Declaration Owner

Elkay Manufacturing Company
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Product

Elkay Pro Filtration™ Single Bottle Filling Station

Functional Unit

1 packaged, installed unit with a Reference Service Life of 10 years in a building with an Estimated Service life of 75 years.
The scope of this EPD is Cradle-to-Grave.

EPD Number and Period of Validity

SCS-EPD-10474
EPD Valid August 18, 2025 through August 17, 2030

Product Category Rule

UL PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 4 (December 2022).

UL PCR Guidance for Building-Related Products and Services Part B: Kitchen and Bath Fixture Fittings and Accessory Products EPD Requirements. Version 1 (October 2020).

Program Operator

SCS Global Services
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Declaration owner:	Elkay Manufacturing Company
Address:	1333 Butterfield Road, Suite 200, Downers Grove, IL 60515
Declaration Number:	SCS-EPD-10474
Declaration Validity Period:	EPD Valid August 18, 2025 through August 17, 2030
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Millicent Gabriel, SCS Global Services
General Program Instructions and Version Number:	SCS Type III Environmental Declaration Program: Program Operator Manual. V12.0 December 2023. SCS Global Services.
LCA Software and LCI database:	OpenLCA 2.1.1 software and the Ecoinvent v3.10 database
Product's Intended Application:	For use with plumbing systems to deliver and drain water.
Product RSL:	10 Years (ESL 75 Years)
Markets of Applicability:	North America
EPD Type:	Product Average
EPD Scope:	Cradle-to-Grave
LCIA Method and Version:	CML-IA Baseline and TRACI 2.1
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒external
LCA Reviewer:	Lindita Bushi, PhD, Athena Sustainable Materials Institute
Part A Product Category Rule:	UL. PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 4. December 2022.
Part A PCR Review conducted by:	Lindita Bushi, PhD (Chair); Hugues Imbeault-Tétreault, ing., M.Sc.A.; Jack Geibig
Part B Product Category Rule:	UL PCR Guidance for Building-Related Products and Services Part B: Kitchen and Bath Fixture Fittings and Accessory Products EPD Requirements. Version 1.0. October 2020
Part B PCR Review conducted by:	Thomas Gloria (Chair), Industrial Ecology Consultants; Christopher Marozzi, Lixil Water Technologies Americas; Kim Lewis, Sustainable Minds
Independent verification of the declaration and data, according to ISO 14025, ISO 21930, and the PCR	☐ internal ☒ external
EPD Verifier:	Lindita Bushi, PhD, Athena Sustainable Materials Institute
Declaration Contents:	

Disclaimers: *This EPD conforms to ISO 14025, 14040, 14044, and ISO 21930.*

Scope of Results Reported: *The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.*

Accuracy of Results: *Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.*

Comparability: *The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.*

In accordance with ISO 21930:2017, EPDs are comparable only if they comply with the core PCR, use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works. The owner of the declaration shall be liable for the underlying information and evidence; SCS shall not be liable with respect to manufacturer information, life cycle assessment data, and evidence supplied or made available to SCS.

1. ABOUT ZURN ELKAY WATER SOLUTIONS

Zurn Elkay Water Solutions supplies the industry's widest range of clean water solutions for drinking water, hygiene, and sustainable water management. Headquartered in Milwaukee, Wisconsin, Zurn Elkay Water Solutions works with customers around the globe to deliver products and systems that enhance and promote water quality, safety, hygiene, flow control and conservation.

2. PRODUCT

2.1 Product Description

Elkay is proud to offer their next generation of Bottle Filling Stations, Elkay Pro Filtration™ (EPF). Elkay Pro Filtration Bottle Filling Stations offer simplified maintenance and reliability. With an advanced filtration system and innovative design, maintaining filtered drinking water is easier than ever. Filters are accessible from the top of the Bottle Filling Station for easy filter changes in a matter of seconds. They are compatible with Elkay Pro Filtration filters, which offer high-capacity filtration up to 10,000 gallons and high reduction of contaminants such as total PFAS*, lead, microplastics, asbestos and more. Enhance the system's filtration with the stage 1 sediment filter, which reduces sediment buildup caused by municipal water supply. The product covered in this EPD includes one single filtered water dispenser. The Elkay Bottle Filling Station products reviewed in this report belong to the Construction Specifications Institute (CSI) code 22 47 14 and 22 24 13. All products reviewed in this report also fall under UNSPSC7 code 30181700.

Table 1. *Product line specifications.*

Bottle Filling Station Line	Models Included	Model Image	Features
Elkay Pro Filtration™	LZS8WSBPRO LZS8WSBPRO-FLP4 LZS8WSBPRO-FSR5 LZS8WSBPRO-UV		■ Touch-free sensor operated bottle filling station ■ Filters are accessible from the top of the bottle filling station for easy filter changes in a matter of seconds ■ Up to 10,000 gallon filtration capacity ■ High reduction of contaminants such as total PFAS, lead, microplastics, asbestos and more ■ Laminar flow ■ LED filter status light to indicate filter status ■ Stage 1 sediment filter, which reduces sediment buildup caused by the municipal water supply

*According to NSF/ANSI 53

2.2 Flow Diagram

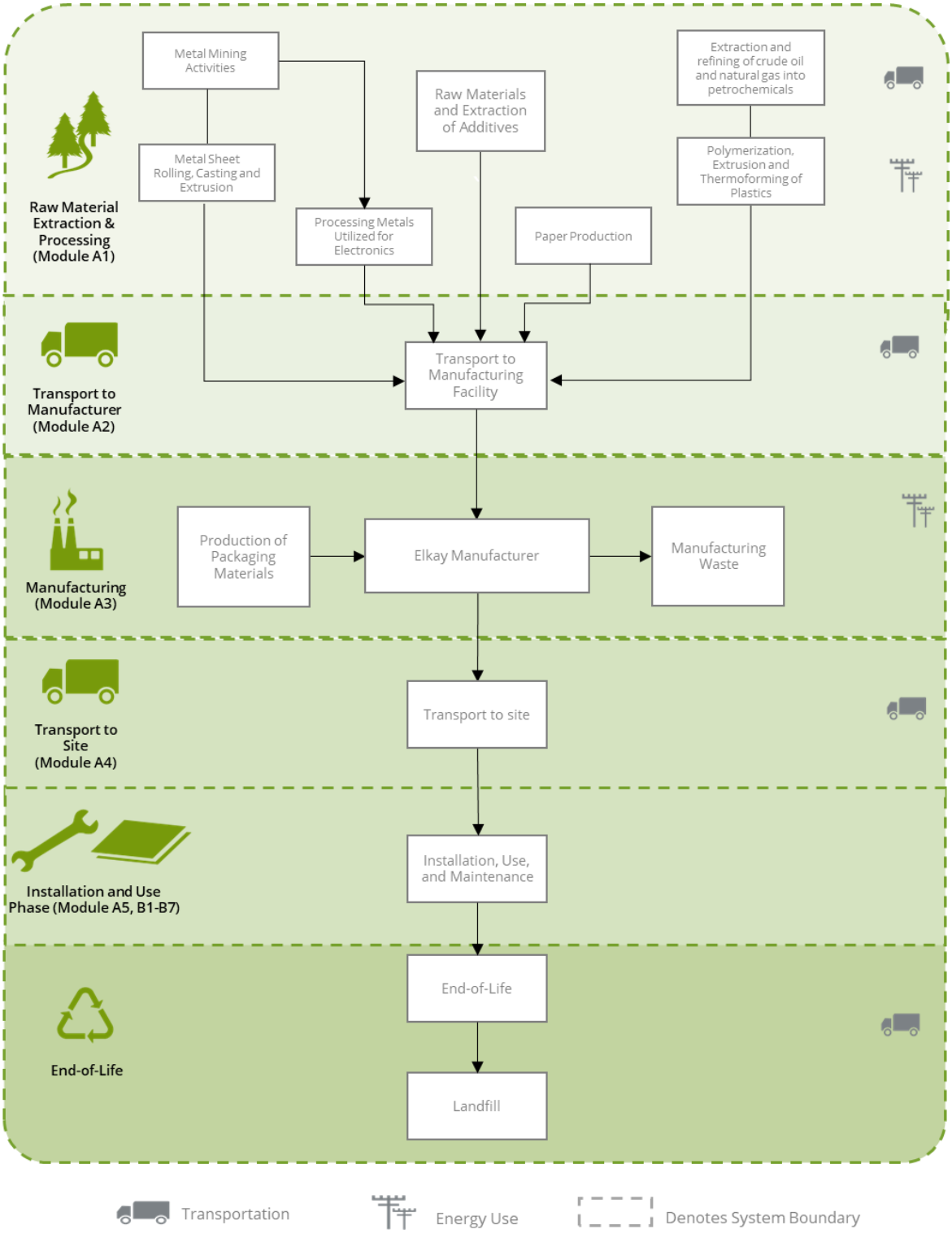

Figure 1. *Flow diagram and system boundaries for the Elkay Pro Filtration™ Bottle Filling Station.*

2.3 Application

Elkay Pro Filtration Bottle Filling Stations are installed in commercial, industrial, and institutional markets across North America and are designed for use with plumbing systems to deliver drinking water.

2.4 Declaration of Methodological Framework

The scope of the EPD is cradle-to-grave, including raw material extraction and processing; raw material transportation; product manufacture, including packaging; product distribution; installation; use; and end-of-life.

Manufacturing resource use was allocated to the products on a unit basis. Impacts from transportation were allocated based on the mass of material and distance transported.

Consistent with the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. No known flows were deliberately excluded from this EPD.

2.5 Technical Requirements

Table 2. *Elkay Pro Filtration™ Bottle Filling Station Technical Requirements.*

Property	Unit	Value
Width	mm	483
Length	mm	467
Height	mm	1191
Maximum flow rate	GPM	1.5*

*Maximum flow rate varies by filter - WaterSentry® Lead+Microplastics filter (model #FL10) has a rate of 1.5 GPM. This flow rate was used to model water usage in this LCA.

2.6 Market Placement/Application Rules

The products declared in this document comply with the following codes or regulations:

- ✓ ADA & ICC A117.1†
- ✓ FCC & ISED
- ✓ NSF/ANSI 42, 53, 61, 372, 401
- ✓ UL 399
- ✓ CAN/CSA C22.2 No. 120

2.7 Properties of Declared Product as Delivered

Elkay Bottle Filling Stations are delivered by truck to the installation site. The total nominal weight of the Elkay Pro Filtration™ product with packaging is 35.5 kg. The nominal dimensions are: **Height** 46.9″ (1191 mm), **Width** 19″ (483 mm), **Length** 18.4″ (467 mm).

2.8 Material Composition

The main product materials for the average product are presented in Table 3. Product materials were reviewed for the presence of any toxic or hazardous chemicals. Based on a review of the product components provided by the manufacturer, no regulated chemicals were identified in the product or product components. Please note that within each product line, the product composition differs by no more than ±10% for any environmental impact indicator.

†ADA ICC A117.1 compliant when installed within the guidelines set out in these standards

Table 3. *Elkay Pro Filtration™ Bottle Filling Station Material Components.*

Raw Materials	Mass Final Product (kg)	% Mass Final Product
PCBA	0.091	0.29%
Sensor Assembly and Power Switch	0.007	0.02%
Foam Insulation	0.024	0.07%
Plastic PVC	0.126	0.39%
Polypropylene	0.122	0.37%
Polyethylene	3.02	9.28%
Plastic ABS	0.092	0.28%
Power Supply	0.091	0.28%
Compressor	7.501	23.0%
Solenoid Valve	0.454	1.39%
Galvanized Steel	4.70	14.4%
Copper Coil and Tubing	0.158	4.85%
Brass Washers	0.003	0.01%
Stainless Steel Fixtures	13.34	41.0%
Screws	0.236	0.72%
Armaflex Rubber Foam	0.16	0.49%
Material Coloring	0.001	0.00%
Nylon	0.006	0.02%
Polyacetal Copolymer	0.004	0.01%
Ferrite	0.064	0.20%
Suva R134A	0.120	0.37%
Activated Carbon	0.816	2.51%
Total:	**31.1**	**100%**

2.9 Manufacturing

Elkay Bottle Filling Stations are manufactured in Lanark, Illinois. The manufacturing process consists of assembling parts via power drill and screws, cutting and fitting plastic pieces such as tubes and foam, integrating electronic components and packaging of the final bottle filling station products. Raw materials for assembly include electronic components, steel, mechanical components, and additional materials such as foam insulation and plastics. Primary data from twelve months of manufacturer provided data was used to model production, resource use, electricity consumption, and waste generation at the facilities. Electricity consumption is modeled using Ecoinvent datasets for the regional resource mix with the closest match to the facility. The final products are then sorted and packaged for distribution.

2.10 Transportation

Transportation mode and distance from the manufacturing facility in Lanark, Illinois to Elkay's distribution center was provided by Elkay. Distribution data from the distribution center to various points of purchase was not available and therefore an estimate was utilized to model sale and distribution of Elkay Bottle Filling Stations to various locations across the United States. An average of the distance to the five largest cities in the United States was utilized to estimate the transport of the Bottle Filling Stations from the distribution center to points of purchase. Transportation from point of purchase to installation sites in the United States are assumed to be 500 km by truck, consistent with the PCR requirements.

2.11 Installation

Installation of Elkay Bottle Filling Stations are completed using manual labor and does not require additional ancillary materials. Waste is generated from the disposal of packaging material at the installation site.

2.12 Packaging

Table 4. *Elkay Pro Filtration™ Bottle Filling Station Packaging Components.*

Packaging	Mass (kg)	% Mass	% Recycled Content
Cardboard	2.62	92.91%	80%
Polyethylene Foam	0.08	2.84%	0%
Bubble Wrap	0.006	0.21%	0%
Labels	0.114	4.04%	0%
Total:	**2.82**	**100%**	**-**

2.13 Use Conditions

Water use impacts were modeled following guidance from the Part B PCR for a commercial water filler. Typical maintenance involves cleaning of the Bottle Filling Station unit with cleaning solution and a damp cloth. No known repairs are needed for the Bottle Filling Stations over their known service life. Replacement of filters is assumed to be annual per manufacturer recommendations.

2.14 Product Reference Service Life and Building Estimated Service Life

The PCR establishes a Reference Service Life for Bottle Filling Stations of 10 years. The PCR also establishes an Estimated Service Life of the building to be 75 years, for use in the use phase modelling to fulfill the required performance and functionality over the construction works.

2.15 Re-Use Phase

It is assumed that no materials or Bottle Filling Stations are recovered and processed for re-use.

2.16 Disposal

It is assumed that Bottle Filling Stations at end-of-life are disposed of in a landfill. Transportation of Bottle Filling Stations assumes a 100-kilometer distance to disposal as specified in the PCR.

3. LCA: CALCULATION RULES

3.1 Functional Unit

The functional unit used in the study is one (1) packaged and installed unit with a reference service life (RSL) of 10 years to be installed in a building with an estimated service life (ESL) assumed to be 75-years.

Table 5. *Elkay Pro Filtration™ Bottle Filling Station Functional Unit Properties.*

Property	Unit	Value
Functional Unit	-	One (1) packaged, installed product
RSL	Years	10
ESL	Years	75
Mass including packaging	kg	34.0
Flush rate	m^3/sec	N/A
Flow rate	m^3/sec	$9.45x10^{-2}$‡

‡ WaterSentry Lead+ Microplastics filter (model #51600C) used to model the flow rate for this LCA

3.2 System Boundary

The scope of the EPD is cradle-to-grave, including raw material extraction and processing; raw material transportation; product manufacture, including packaging; product distribution; installation; use; and end-of-life disposal.

Table 6. *Elkay Bottle Filling Stations System Boundaries.*

Product			Construction Process		Use							End-of-life				Benefits and loads beyond the system boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material extraction and processing	Transport to manufacturer	Manufacturing	Transport	Construction - installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery and/or recycling potential
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND

X = Included in system boundary | MND = Module not declared

3.3 Product Specific Calculations for Use Phase (Modules B1-B7)

Water usage was modeled following guidance of the Part B PCR and shown in Table 14. Primary data for energy usage of Bottle Filling Stations was not available and therefore modeled based on drinking fountain electricity usage provided by a study conducted by the North Carolina Department of Environmental Quality[1].

3.4 Estimates and Assumptions

- Specific data were not available on the printed circuit boards, sensors, power supply, solenoid valve and compressors in the Bottle Filling Stations. Secondary datasets for a were used from the Ecoinvent database to best represent the data in the LCA model.
- The increased complexity of printed circuit boards with the ability to connect to the internet were modeled using a secondary dataset from the Ecoinvent database for logic type integrated circuit boards. All other chips were modeled using memory type circuit boards.
- The filters utilized in these products are assumed to be replaced in an annual basis as recommended by the manufacturer.
- Product transport from point of purchase to the building site is assumed to be 500 km by truck as required by the Part B PCR.
- Product transport from the Elkay distribution centers to points of purchase was not available, therefore products were assumed to be transported to the five largest cities across the United States.

[1] State Energy Office, N.C. Department of Administration and the U.S. Department of Energy. "Drinking Fountains & Water Coolers Energy Saving Fact Sheet." March 2010. https://www.deq.nc.gov/environmental-assistance-and-customer-service/ias-energy-efficiency/opportunities/drinking-fountains/download

- Installation of the products is assumed to be manual, using hand tools, requiring no additional materials or energy use.
- Transport of the packaging waste at installation is assumed to be 100 km by truck as required by the Part B PCR.
- Transport of the product at end-of-life to waste processing and disposal is assumed to be 100 km by truck as required by the Part B PCR.
- The Reference Service Life (RSL) of the products was modeled as 10 years, as required by the Part B PCR.
- The maintenance of the products is assumed to include daily cleaning with a cleaning solution of 10 ml of 1% sodium lauryl sulfate solution as specified in the Part B PCR. A dataset for sodium lauryl sulfate was not available and a dataset for cleaning consumables was utilized instead.
- The products are assumed to require no replacement, repair, or refurbishment during the 10-year RSL, but in accordance with the Part A PCR and Part B PCR, requires replacement 6.5 times over the 75-year ESL.
- The use phase modules are modeled for the building/construction works ESL of 75 years.
- Data on energy usage for the Bottle Filling Stations was not available and estimated based on drinking fountain electricity usage provided by the North Carolina Department of Environmental Quality.
- For the product end-of-life, disposal of product is assumed to follow the disposal scenario indicated in the Part A PCR.

3.5 Cut-off Rules

According to the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results.

3.6 Data Sources

Primary data were provided by Elkay for the Lanark, Illinois facility. To the extent available, primary data are used for foreground processes (e.g., product manufacturing), while background processes in this study are modeled using secondary data sourced from the Ecoinvent 3.10 LCI databases with a bias towards the most recent and representative data.

Table 7. *LCI datasets and associated databases used to model the Elkay Pro Filtration™ Bottle Filling Station.*

Component	Dataset	Geography	Data Source	Publication Date
Product				
Printed Circuit Board Assembly (PCBA)	market for electronic component, active, unspecified | electronic component, active, unspecified | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for integrated circuit, memory type | integrated circuit, memory type | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for integrated circuit, logic type | integrated circuit, logic type | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Sensor Assembly and Power Switch	market for electronic component, active, unspecified | electronic component, active, unspecified | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Foam Insulation	polystyrene production, expandable | polystyrene, expandable | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
	market for polyurethane, flexible foam | polyurethane, flexible foam | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Plastic PVC	polyvinylchloride production, suspension polymerisation | polyvinylchloride, suspension polymerised | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for extrusion, plastic pipes | extrusion, plastic pipes | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Polypropylene	market for polypropylene, granulate | polypropylene, granulate | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for extrusion, plastic pipes | extrusion, plastic pipes | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Polyethylene	market for polyethylene, low density, granulate | polyethylene, low density, granulate | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for extrusion, plastic pipes | extrusion, plastic pipes | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Plastic ABS	acrylonitrile-butadiene-styrene copolymer production | acrylonitrile-butadiene-styrene copolymer | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for extrusion of plastic sheets and thermoforming, inline | extrusion of plastic sheets and thermoforming, inline | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Power supply	market for power supply unit, for desktop computer | power supply unit, for desktop computer | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Compressor	market for air compressor, screw-type compressor, 4kW | air compressor, screw-type compressor, 4kW | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Galvanized Steel Sheets	market for steel, low-alloyed, hot rolled | steel, low-alloyed, hot rolled | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for zinc coat, pieces | zinc coat, pieces | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Copper Coil and Tubing	market for copper, cathode | copper, cathode | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for metal working, average for copper product manufacturing | metal working, average for copper product manufacturing | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Brass Washer	market for brass | brass | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
	market for casting, brass | casting, brass | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Stainless Steel Fixtures	market for steel, chromium steel 18/8 | steel, chromium steel 18/8 | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for metal working, average for steel product manufacturing | metal working, average for steel product manufacturing | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Screws	market for zinc coat, pieces | zinc coat, pieces | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for wire drawing, steel | wire drawing, steel | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023

Component	Dataset	Geography	Data Source	Publication Date
Armaflex Rubber Foam	market for cork, raw | cork, raw | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
	market for polyurethane adhesive | polyurethane adhesive | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
	market for synthetic rubber | synthetic rubber | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Suva R134A	market for refrigerant R134a | refrigerant R134a | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Material Coloring	market for coating powder | coating powder | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Nylon	market for nylon 6 | nylon 6 | Cutoff, U - RoW	RoW	Ecoinvent 3.10	Nylon
Aerator, Polyacetal Copolymer	market for glass fibre reinforced plastic, polyamide, injection moulde glass fibre reinforced plastic, polyamide, injection moulded | Cutoff, GLO	GLO	Ecoinvent 3.10	Aerator, Polyacetal Copolymer
Activated Carbon	activated carbon production, granular from hard coal | activated carbon, granular | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Ferrite	market for ferrite | ferrite | Cutoff, U - GLO	GLO	Ecoinvent 3.10	Ferrite
Packaging				
Cardboard	market for corrugated board box production | corrugated board box | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Polyethylene Foam	market for fleece, polyethylene | fleece, polyethylene | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Bubble Wrap	market for packaging film, low density polyethylene | packaging film, low density polyethylene | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Labels	market for paper, newsprint | paper, newsprint | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Transport				
Ship	market for transport, freight, sea, container ship | transport, freight, sea, container ship | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Truck	market for transport, freight, lorry 16-32 metric ton, EURO4 | transport, freight, lorry 16-32 metric ton, EURO4 | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Manufacture Inputs				
Electricity	electricity voltage transformation from high to medium voltage | electricity, medium voltage | Cutoff, U - US-MRO	US-MRO	Ecoinvent 3.10	2023
Natural Gas	heat production, natural gas, at industrial furnace >100kW | heat, district or industrial, natural gas | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Use Phase Inputs				
Cleaning Consumable (B2)	market for cleaning consumables, without water, in 13.6% solution state | cleaning consumables, without water, in 13.6% solution state | Cutoff, U - GLO	GLO	Ecoinvent 3.10	2023
Electricity (B6)	market group for electricity, medium voltage | electricity, medium voltage | Cutoff, U - US	US	Ecoinvent 3.10	2023
Water (B7)	market for tap water | tap water | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Waste Outputs				
Hazardous Waste	market for hazardous waste, for incineration | hazardous waste, for incineration | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Landfill	market for inert waste, for final disposal | inert waste, for final disposal | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023
Electrical Waste	treatment of waste, electrical and electronic cables, open burning | waste, electrical and electronic cables | Cutoff, U - RoW	RoW	Ecoinvent 3.10	2023

3.7 Data Quality

Table 8. *Data Quality Assessment.*

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected	The manufacturer provided primary data on product manufacturing for the Elkay facility in Lanark, Illinois on annual production for 2024. Representative datasets (secondary data) for upstream and background processes are generally less than 5 years old.
Geographical Coverage: Geographical area from which data for unit processes is collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data modelled for the specific electricity grid (Midwest Reliability Organization) represented in this study.
Technology Coverage: Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative component datasets, specific to the type of material, are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used with a bias towards Ecoinvent v3.10 data where available. Different portions of the product life cycle are equally considered.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of the data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
Sources of the Data: Description of all primary and secondary data sources	Data representing energy use at the manufacturing facility represents a 12-month average and is considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. For secondary LCI data, Ecoinvent v3.10 data are used.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the products and packaging is low. Actual supplier data for upstream operations was not available for all suppliers and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data (<10 years) but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment methodology includes impact potentials, which lack characterization of providing and receiving environments or tipping points.

3.8 Period under review

The period of review is based on a 12-month period from January 2024 through December 2024.

3.9 Allocation

Manufacturing resource use was allocated to the products on a unit basis. Impacts from transportation were allocated based on the mass of material and distance transported. No burdens are allocated across the system boundary with secondary material, secondary fuel, or recovered energy flows arising from waste.

3.10 Comparability

The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results due to and not limited to the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.

4. LCA: TECHNICAL INFORMATION AND SCENARIOS

4.1 Transport to the Building Site (A4)

Table 9. *Elkay Pro Filtration™ Bottle Filling Station Transportation Summary, per one unit.*

Name	Unit	Value
Fuel type	-	Diesel
Liters of fuel	l/100 km/ g/tkm	18.7/2.23
Vehicle Type	-	Freight Truck
Transport Distance	km	3,205
Capacity utilization	%	50
Gross mass of products transported[1]	kg	35.4

[1] including packaging

4.2 Installation into the Building (A5)

Table 10. *Elkay Bottle Filling Stations Installation Summary, per one unit.*

Name	Unit	Value
Ancillary materials	kg	0
Net freshwater consumption specified by water source and fate	m^3	0
Other resources	kg	0
Electricity consumption	kwh	0
Other energy carriers	MJ	0
Product loss per functional unit	kg	0
Waste materials at the construction site before waste processing, generated by product installation	kg	0
Output materials resulting from on-site waste processing	kg	0
Mass of packaging waste specified by type	kg	2.82
Recycle	kg	2.12
Landfill	kg	0.564
Incineration	kg	0.141
Biogenic carbon contained in packaging	kg CO_2	11.0
Direct emissions to ambient air, soil, and water	kg	0
VOC emissions	µg/m^3	0

4.3 Use

Maintenance (B2)

Table 11. *Elkay Pro Filtration™ Bottle Filling Station Maintenance Summary, per one unit.*

Maintenance	Unit	Value
Description of process	-	Daily cleaning with 10 ml of 1% sodium lauryl sulfate solution
Maintenance cycle	Cycles/RSL	3,650
Maintenance cycle	Cycles/ESL	27,375
Net freshwater consumption		
City water disposed to sewer	m^3/RSL	$3.65x10^{-2}$
City water disposed to sewer	m^3/ESL	0.274
Ancillary materials		
Sodium lauryl sulfate (active ingredient)	kg/RSL	0.365
Sodium lauryl sulfate (active ingredient)	kg/ESL	2.74
Other resources	kg	0
Electricity consumption	kWh	0
Other energy carriers	kWh	0
Power output of equipment	kW	0
Material loss	kg	0
Direst emissions to ambient air, soil, and water	kg	0
Further assumptions for scenario development	-	-

Repair (B3)

No repair is required with the use of the product over the reference service lifetime.

Replacement (B4)

Table 12. *Elkay Pro Filtration™ Bottle Filling Station Replacement Summary, per one unit.*

Replacement	Unit	Value
Replacement cycle (RSL)	Number/RSL	10
Replacement cycle (ESL/RSL)-1	Number/ESL	6.5
Electricity consumption	kWh	0
Net freshwater consumption	m^3	0
Ancillary materials	kg	0
Replacement of worn parts (per RSL)	kg	0
Replacement of materials (per ESL)	kg	221
Direct emissions to ambient air, soil, and water	kg	0
Further assumptions for scenario development	-	-

Refurbishment (B5)

Module B5 reflects the replacement of filter cartridges over the estimated service lifetime.

Table 13. *Elkay Pro Filtration™ Bottle Filling Station Refurbishment Summary, per one unit.*

Replacement	Unit	Value
Refurbishment process	-	N/A
Refurbishment cycle	Cycles/RSL	9

Refurbishment cycle	Cycles/ESL	68
Energy input	kWh	0
Net freshwater consumption	m^3	0
Material input	kg	61
Waste materials	kg	60
Direct emissions to ambient air, soil, and water	kg	0
Further assumption for scenario development	-	-

Operational Energy and Water Use (B6 – B7)

Operational energy and water usage was modeled under guidance of the Part B PCR and utilizing the assumptions stated in Section 3.4.

Table 14. *Elkay Pro Filtration™ Bottle Filling Station Use Summary, per one unit.*

Operational Energy and Water Use	Unit	Bottle Filling Station 8 ounces per use
Net freshwater consumption		
City water	m^3/year	3.54
City water (Per RSL)	m^3/RSL	35.4
City water (Per ESL)	m^3/ESL	265.5
Ancillary materials	kg	0
Energy input (per year)	kWh	562
Energy input (per RSL)	kWh/RSL	5,620
Energy input (per ESL)	kWh/ESL	42,150
Equipment power output	kW	0
Characteristic performance	-	-
Direct emissions to ambient air, soil, water	kg	0
Further assumptions for scenario development (per PCR)	Water use is assumed 100% cold water at a volume of 8 ounces. Electricity usage assumed based on drinking fountain energy usage per North Carolina department of environmental quality.	
Number of users per day	60	
Number of uses per user per day	1	
Number of use days per year	260	

4.4 End-of-Life

Table 15. *Elkay Pro Filtration™ Bottle Filling Station End-of-Life Summary, per one unit.*

End-of-life		Unit	Value
Assumptions for scenario development			Manual deconstruction, followed by 100 km truck transport to final disposal in landfill
Collection process	Collected separately	kg	0
	Collected with mixed construction waste	kg	31.1
Recovery	Reuse	kg	0
	Recycling	kg	0
	Landfill	kg	31.1
	Incineration	kg	0
	Energy recovery	kg	0
	Energy Conversion	n/a	0
Disposal	Final disposal in a landfill	kg	31.1
Removals of biogenic carbon (excluding packaging)		kg CO2	0

5. LCA: RESULTS

Results of the Life Cycle Assessment for the functional unit of one (1) packaged, installed Elkay Pro Filtration™ Bottle Filling Station unit with a reference service life (RSL) of 10 years are presented below. It should be noted that LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Impact category indicators are estimated using the TRACI 2.1 and the CML-IA characterization methods as required by the PCR. It should also be noted that the indicators prescribed by the PCR do not represent all categories of potential environmental and human health impact associated with the life cycle of Bottle Filling Station products, and this represents a general limitation of the LCA study.

Table 16. *Mandatory Environmental Impact Assessment Categories.*

CMLI-A Impact Category	Unit	TRACI 2.1 Impact Category	Unit
GWP: Global Warming Potential	kg CO_2 eq.	**GWP:** Global Warming Potential	kg CO_2 eq.
ODP: Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	**ODP:** Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.
AP: Acidification Potential of soil and water	kg SO_2 eq.	**AP:** Acidification Potential of soil and water	kg SO_2 eq.
EP: Eutrophication Potential	kg PO_4^{3-} eq.	**EP:** Eutrophication Potential	kg N eq.
POCP: Photochemical Oxidant Creation Potential	kg C_2H_4 eq.	**SFP:** Smog Formation Potential	kg O_3 eq.
ADPE: Abiotic Depletion Potential, elements	kg Sb eq.	**FFD:** Fossil Fuel Depletion	MJ Surplus
ADPF: Abiotic Depletion Potential, fossil fuels	MJ eq.		

These impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes. The following inventory parameters, specified by the PCR, are also reported.

Table 17. *Additional Transparency Categories.*

Resources	Unit	Waste and Outflows	Unit
RPR_E: Renewable primary resources used as energy carrier (fuel)	MJ, LHV	**HWD:** Hazardous waste disposed	kg
RPR_M: Renewable primary resources with energy content used as material	MJ, LHV	**NHWD:** Non-hazardous waste disposed	kg
$NRPR_E$: Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	**RWD:** Radioactive waste, conditioned, to final repository	kg
$NRPR_M$: Non-renewable primary resources with energy content used as material	MJ, LHV	**CRU:** Components for re-use	kg
SM: Secondary materials	kg	**MR:** Materials for recycling	kg
RSF: Renewable secondary fuels	MJ, LHV	**MER:** Materials for energy recovery	kg
NRSF: Non-renewable secondary fuels	MJ, LHV	**EE:** Recovered energy exported from the product system	kg
RE: Recovered energy	MJ, LHV	**EE:** Recovered energy exported from the product system	MJ, LHV
FW: Use of new freshwater resources	m^3	-	-

All LCA results are stated to three significant figures in agreement with the PCR for this product and therefore the sum of the total values may not exactly equal 100%. Results for Modules B6 and B7 (Operational Energy and Operational Water Use) are shown separately.

5.1 Elkay Pro Filtration™ Single Bottle Filling Station Results

Table 18. *CML-IA Environmental Impact Results for Elkay Pro Filtration™ Bottle Filling Stations, per one packaged installed product.*

Module	GWP	ODP	AP	EP	POCP	ADPE	ADPF
	kg CO_2 eq	kg CFC-11 eq	kg SO_2 eq	kg PO_4^{-3} eq	kg C_2H_4 eq	kg Sb eq	MJ
A1	185	$9.96x10^{-5}$	1.93	0.901	0.091	0.010	1,908
A2	8.66	$1.03x10^{-7}$	0.027	$9.26x10^{-3}$	$1.31x10^{-3}$	$1.23x10^{-5}$	120
A3	17.7	$1.68x10^{-7}$	0.026	0.020	$1.82x10^{-3}$	$8.11x10^{-6}$	111
A1-A3 Total:	**212**	**$9.99x10^{-5}$**	**1.98**	**0.930**	**0.094**	**$1.01x10^{-2}$**	**2,139**
A4	18.4	$2.94x10^{-7}$	$6.50x10^{-4}$	$2.51x10^{-4}$	$3.20x10^{-5}$	$3.01x10^{-7}$	256
A5	0.473	$6.84x10^{-9}$	$6.98x10^{-4}$	$5.27x10^{-4}$	$3.44x10^{-5}$	$2.90x10^{-7}$	2.92
B1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B2	136	$2.83x10^{-6}$	0.657	1.01	0.046	$5.07x10^{-4}$	1,892
B3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4	1,568	$6.51x10^{4}$	13.0	6.36	0.744	$6.55x10^{-2}$	15,698
B5	197	$8.36x10^{-6}$	1.14	0.506	0.052	$8.02x10^{-5}$	2,330
B6	19,731	$1.08x10^{-4}$	45.9	44.3	2.19	$9.62x10^{-3}$	239,046
B7	337	$7.48x10^{-5}$	1.43	0.663	0.071	$7.58x10^{-4}$	3,536
C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C2	0.528	$6.30x10^{-9}$	$1.63x10^{-3}$	$5.64x10^{-4}$	$8.01x10^{-5}$	$7.52x10^{-7}$	7.34
C3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	10.1	$1.12x10^{-8}$	$1.13x10^{-2}$	$4.64x10^{-2}$	$2.05x10^{-2}$	$8.95x10^{-7}$	9.78

Table 19. *TRACI 2.1 Environmental Impact Results for Elkay Pro Filtration™ Bottle Filling Stations, per one packaged installed product.*

Module	GWP	ODP	AP	EP	SFP	FFD
	kg CO_2 eq	kg CFC-11 eq	kg SO_2 eq	kg N eq	kg O_3 eq	MJ Surplus
A1	183	$1.00x10^{-4}$	1.83	1.83	14.3	154
A2	8.58	$1.40×10^{-7}$	0.032	$9.55×10^{-3}$	0.83	17.1
A3	17.6	$2.70×10^{-7}$	0.030	0.036	0.627	15.4
A1-A3 Total:	**209**	**$1.01x10^{-4}$**	**1.89**	**1.87**	**15.8**	**186**
A4	18.2	$3.40×10^{-9}$	$7.85x10^{-4}$	$2.33x10^{-4}$	0.020	255
A5	0.47	$7.89×10^{-9}$	$7.80×10^{-4}$	$1.08x10^{-3}$	0.015	0.388
B1	0.00	0.00	0.00	0.00	0.00	0.00
B2	135	$3.52×10^{-6}$	0.683	0.901	7.12	216
B3	0.00	0.00	0.00	0.00	0.00	0.00
B4	1,551	$6.54x10^{-4}$	16.9	13.0	107	2,885
B5	195	$8.66x10^{-6}$	1.14	0.815	11.5	145
B6	19,619	$2.48x10^{-4}$	46.5	97.6	529	24,563
B7	333	$7.67x10^{-5}$	1.49	1.29	20.7	256
C1	0.00	0.00	0.00	0.00	0.00	0.00
C2	0.52	$8.56×10^{-9}$	$1.96×10^{-3}$	$5.80×10^{-4}$	0.051	1.04
C3	0.00	0.00	0.00	0.00	0.00	0.00
C4	9.94	$1.39x10^{-8}$	0.708	0.120	0.511	1.34

Table 20. *Resource use indicator results for Elkay Pro Filtration™ Bottle Filling Stations, per one packaged installed product.*

Module	RPR_E	RPR_M	$NRPR_E$	$NRPR_M$	SM	RSF	NRSF	RE	FW
	MJ, LHV	MJ, LHV	MJ, LHV	MJ, LHV	kg	MJ, LHV	MJ, LHV	MJ, LHV	m^3
A1	417	0.00	2,104	0.00	0.00	0.00	0.00	0.00	1.94
A2	1.61	0.00	122	0.00	0.00	0.00	0.00	0.00	$1.67x10^{-2}$
A3	49.9	0.00	118	0.00	0.00	0.00	0.00	0.00	$4.65x10^{-2}$
A1-A3 Total:	**469**	**0.00**	**2,344**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**
A4	0.039	0.00	2.97	0.00	0.00	0.00	0.00	0.00	$4.10x10^{-4}$
A5	0.089	0.00	3.02	0.00	0.00	0.00	0.00	0.00	$1.11x10^{-3}$
B1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B2	716	0.00	2,053	0.00	0.00	0.00	0.00	0.00	4.13
B3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4	3,049	0	15,389	0.00	0.00	0.00	0.00	0.00	20.4
B5	114	0.00	2,471	0.00	0.00	0.00	0.00	0.00	32.3
B6	40,659	0.00	357,859	0.00	0.00	0.00	0.00	0.00	133
B7	383	0.00	4,004	0.00	0.00	0.00	0.00	0.00	264
C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C2	0.098	0.00	7.44	0.00	0.00	0.00	0.00	0.00	$1.02x10^{-3}$
C3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.247	0.00	9.98	0.00	0.00	0.00	0.00	0.00	1.14

Table 21. *Waste and Output indicators for Elkay Pro Filtration™ Bottle Filling Stations, per one packaged installed product.*

Module	HWD	NHWD	HLRW/ILLRW	CRU	MR	MER	EE
	kg	kg	kg	kg	kg	kg	MJ, LHV
A1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A3	$3.68x10^{-3}$	8.24	0.00	0.00	9.46	0.00	0.00
A1-A3 Total:	**$3.68x10^{-3}$**	**8.24**	**0.00**	**0.00**	**9.46**	**0.00**	**0.00**
A4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A5	0.00	0.900	0.00	0.00	2.70	0.00	0.00
B1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4	0.024	262	0.00	0.00	79.1	0.00	0.00
B5	0.00	60	0.00	0.00	0.00	0.00	0.00
B6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.00	31.1	0.00	0.00	0.00	0.00	0.00

6. LCA: INTERPRETATION

The interpretation of this study included the use of evaluation and sensitivity checks to steer the iterative process during the assessment, and a final evaluation including completeness, sensitivity, and consistency checks, at the end of the study.

The contributions to total impact indicator results are dominated by the use phase impacts from the energy and resource usage during the replacement (B4) module, operational energy usage (B6) and water usage (B7) module. When examining the results without modules B4, B6 and B7 the results for Elkay Pro Filtration™ Bottle Filling Stations are dominated by the raw material module (A1), with the product maintenance module (B2) also showing significant impacts.

Figure 2 shows the contribution analysis of the CML-IA and TRACI 2.1 impact indicator results for the Elkay Pro Filtration™ Bottle Filling Station products without modules B4, B6, and B7.

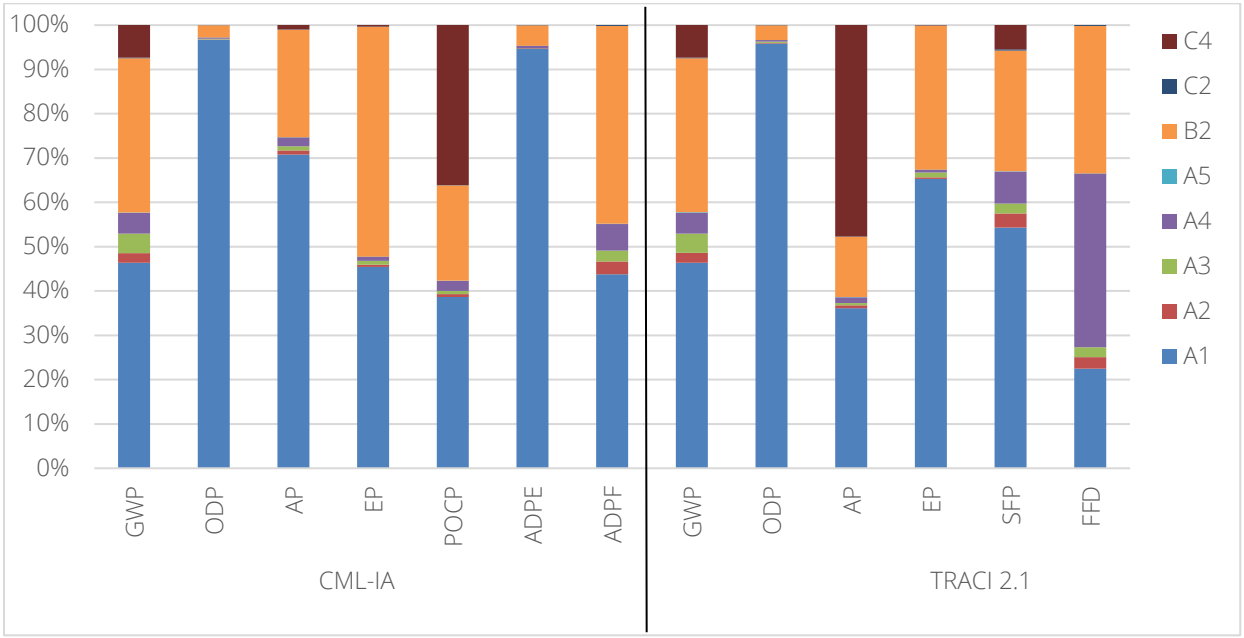

Figure 2. *Contribution analysis for the Elkay Pro Filtration™ Bottle Filling Stations (without Modules B4, B6, and B7).*

7. ADDITIONAL ENVIRONMENTAL INFORMATION

Elkay's Bottle Filling Stations within this EPD can be used to help achieve USGBC LEED v4 points and comply with building codes. No environmental or health impacts are expected due to extraordinary effects including fire and/or water damage and product destruction.

For more information on Elkay's certifications and environmental initiatives please visit their website at www.elkay.com/product-sustainability

To access the technical specification sheet for Elkay's Pro Filtration™ Single Bottle Filling Stations please visit the following link at https://www.elkayfiles.com/spec-sheets/lzs8wsbpro_spec.pdf

8. REFERENCES

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