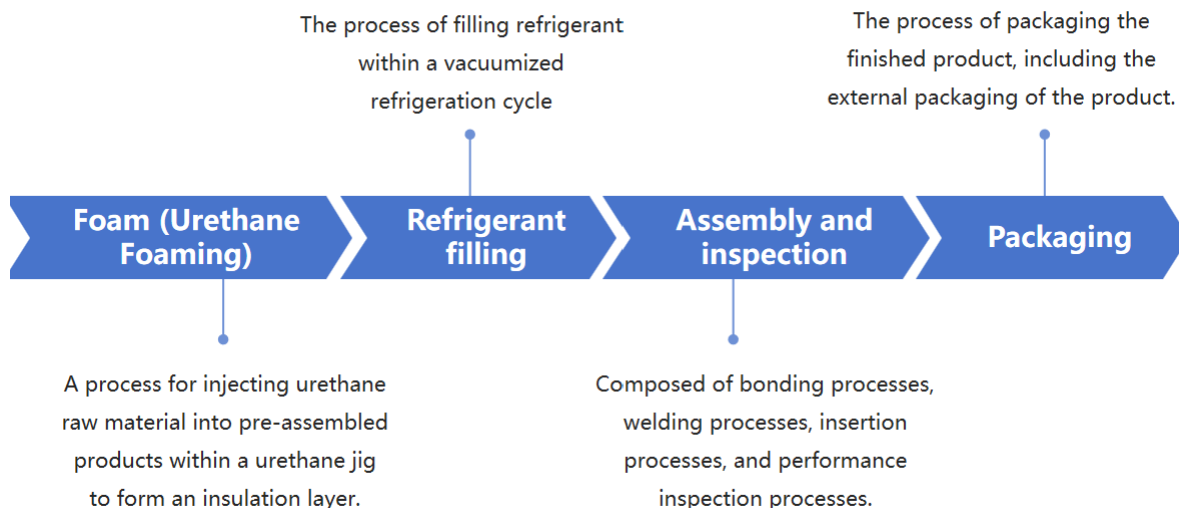


Figure 4 Manufacturing Process of Refrigerators and Freezers

- For electricity used in the production processes, generation of electricity used shall be accounted for in this priority:
 - The on-site generated electricity (if the electricity is supplied to the plant from a production asset within the premises of the energyconsuming plant and if the production asset is connected to the energy-using plant by means of a direct and dedicated connection). If contractual instruments of any type, related to the on-site generated electricity, have been sold to a third party, then the on-site generated electricity cannot be claimed in the EPD. No credit shall be modelled if the amount of electricity produced exceeds the amount consumed on-site within the defined system boundary and it is sold to, e.g., the electricity grid. The processes that model the electricity production per energy type and country/region (e.g., production of 1 MWh solar energy in the corresponding country/region) shall be modelled as a “non-most relevant processes”, where datasets describing medium-voltage may be used for low-voltage, neglecting the conversion losses.
 - Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a Guarantee of Origin or similar as provided by the electricity supplier.
 - Residual electricity mix on the market.
 - Electricity consumption mix on the market. This option shall not be used for electricity used in processes over which the manufacturer (EPD owner) has direct control, as long as the composition of the residual grid mix has been publicly disclosed. the average consumption mix shall be modelled with a secondary dataset. If the node dedicated to the EPD in the LCDN includes a dataset modelling the average consumption mix in the country, or in the region (EU) of interest, that dataset shall be used giving priority first to the country, and then to the region.
 - If the consumed electricity comes from more than one electricity source (e.g., on-site electricity generation, supplier-specific electricity, or unspecified electricity purchased from the grid), each mix source shall be used in terms of its proportion to the total kWh of electricity consumed. For example, if a fraction of the total kWh consumed comes from a specific supplier, a supplier-specific electricity product shall be used for this amount.
- In case specific data is lacking, selected generic data may be used. If this is also lacking, proxy data may be used.
- Packaging: specific data shall be used for the consumer packaging production if it is under the direct control of the organization or if the environmental impact related to the consumer packaging production is more than 10% of all product environmental indicators’

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results. In other cases, generic data may be used. When consumer packaging shows the organization's logo, the LCA report should report the exerted/non-exerted direct control on the production of consumer packaging by the organization.

- Transport from the final delivery point of raw materials, chemicals, main parts, and components to the manufacturing plant/place of service provision should be based on the actual transportation mode, distance from the supplier, fuel and vehicle load, if available.
- Waste treatment processes of manufacturing waste should be based on specific data, if available. (For example, the quantity and disposal methods of waste materials such as scrap metal, waste plastics, waste mineral oil, as well as pollutants such as volatile organic compounds (VOCs), non-methane total hydrocarbons, wastewater, and refrigerants.)
- The transport of the product to the customer shall be described in the EPD, where relevant, and be accounted for in this priority:
 - Actual transportation modes and distances to specific a customer or market, representing the geographical scope of the EPD. Use of specific data is of particular importance if air freight is used.
 - A weighted average of transportation modes and distances, based on transportation to several customers or markets, representing the geographical scope of the EPD.

4.9.2 DISTRIBUTION AND INSTALLATION STAGE: MODULES A4-A5

The data collected during the distribution stage include:

- Transportation-related data: Distribution volume (the total amount of products transported to the destination within the target product data collection timeframe), sales regions/sales locations and transportation proportions (the percentage of transportation volume corresponding to each transportation mode), transportation modes and means (including energy type, load capacity, emission standards, etc.), and transportation distance. Whenever feasible, data on energy consumption should also be collected.
- Data related to activities during warehousing and sales processes, such as energy consumption in typical warehouses and sales stores.

4.9.3 USE STAGE, MODULES B1-B7

- The total energy consumption along lifetime shall be calculated by the following formula:

The electricity consumption of general refrigerator:

$$E_{\text{Total}} = E_t \times \text{RSL} \dots \dots \dots (1)$$

where,

E_{Total} —Electricity consumption of refrigerator products during the lifetime, measured in kWh ;

E_t —Total annual electricity consumption of refrigerator products, measured in kWh/y ;

RSL—The reference service life of refrigerator products, measured in year. This standard stipulates that the reference service life of refrigerator products is 10 years.

- The refrigerant does not leak during the usage stage, and is fully processed at the end of life stage.

4.9.4 END-OF-LIFE STAGE, MODULES C1-C4

Scenarios for the end-of-life stage shall be technically and economically practicable. The end-of-life scenario shall be compliant with current regulations in the relevant geographical region based on the geographical scope of the EPD, meaning that it shall not contradict the minimum collection rates, recycling rates or landfilling prohibitions (when applicable) imposed on the relevant actors (i.e., manufacturers or members states in the European Union). Key assumptions regarding the end-of-life stage scenario shall be documented in the LCA report and in the EPD. The relevant data for this stage includes transportation information for waste products, data related to the disassembly and sorting processes of the products, as well as the corresponding weights of components, materials, combustibles used for energy recovery, landfilled waste, and the emission of refrigerants. If specific data is not available, generic data may be used; if still unavailable, the use of proxy data is permitted.

- Collect downstream data for printed circuit boards (PCB) in accordance with Table 2.
- The refrigerant is either recycled or released into the atmosphere depending on its type.

Table 2 End-of-life Scenarios

Component Name	Recycling Rate of Various Electrical and Electronic Products	Waste Generation and Disposal Status	Category	Downstream Data

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Printed Circuit Board (PCB) Assemblies	Recycled	Sorted discharge of renewable resources	Waste electrical and electronic equipment	Recovery and recycling of waste non-ferrous metals
				Designated waste incineration
				Hazardous waste landfill
	Not recycled	Mixed discharge by weight	Waste metals	Recovery and recycling of waste non-ferrous metals
				Designated waste incineration
				Hazardous waste landfill

4.10 ENVIRONMENTAL PERFORMANCE INDICATORS

See PCR 2024:06.

4.11 SPECIFIC RULES PER EPD TYPE

See PCR 2024:06.

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5 CONTENT AND FORMAT OF EPD

See PCR 2024:06.

5.1 LAYOUT OF THE PRESENTATION

See PCR 2024:06.

5.2 DESCRIPTION OF THE LCA MODELLING

See PCR 2024:06.

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6 CONTENT AND FORMAT OF EPD

See PCR 2024:06.

6.1 EPD LANGUAGES

See PCR 2024:06.

6.2 UNITS AND QUANTITIES

See PCR 2024:06.

6.3 USE OF IMAGES IN EPD

See PCR 2024:06.

6.4 SECTIONS OF THE EPD

See PCR 2024:06.

6.4.1 COVER PAGE

See PCR 2024:06.

6.4.2 GENERAL INFORMATION

See PCR 2024:06.

6.4.3 INFORMATION ABOUT EPD OWNER

See PCR 2024:06.

6.4.4 PRODUCT INFORMATION

See PCR 2024:06.

The technical specifications listed in Section 4.2.3 shall be declared in the EPD.

6.4.5 CONTENT DECLARATION

See PCR 2024:06.

6.4.6 LCA INFORMATION

See PCR 2024:06.

6.4.7 ENVIRONMENTAL PERFORMANCE

See PCR 2024:06.

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6.4.8 ADDITIONAL ENVIRONMENTAL INFORMATION

See PCR 2024:06.

6.4.9 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

See PCR 2024:06.

6.4.10 INFORMATION RELATED TO SECTOR EPDS

See PCR 2024:06.

6.4.11 VERSION HISTORY

See PCR 2024:06.

6.4.12 ABBREVIATIONS

See PCR 2024:06.

6.4.13 REFERENCES

See PCR 2024:06.

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7 LIST OF ABBREVIATIONS

In addition to abbreviations listed in PCR 2024:06:

CO ₂	Carbon dioxide
ABS	Acrylonitrile Butadiene Styrene
HIPS	High Impact Polystyrene
VOCs	Volatile Organic Compounds

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9 VERSION HISTORY OF C-PCR

VERSION 20XX-YY-ZZ

Original version of the PCR.

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