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ECO PLATFORM EPD VERIFIED

EPD®

THE INTERNATIONAL EPD® SYSTEM

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Environmental Product Declaration

in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/ AC:2021 for:

3M™ Temflex™ Vinyl Electrical Tape Series 165, 155 and 175

EPD of multiple products, based on a representative product

(The list of products covered by this EPD is available on page 7 of this EPD)

3M Sustainability, Hermeslaan 7, 1831 Diegem, Belgium

Programme: The International EPD® System
Programme operator: EPD International AB
www.environdec.com

Contents

1 Programme Information

EPD operator	EPD International AB (info@environdec.com) Box 210 60, SE-100 31 Stockholm, Sweden.
Product Category Rules (PCRs)	CEN standard EN 15804 serve as the core Product Category Rules (PCR). International norms, standard and PCR: EN 15804:2012+A2:2019 - Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products. PCR 2019:14 Construction products, version 1.3.4 (Multiple CPC codes, date: 2020-09-14, valid until: 2024-12-20).
Generic PCR review conducted by	The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Comparability of EPD	EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same version number up to the first two digits) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.
Third-party verification	Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☐ EPD verification by accredited certification body ■ EPD verification by individual verifier ☐ EPD verification by EPD Process Certification
Verified and approved by	Maggie Wildnauer, WAP Sustainability Consulting. Approved by: The International EPD® System
Data follow-up	Procedure for follow-up of data during EPD validity involves third-pary verifier: ☐ Yes ■ No
Goal of the study	A cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules selected are A4–A5. Life Cycle Assessment (LCA) study has been conducted in accordance with ISO 14040:2006 and ISO 14044:2006 and the requirements stated in the General Programme Instructions by The International EPD® System, and abovementioned PCRs. The goal of the LCA study is to assess the potential environmental impact for 3M™ Temflex™ Vinyl Electrical Tape 165, 155 and 175 series, specifically available in this EPD.
Disclaimers	Life cycle assessment accountability: Yara Hammoud, 3M. The owner of the EPD is 3M and has the sole ownership, liability and responsibility for the EPD. All values provided in this EPD are a direct result from the use of characterisation factors and calculation rules as defined in the LCA for Experts™ software from sphera™, and the requirements of the product category rules as mentioned above. For more information about this EPD or its contents, contact Detlef Tibax, EPD publisher, at dtibax@mmm.com. Address: 3M Belgium BV, Hermeslaan 7, 1831 Machelen, Belgium.

2 Company Information

Over the last century 3M has grown into a global powerhouse, developing products that improve lives around the world. It began life as a small-scale mining venture in Northern Minnesota back in 1902, then named Minnesota Mining and Manufacturing Company.

3M's success and longevity weren't apparent from the start. Our five founders were looking for corundum, a mineral ideal for making sandpaper and grinding wheels. It turns out, what they thought was corundum was really a low-grade mineral. Despite the early setback they persevered with their operation, gained the trust of important investors and built up sales, giving birth to the spirit of innovation and collaboration that still shapes 3M today.

Over the following decades scientific, technical and marketing innovations produced success upon success, eventually making 3M a constant name on the Fortune 500 list. Today, more than 55,000 3M products are used in homes, businesses, schools, hospitals and other industries.

With operations employing almost 85,000 employees in 80 different countries, and products sold in nearly 200 countries, 3M is a diverse technology company with global sales in excess of $32 billion. 3M has invested $1.8 billion in research and development to drive innovation. The company now has over 133,500 patents in its name.

3M brings solutions to different markets through four separate business groups, each one represents a core area of the company, with ideas and innovations shared between them. This collaborative approach has led to unexpected solutions by enabling designers to see problems from different perspectives.

Safety & Industrial is our biggest earning business group, with a vast range of products used in industrial production, electrical and safety markets. This includes automotive, bonding and protecting surfaces in construction, securing things together and developing lightweight parts to help reduce weight and increase efficiency, whilst protecting people at work, and enhancing visual and design communication.

Transportation & Electronics provides solutions for improving road safety and creating a more connected world, such as developing global telecommunications and power grids, restoring underground pipelines and locating key underground infrastructure. It's known for interacting with customers to create innovative solutions and providing opportunities for energy conservation and generation.

Healthcare provides innovations which are pioneering medical advancements in hospitals, emergency rooms and dental clinics around the world. It features a range of products designed for preventing infections and protecting wounds, improving oral health and ensuring food quality.

And finally, Consumer business group features many of our most familiar products and brands, including Post-It®, Scotch® and Command™. It develops solutions to make life easier and more productive at home and in the office, such as simplifying communication, cleaning and protecting surfaces, making home improvement easy and inspiring hobbies, crafts and creativity.[1]

[1] Company information mentioned in this section are included in 3M's 2024 Global Impact report that is referenced in section 6.5.

At 3M, we innovate with purpose. We empower individuals to address issues they want to impact, and collaborate with our customers and communities to take on shared global challenges – bringing value to both our business and society as a whole. We call this purpose-driven business. It's an exciting path forward because we know that with creativity, collaboration and a shared sense of purpose, no problem is unsolvable. Working together, we can improve every life.

We look at sustainability in terms of shared global needs and the future of our business. As the population grows, particularly in emerging economies, challenges like energy availability and security, raw material scarcity, human health and safety, education, and development must be addressed to ensure people across the world can live healthy, fulfilling lives. Every day, 3M innovations aim to tackle some of the world's most pressing areas of concern: raw materials, water, energy and climate, health and safety, education and development.

Setting goals to drive sustainability progress is nothing new at 3M. We have been setting global environmental goals since 1990. A strong part of our company history, these goals have helped dramatically reduce our own environmental footprint and established us as a leader in environmental stewardship.

3M's iconic Pollution Prevention Pays (3P) programme has been running since 1975. The programme has prevented more than 2.88 million short tons of pollutants and saved over $2.37 billion based on aggregated data from the first year of each 3P project.

Since 2021, we achieved a 69.8 million pound reduction in the use of virgin fossil-based plastic in our packaging and products toward our goal of 125 million pounds by 2025.

We've incorporated recycled and bio-based materials and reduced plastic use in products and packaging such as tapes and dispensers, sponges, packaging, workspace solutions, insulation, optical films, floor pads, sorbents, and more.

Over the last two decades, while 3M's revenues have doubled, we have reduced our greenhouse gas emissions by 78.8 %, and moved 45.9 % of our manufacturing sites to zero landfill waste. At the same time, we've intensified our focus on creating a range of innovative solutions that help our customers be more sustainable — from glass bubbles that enable lower vehicle weight and improved fuel economy, to films that make homes, businesses, and electronics more energy efficient. Since 2015, this is a total avoidance of 135 million metric tons of CO_2 equivalent emissions for our customers. This estimation covers only a portion of our product portfolio.[2]

Another initiative led by 3M is the Sustainability Value Commitment, which ensures that every new product made by 3M from 2019 onwards is manufactured with sustainability in mind. It commits our product developers to focus on reusability, recyclability, energy, waste, water savings, responsible sourcing, and/or renewable materials appropriate to the specific product, from the beginning to the end of each product's lifecycle.

Since February 2014, 3M has become a signatory of the United Nations Global Compact. While 3M has always acted in accordance with the core values represented by the Compact, we are proud to formalise our commitment to its 10 principles in the areas of human rights, labour, environmental and anti-corruption and to grow our partnership with the organisation.

[2] Company information mentioned in this section are included in 3M's 2024 Global Impact report that is referenced in section 6.5.

3 Product Information

3.1 Product description

The following products are covered by this EPD:

Product name	3M ID
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black	7100169254
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Blue	7100169429
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Brown	7100169191
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Green	7100169430
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Grey	7100169192
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Orange	7100169433
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Purple	7100169434
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Red	7100169492
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m White	7100169491
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Yellow	7100169490
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 20m Black	7100184800
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 20m Green	7100184803
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 20m Grey	7100184804
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 20m Red	7100184807
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 20m White	7100184808
3M™ Temflex™ Vinyl Electrical Tape 155 19mm x 20m Black	7100184744
3M™ Temflex™ Vinyl Electrical Tape 155 19mm x 20m Brown	7100184746
3M™ Temflex™ Vinyl Electrical Tape 155 19mm x 20m Red	7100184741
3M™ Temflex™ Vinyl Electrical Tape 155 19mm x 20m White	7100184742
3M™ Temflex™ Vinyl Electrical Tape 175 19mm x 20m Black	7100237741
3M™ Temflex™ Vinyl Electrical Tape 175 19mm x 18m Black	7100188506
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 9m Black	7100216141
3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 25m Black	7100184810
3M™ Temflex™ Vinyl Electrical Tape 165 15mm x 10m Black	7100184723
3M™ Temflex™ Vinyl Electrical Tape 165 15mm x 10m White	7100184731

The 3M™ Temflex™ Vinyl Electrical Tapes 165, 155 and 175 are multi-purpose, general use electrical insulating tapes. They have excellent resistance to abrasion, moisture, alkalies, acid, copper corrosion and varying weather conditions. The tape is composed of an elastic vinyl (PVC) film backing and coated on one side with a non-corrosive, solvent free pressure-sensitive adhesive. The PVC film backing is designed to have the strength allowing it to be wrapped around cables and connections with firm tension, yielding excellent seal and protection. The backing and adhesive are designed to hold up in everyday conditions when conducting simple low voltage insulation, wire marking, cable bundling and pulling. These tapes can be used in industrial, commercial, and residential environments, for indoor and weather protected outdoor operations, among other various applications.

3M™ Temflex™ Vinyl Electrical Tapes 165 series have a nominal thickness of 0.152 mm (6-mil), the 155 series have a nominal thickness of 0.13 mm (5-mil), and the 175 series have a nominal thickness of 0.178 mm (7-mil). 3M™ Temflex™ Vinyl Electrical Tapes 165 are available in a variety of different colors.

The tapes are UL and CSA listed, VDE certified and RoHS compliant. They are classified under code CPC 36920 – “Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics” as described in the United Nations Central Product Classification (CPC) System.

The representative product used in the EPD is the 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black, as it has the highest production and sales volume among the products in scope over the studied period, and is the product with the highest sales expectations globally. Since the products in scope belong to the same product family, have the same manufacturing process steps and are produced at the same site, it is deemed suitable to group the products under one EPD.

3.2 Content declaration

3.2.1 Product composition

3M™ Temflex™ Vinyl Electrical Tapes 165, 155 and 175 covered by this EPD do not contain Substances of Very High Concern (SVHC) as defined by article 59 (10) of Regulation (CE) n° 1907/2006 (dated 2024-01-23), also known as the REACH candidate list, at a concentration at or above 0.1% in weight.

The tables below report the 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black product composition and its packaging composition, respectively. Weight in kg and % is presented per the declared unit. The tables also present the biogenic carbon content (as kg of C[3] per declared unit, and as weight %).

Product components	Weight [kg]	Weight [wt%]	Post-consumer recycled material [wt%]	Biogenic material, weight % and kg C/declared unit
Adhesive layer	2.68E-02	13.6%	0%	0% resp. 0
PVC backing	1.69E-01	86.4%	0%	8.3% resp. 1.63E-02
Total	**1.96E-01**	**100%**	**0%**	8.3% resp. 1.63E-02

Packaging components	Weight [kg]	Weight vs the product [wt%]	Post-consumer recycled material [wt%]	Weight biogenic carbon, kg C/declared unit
Cardboard	2.17E-02	9.4%	0%	8.70E-03
LDPE	2.25E-03	1.0%	0%	0.00E+00
Paper	3.05E-03	1.3%	0%	1.22E-03
Wood	6.94E-03	3.0%	0%	3.47E-03
Total	**3.40E-02**	**14.8%**	**0%**	**1.34E-02**

The tables below report the variation of the composition and biogenic carbon content among the products in scope of this EPD, for the products and their packaging.

Product components	Weight [kg]	Weight [wt%]	Biogenic material, weight % and kg C/declared unit
Adhesive layer	2.04E-02 - 3.01E-02	10.3% - 15.7%	0% resp. 0
PVC backing	1.38E-01 - 2.00E-01	84.3% - 89.7%	8.1% - 8.7% resp. 1.33E-02 - 1.93E-02
Total	**1.63E-01 - 2.28E-01**	**100%**	8.1% - 8.7% resp. 1.33E-02 - 1.93E-02

Packaging components	Weight [kg]	Weight vs the product [wt%]	Weight biogenic carbon, kg C/declared unit
Cardboard	2.08E-02 - 4.65E-02	8.3% - 18.4%	8.33E-03 - 1.86E-02
LDPE	1.43E-03 - 4.49E-03	0.6% - 1.7%	0.00E+00
Paper	2.13E-03 - 4.67E-03	1.0% - 1.8%	8.52E-04 - 1.87E-03
Wood	4.05E-03 - 1.06E-02	1.8% - 4.2%	2.02E-03 - 5.31E-03
Total	**2.99E-02 - 6.41E-02**	**12.6% - 25.4%**	**1.19E-02 - 2.54E-02**

[3] 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2

3.2.2 Recycling

3M has been recycling since 1975 when we established the Corporate Environmental Policy and adopted a voluntary Pollution Prevention Pays (3P) program based on the then-novel idea that pollution prevention is more environmentally effective, technically sound and economically advantageous than pollution control.

Today 3M practices responsible waste management at every company location to reduce the amount of waste materials generated, and deal with hazardous waste in the most efficient way possible.

Our 3M Waste Management Standard applies to all 3M sites and provides a framework for managing all waste types from the time of generation until reused, recycled, treated, or disposed. The standard sets a baseline for several core waste program elements and encourages waste minimization and recycling whenever possible.

3M strives to design products with recycled or renewable materials, using only one material when possible, to facilitate recycling.

During the manufacturing of the 3M™ Temflex™ tapes, some materials are recycled:

- PVC waste
- Converting process waste

During the end-of-life, statistical data is used to model the disposal of the product and packaging since no specific data is available. This data represents the main types of disposal (incineration and landfill) and recycling of the waste with the corresponding quantities (see sections 4.2.2 and 4.2.4 of this EPD for more details).

3.3 Manufacturing

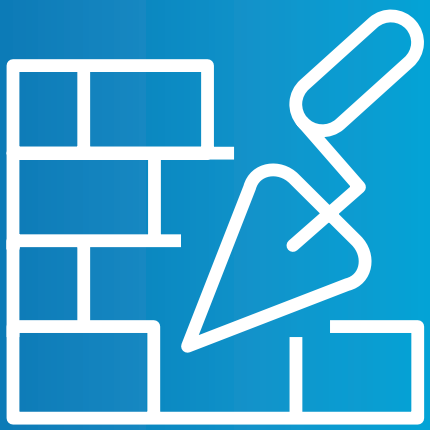
At 3M, we approach our sustainability goals and strategy by delivering excellence in operations and across our supply chain, innovating to improve lives with our customers and partners, and enriching the communities where we live and work. Our ambition, working collaboratively, is to realise a world where every life is improved, where natural resources are reliably available, where people everywhere have access to education and opportunity, and where communities are safe, healthy, connected and thriving.

When it comes to fabrication, assembly or processing, 3M understand that increasing efficiency is vital for our selling partners and their bottom line. From ultra-strong abrasives that keep processes running smoothly to futuristic materials that can literally lighten your workload, we provide innovative solutions that help businesses and employees improve efficiency.

3M's International Environmental Operations group enhances and integrates our global environmental management system which guarantees compliance with environmental regulations and prepares facilities to meet the requirements of international standards.

3M™ Temflex™ Vinyl Electrical Tapes 165, 155 and 175 covered by this EPD are manufactured by 3M's Electrical Markets Division (EMD), a division of the Safety and Industrial Business Group (SIBG) within the 3M Company. The 3M manufacturing site for all the products covered by this EPD, that is part of the supply chain is: 3M Wrocław (Poland), operating under ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 certifications.

Depending on its application, the product covered by this EPD can be considered a construction product as per the definition in European Regulation (EU) No 305/2011 laying down harmonised conditions for the marketing of construction products. This regulation defines construction products as "any product or kit which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof and the performance of which has an effect on the performance of the construction works with respect to the basic requirements for construction works". Consequently, PCR 2019:14 v 1.3.4 and EN 15804:2012+A2:2019 apply. It is important to note that due to the absence of so-called harmonised technical specifications, the requirements for CE marking and declaration of performance as described in the same regulation do not apply.



4 Life Cycle Assessment

4.1 Declared unit

The declared unit in this EPD is 1 m^2 of tape including its packaging. For the representative product 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black, the conversion factor from m^2 to kg is 0.23, and the total reference flow is 0.23 kg (0.196 kg tape/m^2, 0.034 kg packaging/m^2).

4.2 System boundaries

The LCA study supporting this EPD is a cradle-to-gate with options, modules C1-C4, module D and optional modules (A1–A3 + C + D and additional modules). The additional modules selected are A4–A5. The included modules and life cycle stages are listed in the table below.

In addition to the declared modules, the table below lists the geographical location per module, representing the geographical coverage for all the products in scope of this study. The table also lists the share of the GWP-GHG indicator results in A1-A3 coming from specific LCI data. This LCI data is defined as measured data, representative data or data that can be proven to be conservative. All other data is regarded as proxy data and identified as estimates during data collection.

The table also reports the variation of the GWP-GHG results among products in scope, compared to the declared results, for the modules A1-A3.

Stage	Product stage			Construc-tion stage		Use stage							End-of-life stage				Resource recovery stage
	Raw materials	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / Demolition	Transport	Waste processing	Disposal	Reuse - recovery - recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	(1)	(1)	PL	(2)	(2)	-	-	-	-	-	-	-	(2)	(2)	(2)	(2)	(3)
Specific data	12%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation products[4]	64%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation sites[5]	0%[6]			-		-	-	-	-	-	-	-	-	-	-	-	-

X = declared module; ND = not declared
A1 = Upstream module; A2-A3 = Core module; A4-C4 = Downstream module; D = benefits and loads beyond the system boundary

(1) US, EU, UK, AS
(2) USAC, EU, LATAM
(3) EU, US
(4) Relative difference of GWP-GHG in A1-A3 between the declared results of the representative product and the results for the underlying products
(5) Relative difference of GWP-GHG in A1-A3 between the declared results of the representative product and the results for the underlying sites
(6) Only one manufacturing site for all products is included in this EPD.

4.2.1 Product stage (A1 - A3)

Raw material supply includes the acquisition of raw materials from nature to create usable intermediates, as well as the packaging used to ship the raw materials (A1). Finished product packaging materials are also regarded as part of the RM supply (A1). All raw materials are transported from the source to the 3M manufacturing site by truck and/or boat (A2). A2 also includes the transportation of manufacturing waste from the manufacturing site to the waste disposal sites. Most of the time, raw materials need to be packed for transportation. Loading and unloading of raw materials are not included in the study.

Production also includes all steps carried out at 3M manufacturing sites to produce the finished product, including ancillaries, packaging materials used and waste produced (A3), but excluding process utilities (e.g. electricity, steam, etc.) which are part of A1. The environmental profile of these energy carriers is modeled for local conditions. Machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

4.2.2 Construction process stage (A4 - A5)

The construction process stage includes transportation of the finished product to the construction site, and its installation in the construction works.

For transportation (A4), the scope of the study is Global, and as such one of the following distribution scenarios is used for each product in scope, based on each product's highest sales volume region:

a. assumption of a distribution distance of 2500 km by EU truck (LC[4] 22,000 kg, FCFC[5] 55.7 l diesel/100 km, CU[6] 61%) from 3M Wrocław to Rotterdam port, 9262 km by boat (LC 43,000,000 kg, FCFC 10,060.6 l heavy fuel oil/100 km, CU 70%) from Rotterdam port to Houston port, 2500 km by US truck (LC 20,412 kg, FCFC 49.6 l diesel/100 km, CU 78%) from Houston port to distribution center in Illinois, and 2500 km by US truck from distribution center in Illinois to any USAC customer.

b. assumption of a distribution distance of 2500 km by EU truck from 3M Wrocław to Rotterdam port, 9262 km by boat from Rotterdam port to Houston port, 2500 km by US truck from Houston port to distribution center in Illinois, 5000 km by US truck from distribution center in Illinois to any LATAM customer (2500 km assumed within the US + 2500 km assumed within LATAM region).

c. assumption of a distribution distance of 905 km by EU truck from 3M Wrocław to Juechen distribution center, and 2500 km by EU truck from Juechen distribution center to any EU customer excluding Germany.

d. assumption of a distribution distance of 905 km by EU truck from 3M Wrocław to Juechen distribution center, and 1000 km by EU truck from Juechen distribution center to any customer in Germany.

For the representative product 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black, the distribution scenario (a) is applied.

The distribution stage also includes waste treatment of the distribution packaging materials (pallet, shrink wrap, angleboard), including their transportation to the disposal/recovery site (A4), with a distance of 100 km assumed. The pallets are re-used. As for the shrink wrap and the angleboard, no specific data is available, so EPA and Eurostat data are used to model the disposal of the materials. This data represents the main types of disposal (incineration and landfill) and recycling of the waste with the corresponding quantities. One of the following disposal scenarios is used for each product in scope, based on the region where each product is disposed:

a. if the distribution packaging is disposed in the USAC or LATAM regions, 25.6% of paper/cardboard waste is sent to landfill, 6.2% to incineration and 68.2% to recycling. 75.6% of plastic waste is sent to landfill, 15.8% to incineration and 8.6% to recycling.

b. if the distribution packaging is disposed in the EU region, 0.2% of paper/cardboard waste is sent to landfill, 1.5% to incineration and 98.3% to recycling. 5.2% of plastic waste is sent to landfill, 23.5% to incineration and 71.3% to recycling.

Module A5 includes the disposal of product packaging materials (core, wafer, bundle, shrink films, slotted container, label), with their transportation to the disposal/recovery site, and a distance of 100 km is assumed. The abovementioned disposal scenarios are used to model the product packaging materials disposal as no specific data is available.

[4] LC = load capacity (kg)
[5] FCFC = full capacity fuel consumption (l/100 km)
[6] CU = capacity utilisation, including empty returns (%)

4.2.3 Use stage (B1 - B7)

The use phase is considered negligible in terms of environmental impacts as this tape is a passive product, assuming no energy consumption or release of substances during use. Thus, the use stage is excluded from the impact results shown in section 5 of this EPD.

4.2.4 End-of-life stage (C1 - C4)

Deconstruction stage (C1) is considered negligible in terms of environmental impacts assuming no energy consumption or release of substances during use. End-of-life treatment is considering transportation of the product to a disposal site (C2), a distance of 100 km is assumed.

Modules C3 and C4 represent the disposal of the product (i.e., the Temflex tape without the packaging) at its end of life. Module C3 represents the waste processing for recovery and recycling. Module C4 includes waste sent to landfill. Since specific data on the disposal of the products is not available and can highly vary across markets, EPA and Eurostat data are also used to model the disposal of the Temflex tapes, based on the region each product is assumed to be disposed in. The Temflex tape is considered to be disposed as a plastic since PVC contributes to almost 45% of its composition, while the rest also includes various types of resins/plastics. Thus, one of the following disposal scenarios is used for each product in scope, based on the region where each product is disposed:

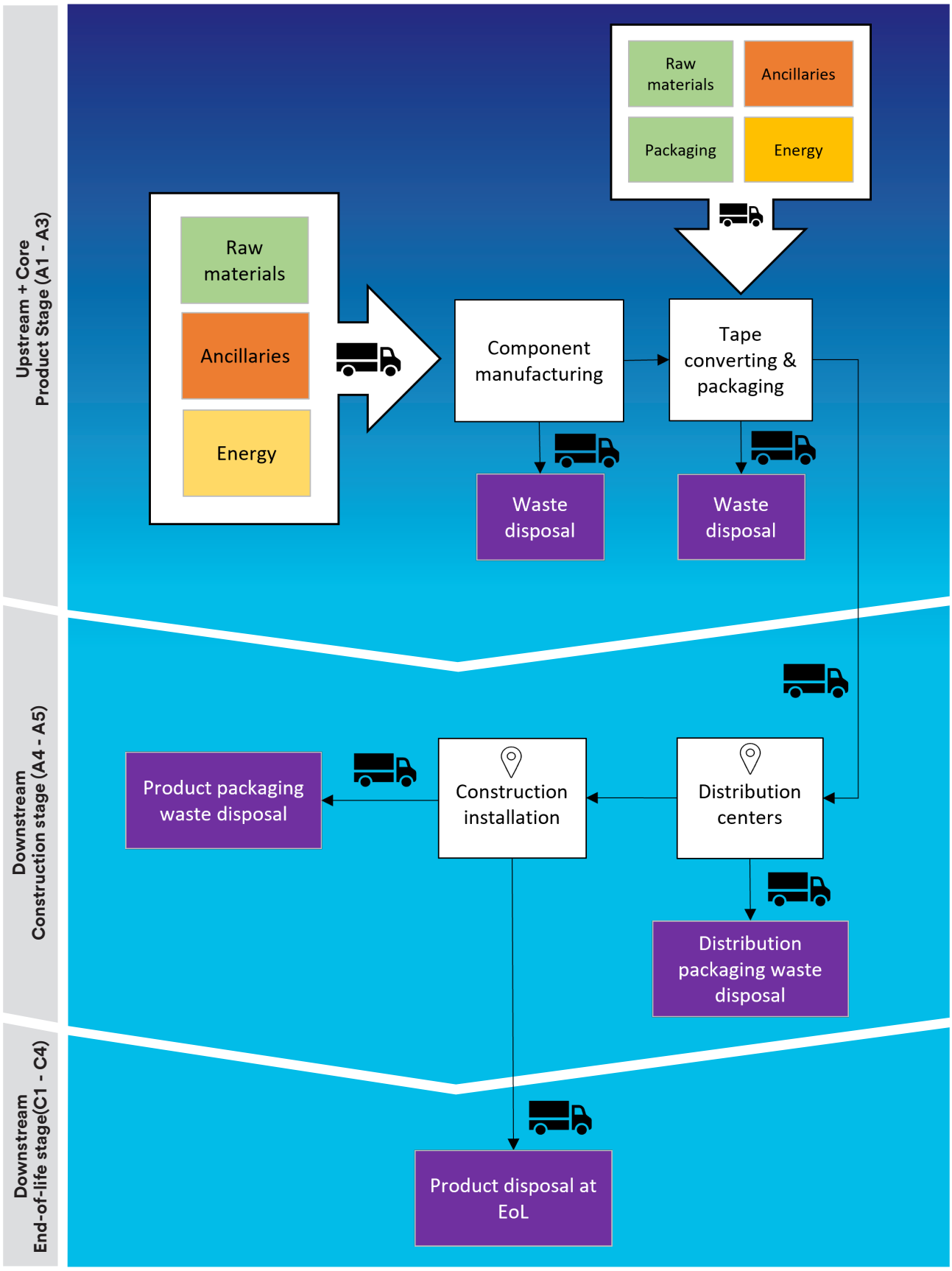
a. if the product is disposed in the USAC or LATAM regions, 75.6% of plastic waste is sent to landfill, 15.8% to incineration and 8.6% to recycling.

b. if the product is disposed in the EU region, 5.2% of plastic waste is sent to landfill, 23.5% to incineration and 71.3% to recycling.

4.2.5 Resource recovery stage (D)

Module D applies to the next product system and calculates the environmental net benefits of the recycling, recovery or reuse of materials. It contains credits from the recycling of production, product and packaging waste as well as the credits from the heat and electricity generated by incineration with energy recovery in modules A-C. The impacts of the recycling process are considered when the different waste fractions are collected and recycled for use in substitution of virgin raw aggregates (including for some materials a devaluation factor). Hazardous waste is excluded from module D as it cannot cease being waste.

4.2.6 Flow diagram



4.3 Data collection and quality

Specific data was gathered by 3M for the core processes and are based on 2022-2023 production volumes and extrapolations of measurements on specific machines.

Generic data for upstream and downstream processes are used as available in the LCA for Experts™ (LCA FE) software and databases and are representative of the years 2019-2022 (apart from one dataset which is from 2012).

Both specific and generic data are modelled to be specific to the technologies or technology mixes under analysis. Where technology-specific data are unavailable, proxy data are used. The technological representativeness is considered to be good.

All data are collected specific to the countries or regions under analysis. Where country or region specific data are unavailable, proxy data are used. The geographical representativeness is considered to be good.

Data quality analysis is performed based on the EU Product Environmental Footprint (PEF) Guidance. The overall data quality is at least very good for 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black, and at least good for the rest of the products in scope. Consequently, the results of each indicator can be used appropriately in this EPD.

4.4 Calculation procedure

The LCA model was created using the LCA FE software (version 10.7.1.28, v2023.2) system for life cycle engineering. The modelling process used both primary data collected from the actual manufacturing process, and secondary data available in the LCA FE databases including industry-average data, data available from literature studies and data available from published databases.

All relevant process steps for each scenario are considered and modelled to represent each specific situation. The process chain is considered sufficiently complete with regard to the goal and scope of this study. Cross-checks concerning the plausibility of mass and energy flows are carried out on the data received. Similar checks are made on the software model developed during the study. To ensure consistency, all primary data are collected with the same level of detail, while all background data are selected from the LCA FE databases.

4.4.1 Key assumptions

Key assumptions made in this study relate to (1) waste data for certain manufacturing process steps, which is modelled based on main material components in the waste output, (2) colored pigments in the different products, that have an unknown exact composition, and (3) using statistical data at EoL for the main product material type in the absence of specific disposal information.

Next to key assumptions, some general assumptions are included on different levels in the model:

- When no specific data for the raw material is available it is modelled based on the material content information in combination with generic production data.
- When specific raw material packaging data is not provided, a default packaging is assumed based on professional judgement and the type of raw material.
- Distances between raw material suppliers and 3M sites on the same continent are assumed to be 2500 km (or 1553 miles) whilst a distance of 1000 km (or 621 miles) is taken when located in the same country.
- 100 km (or 62.1 miles) transportation distance is assumed for the disposal of materials.
- When the waste disposal method is unknown, Eurostat data for EU-28 countries and waste data from EPA for US are used in order to model the disposal in the downstream processes.

4.4.2 Cut-off criteria

All available data from the product production processes are considered, i.e. all pre-products/raw materials used, packaging material and relevant energy flows using best available LCI datasets (including data contributing <1% to mass or energy). Transport processes for raw material packaging as well as internal transport in the facilities is excluded. Production and/or energy consumption of machines, facilities and infrastructure/capital goods required during manufacture are excluded. In addition, the use of energy and water of any nonstrictly manufacturing processes is excluded from the study.

This study is based on an LCA that applies the simple cut-off method (also known as the 100:0 method), meaning that energy credits generated during any waste disposal are excluded and a worst-case approach is applied. For waste sent to recycling, a cut-off is applied before the recycling facility gate (i.e., Polluter Pays Principle).

4.4.3 Allocation

For energy consumption during manufacturing, allocation by workcenter is applied depending on the manufacturing process considered. No co-products are created in the production processes.

5 Environmental Performance

The environmental parameters are declared for upstream, core and downstream processes[7]. The overall impact of the product is divided into potential environmental impacts, use of resources and other indicators. All environmental impacts are reported per declared unit.

5.1 Core environmental impacts

The reported environmental impacts, as required per PCR 2019:14 v1.3.4 result from characterisation models applied to the life cycle stages considered in the study. Total pollutant emissions from the operations included in the system boundaries are reported as potential environmental impacts, using the environmental impact indicators of EN15804:2012+A2:2019/AC:2021 and characterisation factors (CFs) based on EF 3.1 (EC-JRC, Feb. 2023). The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

The results of modules A1-A3 are declared in aggregated form as required per PCR 2019:14 v1.3.4.

The below results correspond to the representative product 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black, which has the highest production volume among the products in scope, over the studied period.

Data refer to the declared unit.

	Mandatory indicators according to EN 15804+A2							
	Product	Construction		End of life				Other
	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total [kg CO2 eq.]	8.93E-01	1.70E-01	7.14E-02	0.00E+00	2.07E-03	1.36E-01	3.15E-03	-9.77E-02
GWP-fossil [kg CO2 eq.]	1.02E+00	1.58E-01	1.34E-03	0.00E+00	2.07E-03	6.81E-02	3.14E-03	-9.75E-02
GWP-biogenic(1) (2) [kg CO_2 eq]	-1.32E-01	1.13E-02	7.00E-02	0.00E+00	7.88E-07	6.83E-02	6.33E-06	-1.82E-04
GWP-luluc [kg CO2 eq.]	3.18E-03	5.59E-04	4.04E-07	0.00E+00	2.35E-06	2.09E-06	1.18E-06	1.51E-05
ODP [kg CFC-11 eq.]	3.60E-12	1.86E-14	5.54E-16	0.00E+00	2.54E-16	1.03E-14	7.25E-15	-4.39E-13
AP [Mole of H+ eq.]	6.47E-03	9.61E-04	1.33E-05	0.00E+00	5.87E-06	1.41E-05	1.92E-05	-1.38E-04
EP-freshwater [kg P eq.	3.08E-05	6.15E-07	1.42E-07	0.00E+00	1.02E-08	3.92E-09	3.86E-06	1.40E-07
EP-marine [kg N eq.]	1.31E-03	4.42E-04	2.94E-06	0.00E+00	2.88E-06	3.50E-06	4.80E-06	-3.44E-05
EP-terrestrial [Mole of N eq.]	1.37E-02	4.87E-03	5.93E-05	0.00E+00	3.18E-05	6.22E-05	5.25E-05	-3.89E-04
POCP [kg NMVOC eq.]	3.46E-03	1.02E-03	7.21E-06	0.00E+00	5.65E-06	9.55E-06	1.46E-05	-1.58E-04
ADP-min&met(3) [kg Sb eq.]	8.79E-07	9.18E-09	3.23E-11	0.00E+00	1.36E-10	1.71E-10	1.80E-10	-5.27E-09
ADP-fossils(3) [MJ]	1.85E+01	2.07E+00	7.51E-03	0.00E+00	2.71E-02	6.04E-02	4.88E-02	-2.10E+00
WDP(3)(4) [m^3 world eq.]	4.08E-01	5.69E-03	3.09E-04	0.00E+00	1.21E-04	5.97E-03	1.66E-04	-1.84E-02

See section 6.4 for a list acronyms used in this table.
(1) For each module, GWP-biogenic indicator is calculated as the sum of GWP-biogenic with CO_2 characterization factors set to zero in LCA FE, and the biogenic carbon content of product or packaging.
(2) The negative values for GWP-biogenic can be attributed to the production of the paper and/or wood products. Trees, used for the production of the paper, absorb CO_2 during the growth process which therefore gives a negative impact on CO_2 emissions.
(3) The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.
(4) Water consumption, i.e., the man-made removal of water from its watershed through shipment or evaporation, has also been selected due to its high political relevance. The UN estimates that roughly a billion people on the planet have no access to drinking water, which entails a variety of problems around ecosystem quality, health, and nutrition.

[7] Disclaimer: the use of the results of modules A1-A3 without considering the results of module C is discouraged.

In addition, the results of a supplementary indicator for climate impact is reported (GWP-GHG), as well as a selection of optional indicators. The GWP-GHG indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero (uptake and emissions are balanced out in modules A1-A3). This indicator creates comparability with how climate declarations are calculated in various regulative contexts, and allows for a direct comparison of the climate impact of modules A1-A3 of comparable products in different EPDs, without having to consider the biogenic content of the product(s).

	Additional mandatory impact indicator (PCR 2019:14)							
	Product	Construction		End of life				Other
	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG [kg CO_2 eq]	1.04E+00	1.59E-01	5.26E-03	0.00E+00	2.07E-03	6.81E-02	3.15E-03	-9.76E-02
Additional optional impact indicators (EN 15804+A2)								
PM [Disease inc.]	2.98E-07	1.55E-08	1.02E-10	0.00E+00	5.35E-11	2.09E-10	2.15E-10	-1.04E-09
IRP(1) [kBq U235 eq.]	4.14E-02	5.29E-04	6.69E-06	0.00E+00	7.05E-06	9.87E-05	5.30E-05	-1.02E-02
ETP-freshwater(2) [CTUe]	9.46E+00	1.62E+00	4.15E-02	0.00E+00	2.27E-02	6.30E-02	2.16E-01	-7.14E-01
HT-cancer(2) [CTUh]	1.60E-09	2.84E-11	6.10E-13	0.00E+00	3.62E-13	1.77E-12	3.31E-12	-2.03E-11
HT-non-cancer(2) [CTUh]	1.69E-07	9.00E-10	2.74E-11	0.00E+00	8.42E-12	1.65E-10	3.55E-10	-3.44E-10
SQP(2) [Pt]	2.23E+01	4.98E-01	1.07E-03	0.00E+00	5.11E-03	6.80E-03	4.15E-03	-2.43E+00

See section 6.4 for a list acronyms used in this table.
(1) This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.
(2) The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

The potential environmental impacts vary across the products covered by this EPD. For GWP-GHG indicator, the variation of the results of the products compared to the representative product ranges from 1% to 58% difference, aggregated over all included modules (from A to C).

Other environmental impact indicators also vary across the products in scope. The highest variations, aggregated over all included modules (from A to C), between the representative product and any of the included products are as follows: GWP-total (58%), GWP-fossil (58%), GWP-biogenic (71%), GWP-luluc (57%), ODP (62%), AP (56%), EP-freshwater (59%), EP-marine (48%), EP-terrestrial (47%), POCP (49%), ADP-min&met (68%), ADP-fossils (54%) and WDP (69%).

5.2 Use of resources

The main resource consumption indicators for 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black are reported in the table below. Use of resources without energy content is expressed in kg or m³ per declared unit. Energy consumption data are expressed in MJ per declared unit and as net calorific value. The net calorific value or lower heating value is calculated by subtracting the heat of vaporisation of water from the higher heating value. The results from the tables should be interpreted over the different modules and as they are calculated by the LCA FE software.

The use of primary energy is seperated into energy used as raw material and energy used as energy carrier using option B from the followed version of the PCR 2019:14. Following this option, the energy used as raw materials is declared as an input to the module where it enters the product system (A1) and as an output from the product system, since it exits the product system as useful energy (C3). Energy content that is wasted in landfill remains as part of the indicator for energy used for raw materials.

	Use of resources according to EN 15804+A2							
	Product	Construction		End of life				Other
	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE(1) [MJ]	2.85E+00	2.30E-01	3.16E-01	0.00E+00	1.16E-03	1.67E-01	5.81E-03	-4.57E-01
PERM(2) [MJ]	1.21E+00	-1.31E-01	-3.15E-01	0.00E+00	0.00E+00	-1.61E-01	0.00E+00	0.00E+00
PERT [MJ]	4.06E+00	9.90E-02	5.70E-04	0.00E+00	1.16E-03	6.12E-03	5.81E-03	-4.57E-01
PENRE(1) [MJ]	1.50E+01	2.16E+00	3.40E-02	0.00E+00	2.91E-02	8.86E-01	4.96E-02	-2.11E+00
PENRM(2) [MJ]	3.49E+00	0.00E+00	-2.62E-02	0.00E+00	0.00E+00	-8.25E-01	0.00E+00	0.00E+00
PENRT [MJ]	1.85E+01	2.16E+00	7.83E-03	0.00E+00	2.91E-02	6.06E-02	4.96E-02	-2.11E+00
SM [kg]	1.93E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW [m³]	1.39E-02	2.22E-04	7.51E-06	0.00E+00	3.98E-06	1.43E-04	6.15E-06	-4.93E-04

See section 6.4 for a list acronyms used in this table.
(1) For all declared modules, the difference between “Total use of primary energy” and “Use of primary energy used as raw materials” results in the value for “Use of primary energy”.
(2) For all declared modules, the inventories for the basic materials contain the information on the “Total use of renewable/non-renewable primary energy”. The indicators “Use of primary energy as raw materials” are assessed via the net calorific value of the product and packaging.

5.3 Output flows and waste categories

The important output flows and waste categories for 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black are reported in the tables below. All material flows are expressed in kg per declared unit while the exported energy data is expressed in MJ per declared unit and as net calorific value. CRU, MFR, MER, EEE and EET are required to be reported as per EN 15804. It should be noted that 3M processes do not generate radioactive waste and the values are presented as calculated in the LCA FE software.

	Waste categories according to EN 15804+A2							
	Product	Construction		End of life				Other
	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD [kg]	2.98E-03	6.44E-12	1.19E-13	0.00E+00	8.38E-14	1.98E-12	1.24E-12	0.00E+00
NHWD [kg]	1.37E-01	7.59E-03	3.34E-02	0.00E+00	2.54E-06	6.21E-02	2.96E-01	3.68E-03
RWD [kg]	2.33E-04	5.08E-06	7.49E-08	0.00E+00	8.36E-08	1.03E-06	5.50E-07	0.00E+00

See section 6.4 for a list acronyms used in this table.

	Output flows according to EN 15804+A2							
	Product	Construction		End of life				Other
	A1-A3	A4	A5	C1	C2	C3	C4	D
CRU [kg]	0.00E+00	6.94E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR [kg]	1.13E-02	1.64E-04	1.69E-02	0.00E+00	0.00E+00	1.70E-02	0.00E+00	0.00E+00
MER [kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE [MJ]	0.00E+00	9.80E-05	5.44E-03	0.00E+00	0.00E+00	1.37E-01	0.00E+00	-1.42E-01
EET [MJ]	0.00E+00	3.48E-05	1.69E-03	0.00E+00	0.00E+00	7.81E-02	0.00E+00	-7.97E-02

See section 6.4 for a list acronyms used in this table.

5.4 Electricity in A3

The electricity used in the manufacturing process of module A3 is sourced from the residual grid mix in Poland. The environmental impact of the residual electricity mix dataset used, for the GWP-GHG indicator is 0.911 kg CO_2 eq./kWh.

6 Additional Information

6.1 Other environmental information

6.1.1 Uncertainty on the environmental indicators

Data quality and uncertainty are mutually dependent. The precision of the data depends on measuring tolerance, assumptions, completion, comprehensiveness of the considered system and the representativeness of the data. Uncertainty is also introduced in the impact assessment phase of the study, and will vary according to the impact categories considered.

To get an idea of the uncertainty of the potential environmental impact, it is calculated for each reference and midpoint based on a pedigree matrix, using six different data quality indicators, and Monte Carlo analysis. The uncertainty results for 3M™ Temflex™ Vinyl Electrical Tape 165 19mm x 18m Black are presented below. These are calculated for the totals of the different module, for the mandatory potential environmental indicators of EN 15804+A2, as well as for the additional mandatory indicator for climate impact (GWP-GHG) mentioned in PCR 2019:14, v1.3.4.

Most impact indicators have an uncertainty ranging from -29% to -12% for the lower Δ%, and from 14% to 29% for the upper Δ%. The indicators that have wider extremities of their uncertainty ranges are GWP-luluc, EP-freshwater, EP-marine, ADP-min&met and WDP, with the lower and upper uncertainty ranges reaching -32% and 46%, respectively. The percentages can be explained by the contribution of a limited number of datasets with lower data quality scores.

As a conclusion, the results of these indicators should be interpreted carefully, but can nevertheless be justified knowing that (1) correct data selection rules were followed, (2) uncertainty is biased by a limited number of datasets datasets with lower data quality scores, and (3) lower data quality socres given for highly weighted data quality indicators significantly contributes to the uncertainty results. In addition, data quality for these indicators is overall very good which typically results in a low and acceptable uncertainty.

Indicator	Min	Max	Base	Lower Δ%	Upper Δ%
GWP-total	9.61E-01	1.34E+00	1.12E+00	-14%	20%
GWP-fossil	1.10E+00	1.45E+00	1.26E+00	-13%	15%
GWP-biogenic	-1.69E-01	-1.14E-01	-1.39E-01	22%	-18%
GWP-luluc	2.66E-03	5.37E-03	3.74E-03	-29%	44%
ODP	3.18E-12	4.14E-12	3.64E-12	-13%	14%
AP	5.85E-03	9.48E-03	7.49E-03	-22%	27%
EP-freshwater	2.62E-05	4.79E-05	3.54E-05	-26%	35%
EP-marine	1.40E-03	2.34E-03	1.77E-03	-21%	32%
EP-terrestrial	1.46E-02	2.43E-02	1.88E-02	-22%	29%
POCP	3.76E-03	5.66E-03	4.52E-03	-17%	25%
ADP-min&met	6.08E-07	1.30E-06	8.89E-07	-32%	46%
ADP-fossils	1.80E+01	2.43E+01	2.07E+01	-13%	17%
WDP	3.02E-01	5.95E-01	4.20E-01	-28%	42%
GWP-GHG	1.13E+00	1.47E+00	1.28E+00	-12%	15%

6.2 Social and economic aspects

As a company which operates around the world, including many underdeveloped areas, 3M has grown into a global leader in helping others. For many years we have been investing our people and resources to make a positive impact through schemes like 3Mgives, focusing on helping improve education, communities and the environment.

3Mgives improves lives and builds sustainable communities through social investments and thoughtful engagement of 3Mers worldwide. 3M was one of the first companies to establish a foundation in 1953. Between 1953 and 2023, 3M and 3M Foundation invested $2.05 billion in cash and product contributions in communities where 3M operates.

Our employees regularly take on challenges to raise money through charity events and share their skills through 3M's Impact programme, with diverse teams of 3Mers travelling to communities around the world to spend two immersive weeks collaborating with a local non-profit organisation, social enterprise or government agency to contribute to a solution for a pressing social or environmental issue.

3M also has a strong culture of inclusion and diversity, which is an essential driver of our continual innovation. Nurturing a talent pipeline is critical to achieving and maintaining our representation goals. To strengthen that pipeline, 3M has several programs and partnerships that provide valuable research, work, and professional development opportunities. Many of these programs are for underserved STEM students in higher education.[8]

6.3 Validity of the EPD and changes versus previous version

This version of the EPD is valid until 2029-08-13.

Throughout its validity, on a yearly basis, or upon modifications in the production process, the supply chain is evaluated to assess the need for an update of the supporting LCA and corresponding EPD. If changes in the product's life cycle result in potential environmental impacts varying more than 10% from the numbers reported in the sections above, the EPD is revised accordingly. Regardless, the EPD shall be reviewed when approaching the end of its validity period. At that stage, a new version of the EPD shall be published as appropriate.

[8] Social and economic aspects mentioned in this section are included in 3M's 2024 Global Impact report that is referenced in section 6.5.

6.4 Acronyms

Acronym	Meaning
3M	Minnesota Mining and Manufacturing Company
3P	Polluter Prevention Pays
ADP-fossil	Abiotic depletion potential for fossil resources
ADP-min&met	Abiotic depletion potential for non fossil resources (elements)
AP	Acidification potential
AS	Asia
CE	Conformité Européenne
CO_2	Carbon dioxide
CFC-11	Trichlorofluoromethane
CPC	Construction Products and Construction Services/ Central Product Classification
CRU	Components for re-use
CSA	Canadian Standards Association
CTUe	Comparative Toxic Unit
CU	Capacity utilisation
EEE	Exported electrical energy
EET	Exported thermal energy
EMD	Electrical Markets Division
EN	European norm
EoL	End of life
EPD ®	Environmental product declaration
EP-freshwater	Eutrophication potential, fraction of nutrients reaching freshwater end compartment
EP-marine	Eutrophication potential, fraction of nutrients reaching marine end compartment
EP-terrestrial	Eutrophication potential, Accumulated Exceedance
Eq.	Equivalent(s)
ET-freshwater	Ecotoxicity, freshwater
EU	European union
FCFC	Full capacity fuel consumption
FW	Use of net fresh water
GWP-biogenic	Global Warming Potential biogenic
GWP-fossil	Global Warming Potential fossil fuels
GWP-GHG	Global Warming Potential greenhouse gases
GWP-luluc	Global Warming Potential land use and land use change
GWP-total	Global Warming Potential total
HT-cancer	Potential Comparative Toxic Unit for humans carcinogenic effects
HT-non-cancer	Potential Comparative Toxic Unit for humans, non-carcinogenic effects
HWD	Hazardous waste disposed
IRP	Ionising radiation, human health
ISO	International Organisation for Standardisation
kBq	kilobecquerel
kg	kilogram
km	kilometer
LATAM	Latin America
LCA	Life cycle assessment
LCA FE	LCA for Experts™
LCI	Life cycle inventory
MER	Materials for energy recovery

MFR	Materials for recycling
MJ	Megajoule
ND	Not declared
NHWD	Non hazardous waste disposed
NRSF	Use of non renewable secondary fuels
ODP	Depletion potential of the stratospheric ozone layer
PCR	Product Category Rules
PEF	Product environmental footprint
PENRE	Use of non renewable primary energy as energy carrier
PENRM	Use of non renewable primary energy as raw materials
PENRT	Total use of non renewable primary energy (PENRE + PENRM)
PERE	Use of renewable primary energy as energy carrier
PERM	Use of renewable primary energy as raw materials
PERT	Total use of renewable primary energy (PERE + PERM)
POCP	Formation potential of tropospheric ozone
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RSF	Use of renewable secondary fuels
RWD	Radioactive waste disposed
SIBG	Safety and Industrial Buisness Group
SVHC	Substances of Very High Concern
SM	Use of secondary material
SQP	Potential soil quality index
UK	United Kingdom
US	United States
USAC	United States and Canada
VDE	Verband der Elektrotechnik
WDP	Water (user) deprivation potential, deprivation-weighted water consumption

6.5 References

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https://www.3m.com/3M/en_US/careers-us/

More information on Sustainability at 3M:
http://www.3M.com/Sustainability

3M Sustainability
Hermeslaan 7
1831 Diegem, Belgium

Phone +32 2 722 4584
Web http://www.3M.com/Sustainability

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