

ENVIRONMENTAL PRODUCT DECLARATION

XL-TRACE-EDGE CT/CR, XL-TRACE LSZH, ICESTOP AND HWAT

SELF-REGULATING TRACE HEATING CABLE



Chemelex RAYCHEM XL-Trace self-regulating trace heating cables are energy efficient, easy to use solutions for pipe freeze protection and flow maintenance of grease waste lines (above and below ground) and fuel lines (above ground).

chemelex[®]
excellence is everything

Chemelex is a global leader in electrical heat tracing products and services, mineral-insulated fire rated wiring, electrical floor heating systems, and fluid Leak detection systems. The company supports customers with products and services in industries ranging from commercial and residential construction, data centers, energy, industrial process heating and transportation. Its products are marketed globally under leading brands including Raychem, Tracer, Pyrotenax, and Nuheat.

Chemelex's Raychem brand is at the forefront of the heat tracing industry. Products include industrial process heating systems, pipe freeze protection, surface snow melting & de-icing, floor heating, and hot water temperature maintenance. Raychem's solutions are vital in sectors including energy, infrastructure, and commercial & residential building. Applications ensure accurate temperature maintenance for operational efficiency, enhanced safety and customer comfort.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Solutions 333 Pfingsten Rd, Northbrook, IL 60062 www.ul.com www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	UL Solutions General Program Instructions v.2.7 2022
MANUFACTURER NAME AND ADDRESS	Chemelex 15375 Memorial Drive, Houston, TX 77079, United States
DECLARATION NUMBER	4791545949.109.2 (update occurred May 2025)
DECLARED PRODUCT & FUNCTIONAL UNIT	1 km of XL Trace Edge CT cable 1 km of XL Trace Edge CR cable 1 km of XL Trace LSZH
REFERENCE PCR AND VERSION NUMBER	Core PCR: EN 15804:2012+A2:2019 Guidance PCR: PEP-PCR-ed4-EN-2021 09 06
DESCRIPTION OF PRODUCT APPLICATION/USE	Pipe freeze protection and flow maintenance of grease waste line and fuel lines
PRODUCT RSL DESCRIPTION (IF APPL.)	25 years for XL Trace Edge, IceStop, 40 years for XL Trace LSZH and HWAT
MARKETS OF APPLICABILITY	Global
DATE OF ISSUE	April 21, 2025
PERIOD OF VALIDITY	5 Years
EPD TYPE	Product-specific
RANGE OF DATASET VARIABILITY	N/A
EPD SCOPE	Cradle-to-grave
YEAR(S) OF REPORTED PRIMARY DATA	2023
LCA SOFTWARE & VERSION NUMBER	LCA For Experts 10.8
LCI DATABASE(S) & VERSION NUMBER	Sphera MLC 2024.2
LCIA METHODOLOGY & VERSION NUMBER	EF 3.1 (as per EN 15804+A2)

The PCR review was conducted by:	PepEcoPassport
	PCR Review Panel
	contact@pep-ecopassport.org
This declaration was independently verified in accordance with ISO 14025: 2006. <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	Cooper McCollum, UL Solutions 
	WAP Sustainability
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Peter Yeon, H.I.P. Pathway 

LIMITATIONS

Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

1. Product Definition and Information

1.1 Description of Company/Organization

Chemelex is a global leader in electric thermal and sensing solutions, protecting the world's critical processes, places and people. With over 50 years of innovation and a commitment to excellence, we develop solutions that ensure safety, reliability, and efficiency in diverse environments – from industrial plants and data centers to people's homes. Chemelex delivers future-ready technologies, advanced engineering capabilities and local expertise backed by global standards. Our offering includes a leading portfolio from our trusted brands: Raychem, Tracer, Pyrotenax, and Nuheat.

1.2 Product Description



Figure 1: XL-Trace-Edge (CT) Product Image

XL-Trace Edge (CT)

The reference product to represent RAYCHEM XL-Trace Edge self-regulating trace heating cables is 5XLE2-CT. These self-regulating trace heating cables are energy efficient, easy to use solutions for pipe freeze protection and flow maintenance of grease waste lines (above and below ground) and fuel lines (above ground). Simple to design. Easy to install as a cut-to-length heater cable. Energy efficient due to self-regulating cable technology, and highly durable over a long, maintenance free, service life. Employs premium Fluoropolymer materials for chemical resistance and durability.



Figure 2: XL-Trace-Edge (CR) Product Image

XL-Trace Edge (CR)

The reference product to represent the RAYCHEM XL-Trace Edge (CR) is 5XLE2-CR. These self-regulating trace heating cables are energy efficient, easy to use solutions for pipe freeze protection and flow maintenance of grease waste lines (above and below ground) and fuel lines (above ground). Simple to design, easy to install as a cut-to-length heater cable. Energy efficient due to self-regulating cable technology, and highly durable over a long, maintenance free, service life. Employs premium cross-linked modified polyolefin materials for environmental strength, resistance and durability.



Figure 3: XL-Trace LSZH Product Image

XL-Trace LSZH

The reference product to represent the RAYCHEM XL-Trace LSZH cable is 10XL2-ZH. These self-regulating trace heating cables provide energy efficient and easy to use solutions for pipe freeze protection and flow maintenance in grease waste lines. Developed with low smoke zero halogen (LSZH) materials, to ensure the safest solution for modern building design.





RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

IceStop CT



Figure 4: IceStop CT Product Image

The reference product to represent RAYCHEM IceStop CT self-regulating trace heating cables is 5XLE2-CT. These self-regulating trace heating cables provide roof and gutter de-icing, suitable for all standard materials of gutters and drainpipes. Simple to design. Easy to install as a cut-to-length heater cable. Energy efficient due to self-regulating cable technology, and highly durable over a long, maintenance free, service life.

IceStop CR



Figure 5: IceStop CR Product Image

The reference product to represent the RAYCHEM IceStop CR is 5XLE2-CR. These self-regulating trace heating cables provide roof and gutter de-icing, suitable for all standard materials of gutters and drainpipes. Simple to design. Easy to install as a cut-to-length heater cable. Energy efficient due to self-regulating cable technology, and highly durable over a long, maintenance free, service life.

HWAT



Figure 6: HWAT Product Image

The reference product to represent the RAYCHEM HWAT is 5XLE2-CR. These self-regulating trace heating cables maintain water temperatures in a building's hot water distribution network. Installed underneath the thermal insulation, they automatically compensate for pipe heat losses where they occur and provide an energy efficient solution.

Table 1: Products covered in the EPD

PRODUCT NUMBER	PRODUCT NAME	SUPPLY VOLTAGE	NOMINAL POWER OUTPUT @ 40°F, 120V	NOMINAL POWER OUTPUT @ 40°F, 240V	OUTER JACKET MATERIAL	MAX CIRCUIT LENGTH	MAX CONTINUOUS EXPOSURE TEMPERATURE, POWER OFF
2000002864	3XLE1-CR	120 V	3 W/ft		Modified Polyolefin	368 ft	185 °F
2000002611	5XLE1-CT	120 V	5 W/ft		Fluoropolymer	287 ft	185 °F
2000002607	5XLE1-CR	120 V	5 W/ft		Modified Polyolefin	287 ft	185 °F
2000002613	8XLE1-CT	120 V	8 W/ft		Fluoropolymer	233 ft	185 °F
2000002609	8XLE1-CR	120 V	8 W/ft		Modified Polyolefin	233 ft	185 °F
2000002865	3XLE2-CR	208 – 277 V		3 W/ft	Modified Polyolefin	642 ft	185 °F
2000002612	5XLE2-CT	208 – 277 V		5 W/ft	Fluoropolymer	584 ft	185 °F
2000002608	5XLE2-CR	208 – 277 V		5 W/ft	Modified Polyolefin	584 ft	185 °F
2000002614	8XLE2-CT	208 – 277 V		8 W/ft	Fluoropolymer	452 ft	185 °F
2000002610	8XLE2-CR	208 – 277 V		8 W/ft	Modified Polyolefin	452 ft	185 °F
P000000794	12XLE2-CT	208 – 277 V		12 W/ft	Fluoropolymer	360 ft	185 °F



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

PRODUCT NUMBER	PRODUCT NAME	SUPPLY VOLTAGE	NOMINAL POWER OUTPUT @ 40°F, 120V	NOMINAL POWER OUTPUT @ 40°F, 240V	OUTER MATERIAL	JACKET	MAX CIRCUIT LENGTH	MAX CONTINUOUS EXPOSURE TEMPERATURE, POWER OFF
P00000793	12XLE2-CR	208 – 277 V		12 W/ft	Modified Polyolefin		360 ft	185 °F
P000002113	10XL2-ZH	220 – 240 V		10 W/m @ 5°C, 230V	Low Smoke Zero Halogen		238 m	150°F
P000002114	15XL2-ZH	220 – 240 V		15 W/m @ 5°C, 230V	Low Smoke Zero Halogen		188 m	150°F
P000002115	26XL2-ZH	220 – 240 V		26 W/m @ 5°C, 230V	Low Smoke Zero Halogen		142 m	150°F
P000002116	31XL2-ZH	220 – 240 V		31 W/m @ 5°C, 230V	Low Smoke Zero Halogen		114 m	185 °F
2000002863	HWAT-P1	100 – 120 V			Modified Polyolefin		111 m	185 °F
563465-000	HWAT-R2	208 – 277 V			Modified Polyolefin		150 m	185 °F
900069-000	GM-1XT	120 V		18 W/m @ 0°C, 120 V	Fluoropolymer		41 m	185 °F
832100-000	GM-1X	120 V		18 W/m @ 0°C, 120 V	Modified Polyolefin		41 m	185 °F
092961-000	GM-2XT	208 – 240 V		18 W/m @ 0°C, 230 V	Fluoropolymer		80 m	185 °F
446105-000	GM-2X	208 – 240 V		18 W/m @ 0°C, 230 V	Modified Polyolefin		80 m	185 °F

1.3 Application

XL Trace Edge CT cables are used for pipe freeze protection and flow maintenance of grease waste lines (above and below ground) and fuel lines (above ground). IceStop cables are used for roof and gutter de-icing while HWAT cables are used for hot water temperature maintenance. Heating cables must be used together with an appropriate thermostat to secure against overheating and reduce energy consumption.

1.4 Technical Requirements

Minimum installation temperature: -18°C.

The technical requirements are available on the Chemelex product pages under engineering specifications:

- XL-Trace Edge: <https://www.nvent.com/en-ca/raychem/products/xl-trace-edge-self-regulating-heating-cable-0>
- IceStop: <https://www.nvent.com/en-be/raychem/products/icestop-self-regulating-heating-cable-0>
- HWAT: <https://www.nvent.com/en-be/raychem/products/hwat-self-regulating-heating-cable-0>
- XL-Trace LSZH: <https://www.nvent.com/en-it/raychem/products/xl-trace-low-smoke-zero-halogen-self-regulating-heating-cable-0>



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

1.5 Properties of Declared Product as Delivered

The product is spooled onto an ABS reel and packaged in a cardboard box.

1.6 Material Composition

Table 2: Material composition, per 1 km

MATERIAL	Weight [%]		
	XL Trace Edge CT / IceStop – CT	XL Trace Edge CR / IceStop – CR / HWAT	XL Trace LSZH
COPPER	38	33	30
PLASTIC	43	44	40
MINERALS AND OTHER ADDITIVES	20	23	30
TOTAL	100	100	100

1.7 Manufacturing

The raw materials are blended and extruded as a masterbatch to create our core compound, which is then applied to the conductors to form the cable core. The core goes through a process where a protective layer, called the primary jacket, is added. Next, the cable is treated to strengthen the material. After this, the cable is checked and sent to the braiders to add a grounding layer. It then goes through another process to apply the final protective jacket. The finished cable is labeled with batch details, re-spooled onto reels, and prepared for shipping. Finally, samples are tested to ensure quality before the batch is approved for release.

These products are made using renewable electricity in the form of Renewable Energy Certificates (RECs). Chemelex purchases RECs to cover a portion of the electricity used at the manufacturing facility in Redwood City, United States.

1.8 Packaging

The cable products are shipped spooled on ABS reels that are made from recycled materials and are recyclable.

1.9 Transportation

The cables are initially spooled onto master reels in Redwood City, CA, USA. Customer orders are fulfilled by respooling the required length of cables onto smaller recycled plastic reels. These smaller reels are then shipped to distributors via ground deliveries, who subsequently transport the goods to their final installation sites.

1.10 Product Installation

Installation only requires the use of hand tools. No maintenance is required after installation. A 5% product loss was assumed during installation.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

1.11 Use

The cable provides 5 W/ft @ 40°F if powered. The power on duration depends on the surrounding temperature and whether a controller is used. The typical operating temperature range is 32 to 50°F. Under normal conditions of use, these products require no servicing, no maintenance or additional products for 25 years of RSL. Active use is assumed as 30%, and idle or standby phase is assumed as 70% of the time to align with the normal conditions.

1.12 Reference Service Life

The reference service life (RSL) of the product is 25 years for XL Trace Edge and IceStop (CT and CR), and 40 years for XL Trace LSZH and HWAT.

1.13 Reuse, Recycling, and Energy Recovery

The end-of-life disposal rates (recycling, energy recovery, and disposal) used in the study were based on EN 50639:2019 – Product category rules for life cycle assessments of electronic and electrical products and systems, Table G.4, as shown in Table 3.

Table 3: End-of-life disposal rates

	MATERIAL RECOVERY RATE (%)	ENERGY RECOVERY RATE (%)	DISPOSAL RATE (%)
COPPER	60	0	40
ALUMINUM	70	0	30
STEEL	80	0	20
PLASTIC	20	40	40
ELECTRONICS	50	0	50
MINERALS AND OTHER ADDITIVES	0	0	100

1.14 Disposal

The copper braid and bus wires are recyclable. The remaining materials will go to a landfill.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

2. Life Cycle Assessment Background Information

2.1 Functional Unit

The functional unit is 1 km of cable.

2.2 System Boundary

This EPD is a Cradle-to-Grave study.

2.3 Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44 and EN 15804+A2. The primary data was collected as annual totals for electricity usage and production volume. The utility usage information was divided by the production volume to find a utility consumption per kilometer of cable produced.

2.4 Cut-off Criteria

Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

2.5 Data Sources

Primary data were collected by facility personnel and from utility bills and was used for all manufacturing processes. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from Sphera Managed LCA Content Database 2024.2.

2.6 Data Quality

The geographical scope of the manufacturing portion of all life cycle modules is North America. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered excellent. Time coverage of this data is considered excellent. Primary data provided by the manufacturer is specific to the technology used in manufacturing their product. It is site-specific and considered of good quality. Data necessary to model cradle-to-gate unit processes was sourced from Sphera Managed LCA Content LCI datasets.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

2.7 Period under Review

The period under review is the full calendar year 2023.

2.8 Allocation

General principles of allocation were based on ISO 14040/44. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by mass was adopted. As a default, secondary Sphera Managed LCA datasets use a physical basis for allocation.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

3. Life Cycle Assessment Scenarios

It is assumed that all raw materials are delivered to the manufacturing facility via truck and ship, based on global region. Distances were calculated using the supplier location and the location of manufacturing.

Table 4. Transport to the building site (A4)

TRANSPORTATION DETAILS	UNIT	TRUCK	RAIL	SHIP	AIR
Vehicle type		Heavy Heavy-duty Diesel Truck / 53,333 lb payload - 8b	Rail transport cargo – Diesel, average train, gross tonne weight 1,000t/726t payload capacity	Bulk commodity carrier, 1,000 to 250,000 dwt payload capacity, deep sea	Cargo plane, 65t payload
Fuel efficiency for full vehicle		42 l/100km	1.17E-05 kg / kg	15,134 l/100km	0.00175 kg / lb
Capacity utilization (including empty runs, mass based)	%	85	40	53	66
TRANSPORTATION INFORMATION	UNIT	XL TRACE EDGE CT / IceSTOP CT	XL TRACE EDGE CR / IceSTOP CR / HWAT	XL TRACE LSZH	
Transport distance - truck	km	5.02E+03	3.01E+03	4.65E+02	
Transport distance - ship	km	-	-	2.01E+04	
Gross density of products transported	kg/m ³	n/a			
Weight of products transported (if gross density not reported)	kg/km	1.25E+02	1.23E+02	1.49E+02	
Volume of products transported (if gross density not reported)	m ³	n/a			

Table 5. Installation into the building (A5)

NAME	XL TRACE EDGE CT / IceSTOP CT	XL TRACE EDGE CR / IceSTOP CR / HWAT	XL TRACE LSZH	UNIT
Ancillary materials	0.00E+00	0.00E+00	0.00E+00	kg
Net freshwater consumption specified by water source and fate (amount evaporated, amount disposed to sewer)	0.00E+00	0.00E+00	0.00E+00	m ³
Other resources	0.00E+00	0.00E+00	0.00E+00	kg
Electricity consumption	0.00E+00	0.00E+00	0.00E+00	MJ
Other energy carriers	0.00E+00	0.00E+00	0.00E+00	MJ
Product loss per functional unit	6.25E+00	6.12E+00	7.41E+00	kg
Waste materials at the construction site before waste processing, generated by product installation	6.52E+00	6.39E+00	7.64E+00	kg
Output materials resulting from on-site waste processing (specified by route; e.g. for recycling, energy recovery and/or disposal)	0.00E+00	0.00E+00	0.00E+00	kg
Biogenic carbon contained in packaging	6.97E-02	7.12E-02	5.87E-02	kg C
Direct emissions to ambient air, soil and water	0.00E+00	0.00E+00	0.00E+00	kg
VOC content	0.00E+00	0.00E+00	0.00E+00	µg/m ³



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

Table 6. Reference Service Life

NAME	XL TRACE EDGE CT / ICESTOP CT	XL TRACE EDGE CR / ICESTOP CR	HWAT	XL TRACE LSZH	UNIT
RSL	25	25	40	40	years
Declared product properties (at the gate) and finishes, etc.	The cables are spooled onto ABS reels.				Units as appropriate
Design application parameters (if instructed by the manufacturer), including references to the appropriate practices and application codes)	Refer to the manufacturer's website for more information.				Units as appropriate
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Refer to the manufacturer's website for more information.				Units as appropriate
Outdoor environment	CSA C22.2 No. 130:16 A.2 Weather resistance and A.3 Wet location applications compliant; Maximum exposure temperature of 185°F				
Indoor environment, (if relevant for indoor applications), e.g. temperature, moisture, chemical exposure)	CSA C22.2 No. 130:16 A.2 Weather resistance and A.3 Wet location applications compliant; Maximum exposure temperature of 185°F				
Use conditions, e.g. frequency of use, mechanical exposure.	n/a	n/a	n/a	n/a	n/a
Maintenance, e.g. required frequency, type and quality of replacement components	No replacements are necessary.				

Table 7. Operational energy use (B6)

NAME	XL TRACE EDGE CT / ICESTOP CT	XL TRACE EDGE CR / ICESTOP CR	HWAT	XL TRACE LSZH	UNIT
Lifetime of cable	25	25	40	40	years
Power consumption at 50°F	5	5	5	10	W/ft
Power consumption over lifetime	2.83E+05	2.83E+05	4.53E+05	1.73E+05	MJ/km

Table 8. End of life (C1-C4)

NAME		XL TRACE EDGE CT / ICESTOP CT	XL TRACE EDGE CR / ICESTOP CR / HWAT	XL TRACE LSZH	UNIT
Recovery (specified by type)	Reuse	0.00E+00	0.00E+00	0.00E+00	kg
	Recycling	2.67E+01	2.30E+01	2.54E+01	kg
	Landfill	6.68E+01	6.77E+01	8.73E+01	kg
	Incineration	2.52E+01	2.56E+01	2.82E+01	kg
	Incineration with energy recovery	0.00E+00	0.00E+00	0.00E+00	kg
Disposal (landfill)	Product or material for final deposition	6.68E+01	6.77E+01	8.73E+01	kg
Removals of biogenic carbon (excluding packaging)		0.00E+00	0.00E+00	0.00E+00	kg CO ₂



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

Table 9. Reuse, recovery and/or recycling potentials (D), relevant scenario information

NAME	XL TRACE EDGE CT / IceSTOP CT	XL TRACE EDGE CR / IceSTOP CR / HWAT	XL TRACE EDGE LSZH	UNIT
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	0.00E+00	0.00E+00	0.00E+00	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	2.15E+02	2.18E+02	2.41E+02	MJ
Net energy benefit from material flow declared in C3 for energy recovery	0.00E+00	0.00E+00	0.00E+00	MJ

4. Life Cycle Assessment Results

Table 10. Description of the system boundary modules

	PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				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 supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential	
Cradle to Grave	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Modules B1-B5, B7 and C1 to be reported were all zero following the calculation, hence have not been included in the results tables for an easier reading experience.



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

4.1 Life Cycle Impact Assessment Results: XL-Trace-Edge-CT / IceStop CT

Table 11. EF 3.1 Impact Assessment Results, XL-Trace-Edge-CT and IceStop CT, per 1 km of product

EF 3.1	A1 – A3	A4	A5	B6	C2	C3	C4	D
GWP _{total} [kg CO ₂ eq]	1.17E+03	5.51E+01	3.84E+01	3.62E+04	8.23E+00	6.62E+01	1.54E+00	-1.14E+02
GWP _{fossil} [kg CO ₂ eq]	1.21E+03	5.50E+01	3.24E+00	3.62E+04	8.21E+00	6.62E+01	1.54E+00	-1.14E+02
GWP _{biogenic} [kg CO ₂ eq]	-3.65E+01	5.35E-02	3.51E+01	7.07E+00	7.99E-03	4.55E-04	-6.25E-03	6.81E-01
GWP _{land use} [kg CO ₂ eq]	1.01E+00	3.08E-02	1.76E-03	3.39E+00	4.60E-03	3.14E-03	6.82E-03	-4.36E-01
ODP [kg CFC-11 eq]	4.47E-09	8.13E-12	1.60E-12	2.23E-07	1.21E-12	1.41E-11	4.80E-12	-5.20E-10
AP [kg SO ₂ eq]	6.32E+00	2.55E-01	4.07E-02	4.91E+01	3.81E-02	8.33E-03	9.76E-03	-1.69E+00
EP _{freshwater} [kg N eq]	1.28E-03	2.80E-04	2.56E-04	2.19E-02	4.18E-05	3.42E-06	4.49E-04	-2.01E-04
EP _{marine} [kg N eq]	5.22E-01	1.27E-01	1.81E-02	1.11E+01	1.89E-02	2.30E-03	2.28E-03	-9.14E-02
EP _{terrestrial} [kg N eq]	5.64E+00	1.40E+00	1.91E-01	1.20E+02	2.08E-01	3.85E-02	2.51E-02	-9.47E-01
POCP [kg O ₃ eq]	1.80E+00	2.60E-01	2.68E-02	3.24E+01	3.89E-02	6.63E-03	7.17E-03	-3.27E-01
ADP _{element} [kg Sb-eq]	1.03E+00	7.26E-06	4.12E-07	3.76E-03	1.08E-06	1.46E-07	1.02E-07	-7.71E-02
ADP _{fossil} [MJ, LHV]	1.12E+04	7.28E+02	4.38E+01	6.14E+05	1.09E+02	2.90E+01	2.46E+01	-1.28E+03
WDP [m ³]	2.47E+02	3.29E+00	2.45E-01	8.33E+03	4.92E-01	6.29E+00	1.91E-01	-6.18E+01

Table 12. Resource Use Indicators, XL-Trace-Edge-CT and IceStop CT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PERE [MJ]	2.36E+03	3.22E+01	2.54E+00	1.66E+05	4.81E+00	7.69E+00	3.82E+00	-3.83E+02
PERM [MJ]	0.00E+00							
PERT [MJ]	2.36E+03	3.22E+01	2.54E+00	1.66E+05	4.81E+00	7.69E+00	3.82E+00	-3.83E+02
PENRE [MJ]	9.12E+03	7.28E+02	4.38E+01	6.14E+05	1.09E+02	2.90E+01	2.46E+01	-1.28E+03
PENRM [MJ]	2.06E+03	0.00E+00						
PENRT [MJ]	1.12E+04	7.28E+02	4.38E+01	6.14E+05	1.09E+02	2.90E+01	2.46E+01	-1.28E+03
SM [kg]	1.35E+01	0.00E+00						
FW [m ³]	5.78E+00	1.07E-01	7.57E-03	2.54E+02	1.60E-02	1.50E-01	5.77E-03	-1.09E+00

Table 13. Output Flows and Waste Categories, XL-Trace-Edge-CT and IceStop CT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
HWD [kg]	1.30E-04	9.82E-08	6.74E-09	3.36E-04	1.47E-08	1.66E-08	6.03E-09	-4.29E-07
NHWD [kg]	1.55E+02	7.26E-02	1.96E+01	2.09E+02	1.08E-02	6.02E+00	7.02E+01	5.95E+01
RWD [kg]	2.26E-01	2.20E-03	1.89E-04	6.28E+01	3.28E-04	9.75E-04	3.26E-04	-2.71E-02
CRU [kg]	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	2.81E+01	0.00E+00	0.00E+00



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

MFR [kg]	0.00E+00							
MER [kg]	0.00E+00	1.20E+02						
EEE [MJ]	0.00E+00	2.15E+02						
EET [MJ]	0.00E+00							

Table 14. Additional Indicators, XL-Trace-Edge-CT and IceStop CT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PM [disease incidence]	1.05E-04	2.59E-06	3.44E-07	4.49E-04	3.88E-07	1.02E-07	1.10E-07	-1.37E-05
IRP [kBq U235 eq]	1.94E+01	1.86E-01	1.69E-02	5.19E+03	2.77E-02	1.34E-01	4.35E-02	-2.35E+00
ETP [CTUe]	6.64E+03	5.69E+02	1.39E+02	1.35E+05	8.49E+01	1.95E+01	3.53E+01	-8.44E+02
HTCE [CTUh]	2.65E-07	1.37E-08	1.62E-09	5.00E-06	2.05E-09	9.58E-10	5.77E-10	-5.94E-08
HTnCE [CTUh}	1.77E-05	2.25E-07	3.03E-08	8.25E-05	3.36E-08	7.67E-08	1.45E-08	-1.79E-06
LU [Pt]	3.98E+03	1.41E+02	7.72E+00	6.00E+04	2.11E+01	7.61E+00	4.79E+00	-1.19E+03



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

4.2 Life Cycle Inventory Results: XL-Trace-Edge-CR / IceStop CR

Table 15. EF 3.1 Impact Assessment Results, XL-Trace-Edge-CR and IceStop CR, per 1 km of product

EF 3.1	A1 – A3	A4	A5	B6	C2	C3	C4	D
GWP _{total} [kg CO ₂ eq]	4.13E+02	3.24E+01	3.83E+01	3.62E+04	8.05E+00	6.71E+01	1.55E+00	-1.03E+02
GWP _{fossil} [kg CO ₂ eq]	4.49E+02	3.24E+01	3.23E+00	3.62E+04	8.04E+00	6.71E+01	1.55E+00	-1.03E+02
GWP _{biogenic} [kg CO ₂ eq]	-3.75E+01	3.15E-02	3.51E+01	7.07E+00	7.82E-03	4.61E-04	-6.39E-03	5.85E-01
GWP _{land use} [kg CO ₂ eq]	8.80E-01	1.82E-02	1.76E-03	3.39E+00	4.50E-03	3.18E-03	6.90E-03	-3.76E-01
ODP [kg CFC-11 eq]	3.67E-09	4.79E-12	1.59E-12	2.23E-07	1.19E-12	1.43E-11	4.79E-12	-4.63E-10
AP [kg SO ₂ eq]	6.28E+00	1.50E-01	4.06E-02	4.91E+01	3.73E-02	8.44E-03	9.82E-03	-1.46E+00
EP _{freshwater} [kg N eq]	9.11E-04	1.65E-04	2.56E-04	2.19E-02	4.09E-05	3.47E-06	4.55E-04	-1.75E-04
EP _{marine} [kg N eq]	4.20E-01	7.45E-02	1.80E-02	1.11E+01	1.85E-02	2.33E-03	2.30E-03	-7.98E-02
EP _{terrestrial} [kg N eq]	4.49E+00	8.22E-01	1.90E-01	1.20E+02	2.04E-01	3.90E-02	2.52E-02	-8.27E-01
POCP [kg O ₃ eq]	1.51E+00	1.53E-01	2.67E-02	3.24E+01	3.80E-02	6.72E-03	7.21E-03	-2.85E-01
ADP _{element} [kg Sb-eq]	1.62E+00	4.28E-06	4.11E-07	3.76E-03	1.06E-06	1.48E-07	1.02E-07	-6.64E-02
ADP _{fossil} [MJ, LHV]	8.16E+03	4.29E+02	4.36E+01	6.14E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
WDP [m ³]	1.62E+02	1.94E+00	2.44E-01	8.33E+03	4.81E-01	6.38E+00	1.91E-01	-5.38E+01

Table 16. Resource Use Indicators, XL-Trace-Edge-CR and IceStop CR, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PERE [MJ]	1.90E+03	1.90E+01	2.52E+00	1.66E+05	4.71E+00	7.79E+00	3.82E+00	-3.41E+02
PERM [MJ]	0.00E+00							
PERT [MJ]	1.90E+03	1.90E+01	2.52E+00	1.66E+05	4.71E+00	7.79E+00	3.82E+00	-3.41E+02
PENRE [MJ]	5.18E+03	4.29E+02	4.36E+01	6.14E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
PENRM [MJ]	2.97E+03	0.00E+00						
PENRT [MJ]	8.16E+03	4.29E+02	4.36E+01	6.14E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
SM [kg]	1.35E+01	0.00E+00						
FW [m ³]	3.55E+00	6.31E-02	7.54E-03	2.54E+02	1.57E-02	1.52E-01	5.77E-03	-9.52E-01

Table 17. Output Flows and Waste Categories, XL-Trace-Edge-CR and IceStop CR, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
HWD [kg]	1.42E-04	5.78E-08	6.71E-09	3.36E-04	1.44E-08	1.68E-08	6.01E-09	-3.95E-07
NHWD [kg]	1.15E+02	4.28E-02	1.94E+01	2.09E+02	1.06E-02	6.10E+00	7.11E+01	5.12E+01
RWD [kg]	1.08E-01	1.29E-03	1.88E-04	6.28E+01	3.21E-04	9.88E-04	3.22E-04	-2.75E-02
CRU [kg]	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	2.42E+01	0.00E+00	0.00E+00



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

MFR [kg]	0.00E+00							
MER [kg]	0.00E+00	1.22E+02						
EEE [MJ]	0.00E+00	2.18E+02						
EET [MJ]	0.00E+00							

Table 18. Additional Indicators, XL-Trace-Edge-CR and IceStop CR, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PM [disease incidence]	1.31E-04	1.53E-06	3.43E-07	4.49E-04	3.79E-07	1.03E-07	1.11E-07	-1.18E-05
IRP [kBq U235 eq]	9.69E+00	1.09E-01	1.68E-02	5.19E+03	2.71E-02	1.36E-01	4.30E-02	-2.37E+00
ETP [CTUe]	6.39E+03	3.35E+02	1.39E+02	1.35E+05	8.31E+01	1.97E+01	3.55E+01	-7.38E+02
HTCE [CTUh]	2.37E-07	8.10E-09	1.61E-09	5.00E-06	2.01E-09	9.71E-10	5.79E-10	-5.18E-08
HTnCE [CTUh]	1.62E-05	1.33E-07	3.02E-08	8.25E-05	3.29E-08	7.77E-08	1.45E-08	-1.55E-06
LU [Pt]	3.57E+03	8.33E+01	7.68E+00	6.00E+04	2.07E+01	7.71E+00	4.82E+00	-1.03E+03



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

4.3 Life Cycle Inventory Results: XL Trace LSZH

Table 19. EF 3.1 Impact Assessment Results, XL Trace LSZH, per 1 km of product

EF 3.1	A1 – A3	A4	A5	B6	C2	C3	C4	D
GWP _{total} [kg CO ₂ eq]	4.82E+02	2.49E+01	4.38E+01	1.98E+04	9.84E+00	7.40E+01	1.91E+00	-1.11E+02
GWP _{fossil} [kg CO ₂ eq]	5.17E+02	2.47E+01	3.82E+00	1.95E+04	9.65E+00	7.40E+01	1.91E+00	-1.11E+02
GWP _{biogenic} [kg CO ₂ eq]	-3.62E+01	1.46E-02	4.00E+01	2.74E+02	2.33E-02	5.09E-04	-8.44E-03	3.96E-01
GWP _{land use} [kg CO ₂ eq]	9.42E-01	9.97E-02	4.99E-02	3.83E+00	1.64E-01	3.50E-03	8.82E-03	-4.16E-01
ODP [kg CFC-11 eq]	2.67E-07	3.13E-12	2.71E-12	6.13E-07	1.44E-12	1.57E-11	5.82E-12	-9.00E-10
AP [kg SO ₂ eq]	5.20E+00	4.15E-01	3.62E-02	3.06E+01	1.04E-01	9.30E-03	1.23E-02	-1.61E+00
EP _{freshwater} [kg N eq]	9.95E-04	2.96E-05	1.63E-04	1.22E-01	4.16E-05	3.82E-06	5.02E-04	-2.82E-04
EP _{marine} [kg N eq]	4.51E-01	1.81E-01	2.14E-02	9.55E+00	5.24E-02	2.56E-03	2.90E-03	-9.22E-02
EP _{terrestrial} [kg N eq]	4.82E+00	1.98E+00	1.88E-01	9.83E+01	5.77E-01	4.30E-02	3.19E-02	-9.53E-01
POCP [kg O ₃ eq]	1.55E+00	4.67E-01	4.05E-02	2.30E+01	9.93E-02	7.41E-03	9.08E-03	-3.21E-01
ADP _{element} [kg Sb-eq]	1.61E-01	2.71E-06	2.95E-07	4.12E-03	8.50E-07	1.63E-07	1.26E-07	-7.32E-02
ADP _{fossil} [MJ, LHV]	9.26E+03	3.02E+02	5.23E+01	2.74E+05	1.28E+02	3.24E+01	2.97E+01	-1.24E+03
WDP [m ³]	2.02E+02	1.71E-01	1.60E-01	6.33E+02	1.51E-01	7.03E+00	2.34E-01	-5.56E+01

Table 20. Resource Use Indicators, XL Trace LSZH, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PERE [MJ]	2.06E+03	8.59E+00	5.01E+00	2.94E+05	1.11E+01	8.59E+00	4.67E+00	-5.34E+02
PERM [MJ]	0.00E+00							
PERT [MJ]	2.06E+03	8.59E+00	5.01E+00	2.94E+05	1.11E+01	8.59E+00	4.67E+00	-5.34E+02
PENRE [MJ]	6.01E+03	3.02E+02	5.23E+01	2.74E+05	1.28E+02	3.24E+01	2.97E+01	-1.24E+03
PENRM [MJ]	3.25E+03	0.00E+00						
PENRT [MJ]	9.26E+03	3.02E+02	5.23E+01	2.74E+05	1.28E+02	3.24E+01	2.97E+01	-1.24E+03
SM [kg]	1.35E+01	0.00E+00						
FW [m ³]	4.36E+00	1.03E-02	6.88E-03	9.26E+01	1.23E-02	1.67E-01	7.07E-03	-9.99E-01

Table 21. Output Flows and Waste Categories, XL-Trace-Edge-LSZH, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
HWD [kg]	1.23E-04	3.37E-08	4.41E-09	6.77E-04	4.92E-09	1.85E-08	7.29E-09	-8.01E-07
NHWD [kg]	2.34E+02	2.54E-02	2.02E+01	2.77E+02	2.10E-02	6.72E+00	9.19E+01	5.63E+01
RWD [kg]	1.40E-01	7.71E-04	2.56E-04	2.63E+01	2.34E-04	1.09E-03	3.83E-04	-2.11E-02
CRU [kg]	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	2.67E+01	0.00E+00	0.00E+00



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

MFR [kg]	0.00E+00							
MER [kg]	0.00E+00	1.34E+02						
EEE [MJ]	0.00E+00	2.41E+02						
EET [MJ]	0.00E+00							

Table 22. Additional Indicators, XL Trace LSZH, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PM [disease incidence]	5.52E-05	9.96E-06	3.56E-07	2.41E-04	1.02E-06	1.14E-07	1.40E-07	-1.30E-05
IRP [kBq U235 eq]	1.19E+01	7.27E-02	3.68E-02	2.79E+03	3.39E-02	1.50E-01	5.06E-02	-2.35E+00
ETP [CTUe]	6.38E+03	2.32E+02	5.39E+01	1.02E+05	9.54E+01	2.17E+01	4.07E+01	-8.15E+02
HTCE [CTUh]	2.47E-07	4.04E-09	8.72E-10	5.81E-06	1.94E-09	1.07E-09	6.74E-10	-5.88E-08
HTnCE [CTUh}	1.74E-05	1.06E-07	5.50E-08	8.01E-05	8.67E-08	8.57E-08	1.74E-08	-1.82E-06
LU [Pt]	3.70E+03	3.92E+01	2.02E+01	1.92E+05	6.32E+01	8.50E+00	6.05E+00	-1.26E+03



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

4.4 Life Cycle Inventory Results: HWAT

Table 23. EF 3.1 Impact Assessment Results, HWAT, per 1 km of product

EF 3.1	A1 – A3	A4	A5	B6	C2	C3	C4	D
GWP _{total} [kg CO ₂ eq]	4.13E+02	3.24E+01	3.83E+01	5.80E+04	8.05E+00	6.71E+01	1.55E+00	-1.03E+02
GWP _{fossil} [kg CO ₂ eq]	4.49E+02	3.24E+01	3.23E+00	5.79E+04	8.04E+00	6.71E+01	1.55E+00	-1.03E+02
GWP _{biogenic} [kg CO ₂ eq]	-3.75E+01	3.15E-02	3.51E+01	1.13E+01	7.82E-03	4.61E-04	-6.39E-03	5.85E-01
GWP _{land use} [kg CO ₂ eq]	8.80E-01	1.82E-02	1.76E-03	5.42E+00	4.50E-03	3.18E-03	6.90E-03	-3.76E-01
ODP [kg CFC-11 eq]	3.67E-09	4.79E-12	1.59E-12	3.56E-07	1.19E-12	1.43E-11	4.79E-12	-4.63E-10
AP [kg SO ₂ eq]	6.28E+00	1.50E-01	4.06E-02	7.86E+01	3.73E-02	8.44E-03	9.82E-03	-1.46E+00
EP _{freshwater} [kg N eq]	9.11E-04	1.65E-04	2.56E-04	3.50E-02	4.09E-05	3.47E-06	4.55E-04	-1.75E-04
EP _{marine} [kg N eq]	4.20E-01	7.45E-02	1.80E-02	1.77E+01	1.85E-02	2.33E-03	2.30E-03	-7.98E-02
EP _{terrestrial} [kg N eq]	4.49E+00	8.22E-01	1.90E-01	1.92E+02	2.04E-01	3.90E-02	2.52E-02	-8.27E-01
POCP [kg O ₃ eq]	1.51E+00	1.53E-01	2.67E-02	5.18E+01	3.80E-02	6.72E-03	7.21E-03	-2.85E-01
ADP _{element} [kg Sb-eq]	1.62E+00	4.28E-06	4.11E-07	6.01E-03	1.06E-06	1.48E-07	1.02E-07	-6.64E-02
ADP _{fossil} [MJ, LHV]	8.16E+03	4.29E+02	4.36E+01	9.83E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
WDP [m ³]	1.62E+02	1.94E+00	2.44E-01	1.33E+04	4.81E-01	6.38E+00	1.91E-01	-5.38E+01

Table 24. Resource Use Indicators, HWAT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PERE [MJ]	1.90E+03	1.90E+01	2.52E+00	2.66E+05	4.71E+00	7.79E+00	3.82E+00	-3.41E+02
PERM [MJ]	0.00E+00							
PERT [MJ]	1.90E+03	1.90E+01	2.52E+00	2.66E+05	4.71E+00	7.79E+00	3.82E+00	-3.41E+02
PENRE [MJ]	5.18E+03	4.29E+02	4.36E+01	9.83E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
PENRM [MJ]	2.97E+03	0.00E+00						
PENRT [MJ]	8.16E+03	4.29E+02	4.36E+01	9.83E+05	1.06E+02	2.94E+01	2.45E+01	-1.18E+03
SM [kg]	1.35E+01	0.00E+00						
FW [m ³]	3.55E+00	6.31E-02	7.54E-03	4.07E+02	1.57E-02	1.52E-01	5.77E-03	-9.52E-01

Table 25. Output Flows and Waste Categories, HWAT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
HWD [kg]	1.42E-04	5.78E-08	6.71E-09	5.37E-04	1.44E-08	1.68E-08	6.01E-09	-3.95E-07
NHWD [kg]	1.15E+02	4.28E-02	1.94E+01	3.34E+02	1.06E-02	6.10E+00	7.11E+01	5.12E+01
RWD [kg]	1.08E-01	1.29E-03	1.88E-04	1.01E+02	3.21E-04	9.88E-04	3.22E-04	-2.75E-02
CRU [kg]	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	2.42E+01	0.00E+00	0.00E+00



ENVIRONMENTAL PRODUCT DECLARATION



RAYCHEM XL-Trace-Edge-CT/CR, XL-Trace LSZH, IceStop and HWAT
Self-regulating heating cable

According to ISO 14025
and EN 15804+A2

MFR [kg]	0.00E+00							
MER [kg]	0.00E+00	1.22E+02						
EEE [MJ]	0.00E+00	2.18E+02						
EET [MJ]	0.00E+00							

Table 26. Additional Indicators, HWAT, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PM [disease incidence]	1.31E-04	1.53E-06	3.43E-07	7.19E-04	3.79E-07	1.03E-07	1.11E-07	-1.18E-05
IRP [kBq U235 eq]	9.69E+00	1.09E-01	1.68E-02	8.31E+03	2.71E-02	1.36E-01	4.30E-02	-2.37E+00
ETP [CTUe]	6.39E+03	3.35E+02	1.39E+02	2.16E+05	8.31E+01	1.97E+01	3.55E+01	-7.38E+02
HTCE [CTUh]	2.37E-07	8.10E-09	1.61E-09	8.00E-06	2.01E-09	9.71E-10	5.79E-10	-5.18E-08
HTnCE [CTUh]	1.62E-05	1.33E-07	3.02E-08	1.32E-04	3.29E-08	7.77E-08	1.45E-08	-1.55E-06
LU [Pt]	3.57E+03	8.33E+01	7.68E+00	9.60E+04	2.07E+01	7.71E+00	4.82E+00	-1.03E+03



*Modules B1-B5, B7 and C1 to be reported were all zero following the calculation, hence have not been included in the results tables for an easier reading experience.

5. LCA Interpretation

For the XL-Trace Edge CT and IceStop CT, the use stage (B6) contributes to the majority of impacts across the life cycle stages, and across all indicators, except for ADP - elements, for all the products, as shown in Figures 4 to 6. This is due to the electricity consumed during the use of the product over its lifetime of 25 years.

For the XL-Trace Edge CR, IceStop CR, HWAT and LSZH, the manufacturing stage (A1-A3) contributes to the majority of impacts, which can be attributed to a higher amount of minerals and additives in the product composition.

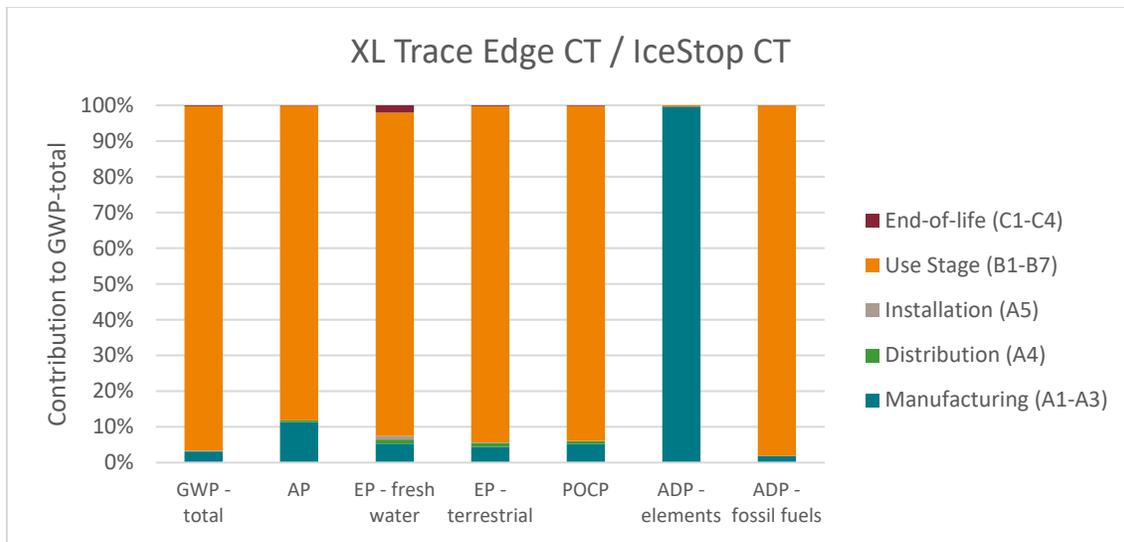


Figure 7: LCA Results for XL-Trace Edge and IceStop (CT), by life cycle stage

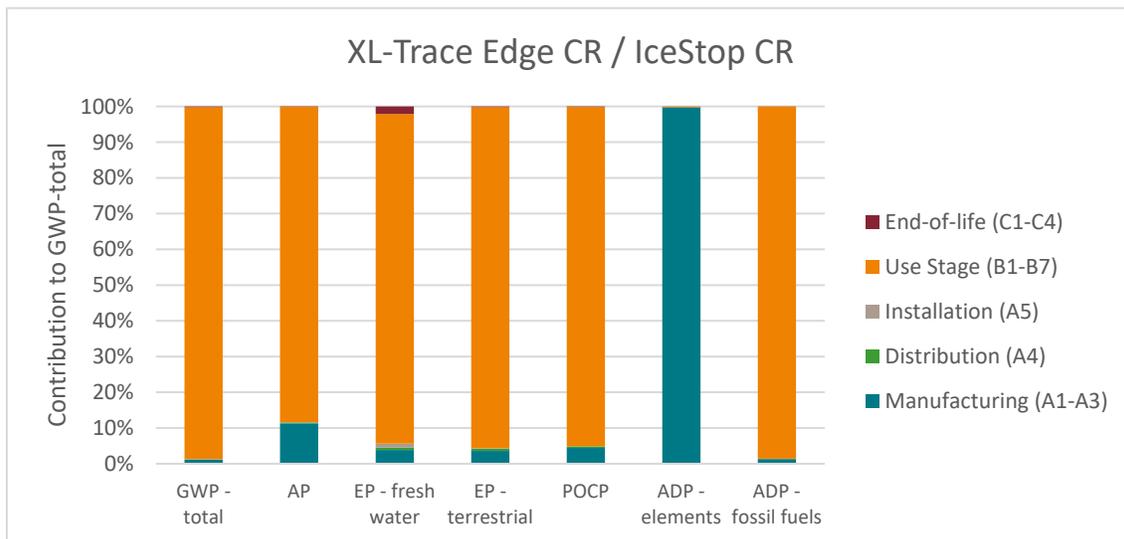


Figure 8: LCA Results for XL-Trace Edge and IceStop (CR), by life cycle stage

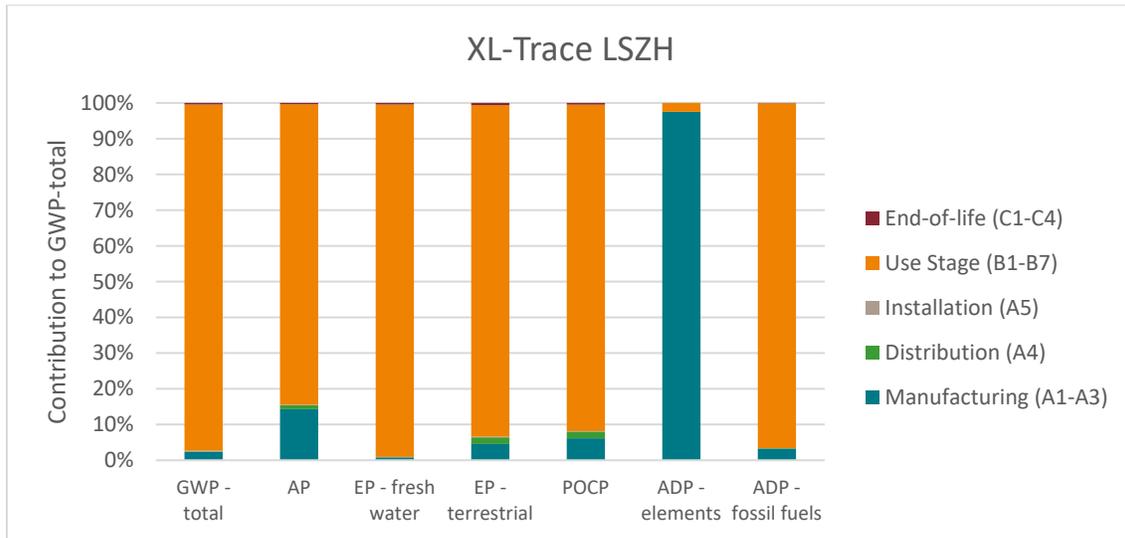


Figure 9: LCA Results for XL-Trace LSZH, by life cycle stage

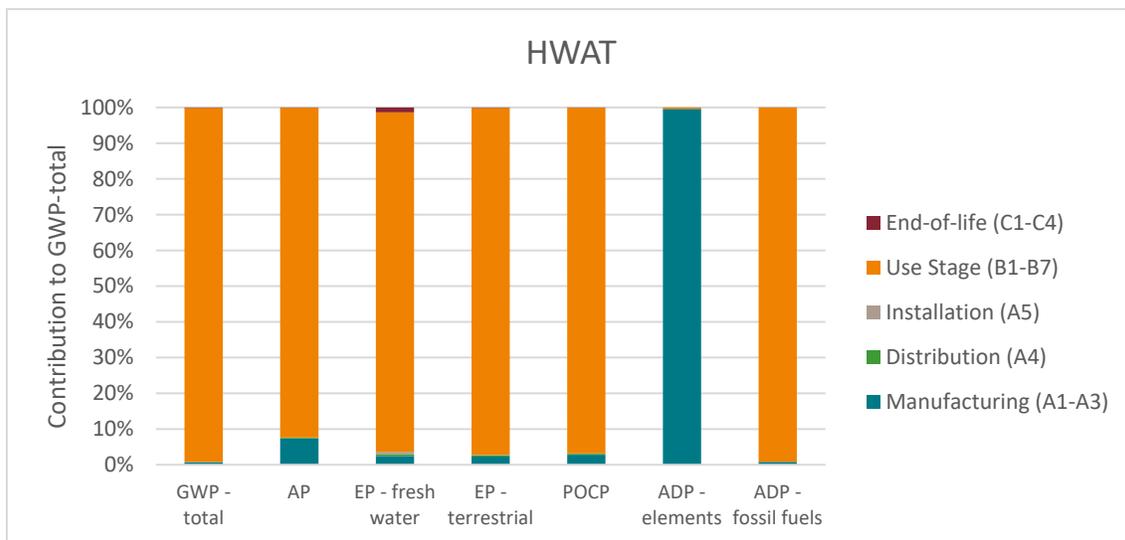


Figure 10: LCA Results for HWAT, by life cycle stage

6. Additional Environmental Information

6.1 Environment and Health During Installation

Further information about the product installation can be found on the Chemelex RAYCHEM website product page:

- XL-Trace Edge: <https://www.nvent.com/en-ca/raychem/products/xl-trace-edge-self-regulating-heating-cable-0>

- IceStop: <https://www.nvent.com/en-be/raychem/products/icestop-self-regulating-heating-cable-0>
- HWAT: <https://www.nvent.com/en-be/raychem/products/hwat-self-regulating-heating-cable-0>
- XL-Trace LSZH: <https://www.nvent.com/en-it/raychem/products/xl-trace-low-smoke-zero-halogen-self-regulating-heating-cable-0>

6.2 Environmental Activities and Certifications

XL Trace LSZH are compliant to the below standards:

- IEC60754-1 Zero Halogen Insulation Material
- IEC61034-2 Low Smoke Emissions
- IEC60068-2-5 and IEC60068-2-9 UV-Resistance

The carbon emissions of the products covered by this EPD associated with their raw materials and manufacturing processes (cradle-to-gate) are offset using RECs that support renewable energy and to help reduce product environmental impacts.

6.3 Further Information

Further information about the product installation can be found on the Chemelex RAYCHEM website product page:

- XL-Trace Edge: <https://www.nvent.com/en-ca/raychem/products/xl-trace-edge-self-regulating-heating-cable-0>
- IceStop: <https://www.nvent.com/en-be/raychem/products/icestop-self-regulating-heating-cable-0>
- HWAT: <https://www.nvent.com/en-be/raychem/products/hwat-self-regulating-heating-cable-0>
- XL-Trace LSZH: <https://www.nvent.com/en-it/raychem/products/xl-trace-low-smoke-zero-halogen-self-regulating-heating-cable-0>

7. References

CEN. (2019). *EN 15804+A2: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products*. European Committee for Standardization.

EN 50639:2019 – Product category rules for life cycle assessments of electronic and electrical products and systems.

ISO. (2006). *ISO 14040/Amd 1:2020: Environmental management - Life cycle assessment - Principles and framework*. Geneva: International Organization for Standardization.

ISO. (2006). *ISO 14044/Amd 1:2017/Amd 2:2020: Environmental Management - Life cycle assessment - Requirements and Guidelines*. Geneva: International Organization for Standardization.

PEP ecopassport: Product Category Rules for Specific Rules for Wires, Cables and Accessories. PSR-0001-ed4-EN-2022 11 16.