Tork®, Purex® and Sorbent® Toilet Tissue

Programme: The International EPD System, www.environdec.com, Programme Operator: EPD International AB, Regional Licensee: EPD Australasia, www.epd-australasia.com, EPD Registration Number: EPD-IES-0000852:004, Version: 4.0, Version Date: 2026-10-28, Valid until: 2028-06-21, Geographical Scope: Australia and New Zealand. An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

EPD® AUSTRALASIA INTERNATIONAL EPD SYSTEM

EPD INTERNATIONAL EPD SYSTEM

essity

Essity

Essity is a leading global hygiene and health company, dedicated to improving well-being through innovative and sustainable products, shaping a healthier future for people, business and society. We create everyday essentials that empower people to live with confidence and dignity at every stage of life. Our focus is on improving people's well-being, caring for the environment and driving strong business performance. By balancing these priorities, we aim to make a positive impact on daily life, ensure sustainable resource use and deliver lasting value for the future.

With sales in approximately 150 countries and around 36,000 employees worldwide, Essity's diverse portfolio of trusted brands helps millions of people every day. Headquartered in Stockholm, Sweden, Essity is listed on NASDAQ Stockholm and is committed to breaking barriers to well-being for everybody and every body.

Our portfolio supports people, businesses and societies across a broad spectrum, from managing everyday hygiene routines to supporting the care of a variety of medical conditions. Locally, Essity manufactures, markets, distributes and sells consumer products and professional hygiene solutions in Australia, New Zealand and Fiji, employing approximately 700 people. For more than 65 years our locally manufactured brands have been supporting homes, workplaces and public facilities across Australia and New Zealand. These include leading brands such as TENA, Libra, TOM Organic and Modibodi, as well as Purex, Sorbent and Handee in New Zealand.

Through innovation, expertise and our portfolio of established brands, Essity delivers quality, comfort and care while helping to improve health, hygiene and well-being for people across all stages of life.

For more information, visit www.essity.com.

Brands in this Environmental Product Declaration

Tork

For more than half a century, Tork has been the market shaper and innovation leader in professional hygiene across the globe. From washrooms and healthcare facilities to industrial environments, kitchens and dining areas, Tork helps organisations stay ready for business through solutions that improve efficiency, support well-being and drive sustainability.

Tork inspires and supports organisations to think ahead and stay ready for business. From enhancing the guest experience and improving cleaning efficiencies to finding new ways to become more sustainable, Tork's sustainability commitment focuses on three key areas: well-being, more from less, and circularity.

Tork helps businesses reduce consumption, improve hygiene standards and enhance the user experience through high-quality products, dispensing systems and services. By thinking ahead, Tork supports organisations in creating cleaner, safer and more sustainable environments.

Tork is a registered trademark of Essity, licensed exclusively to Essity for use in Australia, New Zealand and countries in the Pacific region. To learn more about Tork, please visit www.torkglobal.com

Purex

Purex has a strong New Zealand heritage & been proudly locally made since 1955. Purex has a low carbon footprint across the manufacturing life cycle from forest to store utilising renewable energy in the form of geothermal steam in the paper making process. Purex lovable dog Rolly is a distinctive asset and features on front of pack & in communications.

Purex is a registered trademark of Essity for use in New Zealand. To learn more about Handee visit purex.co.nz

Sorbent

Sorbent is a premium brand and introduced to New Zealanders in the late 1990s, becoming a much-loved addition to the bathrooms of loyal consumers wanting a premium toilet tissue. Sorbent toilet paper is made in the Kawerau Mill, Bay of Plenty & has a low carbon footprint from forest to store, utilising renewable energy in the form of geothermal steam in the paper making process.

Sorbent is a registered trademark of Essity for use in New Zealand. To learn more about Sorbent visit sorbent.co.nz

Sustainability – a core part of how we do business

Sustainability is built into Tork, Purex and Sorbent toilet tissue products from the start:

We begin with 100% certified sustainable pulp. We are committed to purchase pulp and paper reels consistent with No Deforestation, No Peat, No Exploitation (NDPE) policies adopted by the forestry and palm oil industries. All the wood fiber we source and use must come from suppliers that are certified according to the Forest Stewardship Council® (FSC®) or Program for the Endorsement of Forest Certification (PEFC™). Our demand is that the fiber at a minimum will always meet the FSC Controlled Wood standard, which means that the origin of the fiber has been verified by an independent third party. 100% of the pulp that enters our Kawerau paper machines is from suppliers that are certified to FSC standards, with a minimum of 70% FSC Mix sourced fiber and a maximum of 30% FSC Controlled Wood sources. To learn more about FSC standards and labels, please visit: www.fsc.org

We then manufacture paper locally, using a large share of renewable energy. We are proud to manufacture the products in this Environmental Product Declaration in Kawerau, New Zealand. Our Kawerau operation is certified to ISO 9001, ISO 14001, ISO 45001 and FSC chain of custody. Since 2010, we've invested heavily in new technologies to replaced most of our natural gas consumption with geothermal steam in an ongoing partnership with Ngāti Tūwharetoa Geothermal Assets. In 2024, we invested over NZD$20 million in building the world's only tissue machine to use 100% geothermal steam in place of natural gas. As a result of our work to minimise our impact, since 2009 we have reduced the greenhouse gas emissions generated at our Kawerau plant by more than 70%.

We help our customers to reduce their environmental footprint through their use of our unique consumption-reducing dispensers, composting certification and recyclable packaging, both of which are all innovations designed to reduce waste. We continue to lead with our investments in recycled content soft plastic packaging that reduces waste and emissions from virgin plastic.

This EPD helps to demonstrate Essity's commitment to sustainability and complements our work with eco-label and sustainability organisations such as FSC, Eco Choice Aotearoa, and Sedex.

Environmental Product Declaration (EPD)

An Environmental Product Declaration, or EPD, is a standardised and verified way of quantifying the environmental impacts of a product based on a consistent set of rules known as a PCR (Product Category Rules). Environmental Product Declarations within the same product category from different EPD programmes may not be comparable.

Products covered by this EPD

All products in this EPD are covered by the following industry classifications: ANZSIC v1.0 C152400 “Sanitary Paper Product Manufacturing” and UN CPC v2 32131 “Toilet or facial tissue stock, towel or napkin stock and similar paper, cellulose wadding and webs of cellulose fibres”.

Tork Toilet Paper

Tork Soft Jumbo Toilet Roll Advanced T1 (SKU: 2179144)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 300m (L) x 9cm (W)
- Net weight per roll: 810g

Tork Jumbo Toilet Roll Universal T1 (SKU: 2179142)

- 1 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 600m (L) x 9cm (W)
- Net weight per roll: 945g

Tork Soft Mini Jumbo Toilet Roll Advanced T2 (SKU: 2306898)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 200m (L) x 9cm (W)
- Net weight per roll: 540g

Tork Mini Jumbo Toilet Roll Universal T2 (SKU: 2306897)

- 1 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 400m (L) x 9cm (W)
- Net weight per roll: 630g

Tork Extra Soft Conventional Toilet Roll Premium T4 (SKU: 2170336)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Sheet dimensions: 11cm (L) x 10cm (W)
- Roll length: 30.8m (280 sheets)
- Net weight per roll: 116g

Tork Soft Conventional Toilet Roll Advanced T4 (SKU: 234)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Sheet dimensions: 10cm (L) x 10cm (W)
- Roll length: 40m (400 sheets)
- Net weight per roll: 119g
- Also available in Multipack of 16 without individual wrapping

Tork SmartOne® Mini Toilet Roll Advanced T9 (SKU: 193)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Sheet dimensions: 18cm (L) x 13.4cm (W)
- Roll length: 111.6m (620 sheets)
- Net weight per roll: 449g

Purex Toilet Paper

Purex Mega Roll (available in packs of 4, 6 and 12 rolls)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 9.9 x 11 cm (450 sheets)
- Net weight per roll: 167g
- SKU: 2302644 Mega White 4s
- SKU: 2309198 Mega White 6s
- SKU: 2320367 Mega White 12s

Purex Standard Roll (available in packs of 4, 12 rolls)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 9.9 x 11 cm (200 sheets)
- Net weight per roll: 74g
- SKU: 2264599 White 4s
- SKU: 2294521 White 12s

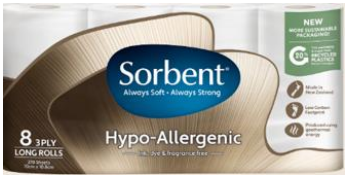
Purex Standard Roll (available in packs of 24 rolls)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 9.5 x 11 cm (200 sheets)
- Net weight per roll: 71g
- SKU: 2304297

Sorbent Toilet Paper

Sorbent Long Roll (available in packs of 4, 8)

- 2 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 10 x 10.8 cm (270 sheets)
- Net weight per roll: 143g
- SKU: 2314219 Silky White 4s
- SKU: 2314220 Silky White 8s



Sorbent Long Roll Hypo-allergenic (available in packs of 8, 12)

- 3 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 10 x 10.8 cm (270 sheets)
- Net weight per roll: 143g
- SKU: 2314217 12s
- SKU: 2327254 8s

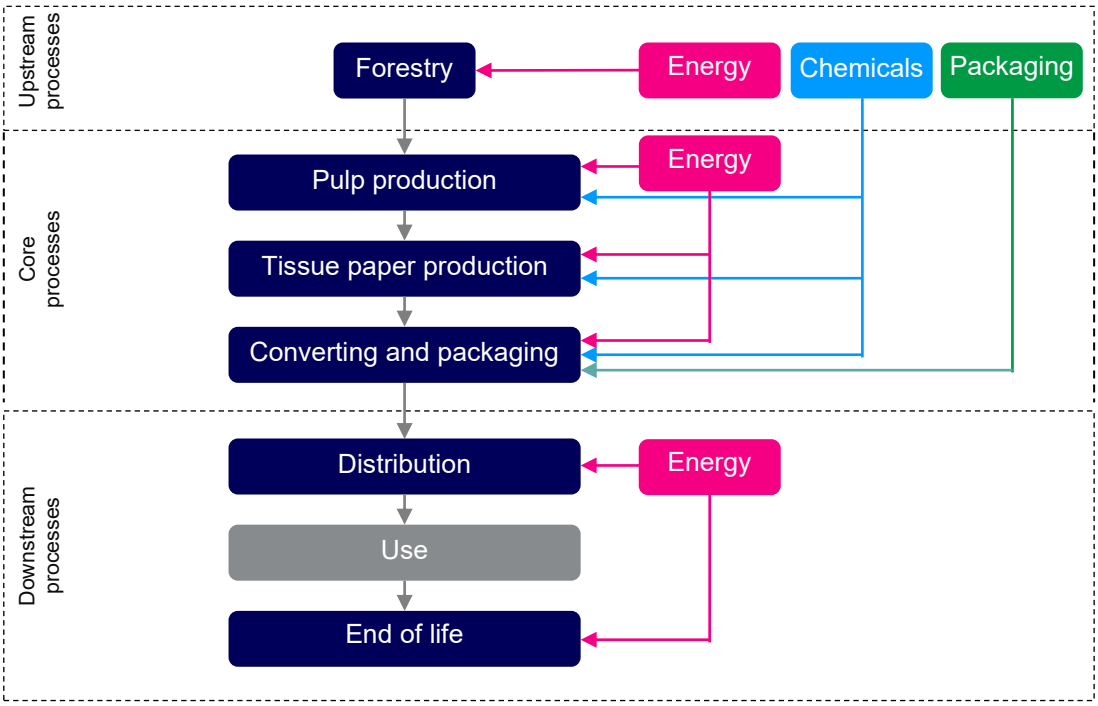
Sorbent Thick & Large Roll (8 rolls)

- 3 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 11.6 x 12.1 cm (210 sheets)
- Net weight per roll: 146g
- SKU: 2325518

Sorbent Thick & Large Roll Hypo-allergenic (8 rolls)

- 3 ply, white toilet tissue
- FSC Mix 70% certified
- Dimensions: 11.6 cm x 12.1cm (210 sheets)
- Net weight per roll: 146g
- SKU: 2325392

Life cycle of Tork®, Purex® and Sorbent® toilet tissue products



This EPD covers the full life cycle of toilet tissue products from cradle-to-grave.

The life cycle starts with (1) forestry to grow wood fibre, (2) production of the chemicals needed to make paper from wood fibre, (3) production of packaging materials, and (4) production of energy for these process steps. These are the **upstream processes**.

Wood chips/residues, chemicals and fuels are transported to pulp mills, where wood pulp is made from wood fibre. This pulp is then transported to Essity Australasia's paper mill where it is formed into paper, cut to size ('converted'), packaged and then warehoused. These steps also require energy to be produced, and for both solid waste and wastewater to be treated. These are the **core processes**.

Finally, finished toilet tissue products are transported to customers. As the use of a toilet tissue has no direct environmental impacts, use is not included in this EPD. The final step is end-of-life, where the toilet tissue and its packaging are disposed. These are the **downstream processes**.

Key parameters and assumptions for the LCA

- **Declared unit**: 1 tonne (1000 kg) of toilet tissue, plus packaging.
- **Manufacturing site**: All products are manufactured in Kawerau, New Zealand.
- **Distribution to customer**: Distribution from the manufacturing plant to customer via Essity's warehouses is based on a sales-weighted average of the distances travelled in each transport mode (truck and container ship).
- **End of life**: 100% of toilet tissue is assumed to go to a municipal wastewater treatment plant. As there are no readily available average wastewater treatment life cycle inventories for Australia or New Zealand, the LCA model is based on Auckland's plants (Watercare, 2013). The electricity mix and sludge treatment have been adapted to reflect average Australian and New Zealand conditions. This results in electricity use of 1.15 MWh/t dry biosolids in Australia and 1.40 MWh/t in New Zealand. Direct emissions have been calculated based on the average elemental composition of paper from the Phyllis2 database (ECN 2012) – 50.2% C, 42.5% O, 6.9% H, 0.3% N and 0.1% S – as no product-specific data were available. This absolute-dry composition has been adjusted to 10% water content in line with the international definition of air-dry paper. The split of treatment between Australia and New Zealand is determined by annual product sales figures from 2018.
  100% of polyethylene film packaging is assumed to go to landfill. While film packaging can be recycled in some locations, this practice is currently limited in Australia and New Zealand.
  77% of paper and cardboard packaging is assumed to be recycled, with the remainder landfilled. This is based on the Australian average for 2013-14 (APC 2014). The recycling rate in New Zealand is likely to be similar but is not available due to uncertainties (PCNZ 2015). No credits are applied for recycling paper or cardboard in line with the PCR 2011:05 (IEPDS 2022).
  All landfill and recycling assume truck transport of 50 km outbound with an empty backhaul.
- **Biogenic carbon emissions from wastewater treatment**: Chemical oxygen demand (COD) from toilet tissue is approximated by theoretical oxygen demand (ThOD), calculated following OECD (1992) as 1.315 mg O_2 / mg paper. Emissions rates for Australia and New Zealand were calculated as 1,406 kg CO_2 and 27 kg CH_4 per air-dry tonne of paper for Australia (based primarily on Australian Government 2015) and 1,333 kg CO_2 and 39 kg CH_4 for New Zealand (following New Zealand Government 2015).
- **Biogenic carbon emissions from landfilling of biosolids generated during wastewater treatment**: From every kilogram of biosolids, 22% of the mass is biogenic carbon that is converted to landfill gas. From every kilogram of carbon converted to landfill gas, 71.2% is released as carbon dioxide and 28.8% is released as methane. These percentages represent Australian and New Zealand conditions where data quality is best.
  - 0.45 kg/kg = assumed based on degradable organic carbon in paper at 10% water content (ECN 2012)
  - 0.49 kg/kg = fraction of carbon that degrades (Australian Government 2018)
  - Of the landfill gas formed, 50% is CO2 and 50% is CH4 (ibid)
  - 68% of the CH4 is captured, of which 75% is used for energy recovery and 25% is flared (Carre 2011, based on Hyder Consulting 2007)

    - 32% of the CH_4 is not captured, of which 90% is released to the atmosphere as CH_4 and 10% is oxidised to CO_2 in the landfill's surface (Australian Government 2018)
- **Data for core processes**: Primary (specific) data were collected from Essity and our pulp suppliers as per the PCR 2011:05 (IEPDS 2022). Data are an annual average for the 2021 calendar year.
    - Data for new product was based on the 2025 calendar year.
    - Production data for all products has also been updated to 2025 for consistency. This ensures the same production data period was used for weighted average calculation.
    - Mono-nitrogen oxides (NOx) have been modelled as nitrogen dioxide (NO_2) and Total Reduced Sulfur (TRS) has been modelled as hydrogen sulfide (H_2S).
- **Data for upstream and downstream processes**: Secondary (generic) data were used for forestry, chemical production, packaging materials and electricity, as allowed under the PCR 2011:05 (IEPDS 2022). All data are from the Sphera's Managed LCA Content (MLC) database CUP2022.2, formerly known as GaBi LCI database, and are typically representative of the years 2018 to 2024, depending on the dataset (Sphera 2022).
- **Electricity mixes**: All electricity is based on New Zealand's national electricity production mix for 2018 from the Sphera's MLC database CUP2022.2 (Sphera 2022).
- **Allocation**: Where required, co-product allocation using the most relevant physical quantity (mass, energy or exergy) was applied for core processes. Allocation rules for secondary data (upstream/downstream processes) are documented on the Sphera website (Sphera 2022). Recycling allocation follows the polluter pays principle in line with IEPDS (2017).
- **Cut-off criteria**: Environmental impacts relating to personnel, infrastructure, and production equipment not directly consumed in the process are excluded from the system boundary as per the PCR 2011:05 (IEPDS 2022). All other reported data were incorporated and modelled using the best available life cycle inventory data.

Environmental indicators

Indicator	Description
Climate change Total (GWP-total) Fossil (GWP-fossil) Biogenic (GWP-biogenic) Land use and Land use change (GWP-luluc)	A measure of greenhouse gas emissions, such as CO_2 and methane. These emissions are causing an increase in the absorption of radiation emitted by the earth, increasing the natural greenhouse effect. This may in turn have adverse impacts on ecosystem health, human health and material welfare
Ozone Depletion (ODP)	A measure of air emissions that contribute to the depletion of the stratospheric ozone layer. Depletion of the ozone leads to higher levels of UVB ultraviolet rays reaching the earth's surface with detrimental effects on humans and plants
Acidification Potential (AP)	The potential of emissions to cause acidifying effects in the environment, typically due to acid rain. Potential downstream effects include fish mortality, forest decline and the deterioration of building materials.
Eutrophication Freshwater (EP-fw) Aquatic marine (EP-fm) Terrestrial (EP-tr)	Eutrophication covers all potential impacts of excessively high levels of macronutrients, the most important of which nitrogen (N) and phosphorus (P). Nutrient enrichment may cause an undesirable shift in species composition and elevated biomass production in both aquatic and terrestrial ecosystems. In aquatic ecosystems increased biomass production may lead to depressed oxygen levels, because of the additional consumption of oxygen in biomass decomposition.
Photochemical Ozone Creation Potential (POCP)	A measure of emissions of precursors that contribute to ground-level smog formation (mainly ozone, O_3). Ground-level ozone can be harmful to human and ecosystem health and can also damage crops.
Depletion of abiotic resources – minerals and metals (ADP-mm)	The consumption of non-renewable resources leads to a decrease in the future availability of the functions supplied by these resources. Depletion of mineral resources is assessed based on ultimate reserves
Depletion of abiotic resources (ADP-fossil)	The consumption of non-renewable resources leads to a decrease in the future availability of the functions supplied by these resources.
Water use (WDP)	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)

Tork Soft Jumbo Toilet Roll Advanced T1

Article number(s): 2179144

1,000 kg air-dry tissue + 63 kg paper packaging + 21 kg plastic packaging = 1,085 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture: Upstream	Manufacture: Core	Manufacture: To Gate	Transport + Wastewater treatment: Downstream	Transport + Wastewater treatment: Total
Climate change, total	kg CO_2-eq.	-3,610	3,130	-483	3,310	2,830
Climate change, fossil	kg CO_2-eq.	277	988	1,260	796	2,060
Climate change, biogenic	kg CO_2-eq.	-3,890	2,140	-1,750	2,520	767
Climate change, land use and land use change	kg CO_2-eq.	0.0987	3.21	3.31	0.0564	3.37
Ozone depletion	kg CFC11-eq.	4.69E-09	5.11E-10	5.20E-09	2.76E-09	7.96E-09
Acidification	Mole of H^+ eq.	1.76	9.00	10.8	4.43	15.2
Eutrophication, freshwater	kg P eq.	0.00987	0.0354	0.0452	0.00173	0.0470
Eutrophication, marine	kg N eq.	0.623	2.83	3.45	1.85	5.30
Eutrophication, terrestrial	Mole of N eq.	6.73	31.8	38.5	12.0	50.6
Photochemical ozone formation, human health	kg NMVOC eq.	1.78	7.79	9.57	3.37	12.9
Resource use, mineral and metals	kg Sb-eq.	5.07E-05	5.96E-05	1.10E-04	8.10E-05	1.91E-04
Resource use, fossils	MJ	4,460	10,600	15,100	8,510	23,600
Water use	m^3 world equiv.	37.4	354	391	2,990	3,380

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	45,800	16,600	62,400	4,770	67,200
Primary energy resources used as raw materials	MJ	15,100	0	15,100	0	15,100
Total use of renewable primary energy resources	MJ	60,900	16,600	77,500	4,770	82,300
Use of non-renewable primary energy	MJ	4,480	10,600	15,100	8,510	23,600
Non-renewable primary energy resources used as raw materials	MJ	917	0	917	0	917
Total use of non-renewable primary energy resources	MJ	5,400	10,600	16,000	8,510	24,500
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.43	35.6	37.0	68.5	106
Total use of non-renewable & renewable primary energy resources	MJ	66,257	27,273	93,530	13,280	1.07E+05
% Total use of renewable primary energy resources	MJ	91.8%	61.0%	82.9%	35.9%	77.0%

Indicator	Unit	Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.53E-05	1.14E-06	1.65E-05	4.14E-07	1.69E-05
Non-hazardous waste disposed	kg	5.55	39.6	45.1	126	171
Radioactive waste disposed	kg	0.110	0.0327	0.143	0.0786	0.221
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork Jumbo Toilet Roll Universal T1

Article number(s): 2179142

1,000 kg air-dry tissue + 55 kg paper packaging + 23 kg plastic packaging = 1,078 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,600	3,120	-485	3,380	2,900
Climate change, fossil	kg CO_2-eq.	275	975	1,250	904	2,150
Climate change, biogenic	kg CO_2-eq.	-3,880	2,140	-1,740	2,480	741
Climate change, land use and land use change	kg CO_2-eq.	0.0900	3.21	3.30	0.0549	3.36
Ozone depletion	kg CFC11-eq.	4.58E-09	5.06E-10	5.09E-09	3.31E-09	8.39E-09
Acidification	Mole of H^+ eq.	1.73	8.85	10.6	5.14	15.7
Eutrophication, freshwater	kg P eq.	0.00968	0.0354	0.0450	0.00171	0.0468
Eutrophication, marine	kg N eq.	0.610	2.83	3.44	1.99	5.43
Eutrophication, terrestrial	Mole of N eq.	6.60	31.2	37.8	13.6	51.3
Photochemical ozone formation, human health	kg NMVOC eq.	1.75	7.80	9.54	3.78	13.3
Resource use, mineral and metals	kg Sb-eq.	5.14E-05	5.89E-05	1.10E-04	8.74E-05	1.98E-04
Resource use, fossils	MJ	4,490	10,800	15,300	9,700	25,000
Water use	m^3 world equiv.	37.1	348	386	3,560	3,940

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	45,400	14,000	59,400	3,880	63,200
Primary energy resources used as raw materials	MJ	15,000	0	15,000	0	15,000
Total use of renewable primary energy resources	MJ	60,400	14,000	74,300	3,880	78,200
Use of non-renewable primary energy	MJ	4,510	10,800	15,300	9,700	25,000
Non-renewable primary energy resources used as raw materials	MJ	987	0	987	0	987
Total use of non-renewable primary energy resources	MJ	5,500	10,800	16,300	9,700	26,000
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.40	35.2	36.6	66.1	103
Total use of non-renewable & renewable primary energy resources	MJ	65,855	24,771	90,627	13,577	1.04E+05
% Total use of renewable primary energy resources	MJ	91.6%	56.4%	82.0%	28.5%	75.1%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.35E-05	1.15E-06	1.47E-05	4.25E-07	1.51E-05
Non-hazardous waste disposed	kg	5.37	39.6	45.0	115	160
Radioactive waste disposed	kg	0.109	0.0327	0.142	0.0786	0.220
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork Soft Mini Jumbo Toilet Roll Advanced T2

Article number(s): 2306898
1,000 kg air-dry tissue + 35 kg paper packaging + 9 kg plastic packaging = 1,044 kg total.
Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,610	3,120	-493	3,190	2,700
Climate change, fossil	kg CO_2-eq.	235	974	1,210	678	1,890
Climate change, biogenic	kg CO_2-eq.	-3,850	2,140	-1,710	2,510	808
Climate change, land use and land use change	kg CO_2-eq.	0.0623	3.21	3.28	0.0580	3.33
Ozone depletion	kg CFC11-eq.	4.24E-09	5.10E-10	4.76E-09	2.19E-09	6.94E-09
Acidification	Mole of H^+ eq.	1.58	8.64	10.2	3.59	13.8
Eutrophication, freshwater	kg P eq.	0.00913	0.0354	0.0445	0.00175	0.0463
Eutrophication, marine	kg N eq.	0.553	2.69	3.25	1.67	4.92
Eutrophication, terrestrial	Mole of N eq.	6.01	30.3	36.3	10.2	46.5
Photochemical ozone formation, human health	kg NMVOC eq.	1.59	7.42	9.01	2.88	11.9
Resource use, mineral and metals	kg Sb-eq.	3.18E-05	5.95E-05	9.13E-05	7.42E-05	1.66E-04
Resource use, fossils	MJ	3,570	10,500	14,000	7,200	21,200
Water use	m^3 world equiv.	29.2	354	383	2,400	2,780

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	44,300	16,600	60,900	5,700	66,600
Primary energy resources used as raw materials	MJ	14,700	0	14,700	0	14,700
Total use of renewable primary energy resources	MJ	59,000	16,600	75,600	5,700	81,300
Use of non-renewable primary energy	MJ	3,580	10,500	14,000	7,210	21,300
Non-renewable primary energy resources used as raw materials	MJ	397	0	397	0	397
Total use of non-renewable primary energy resources	MJ	3,980	10,500	14,400	7,210	21,600
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.11	35.6	36.7	71.0	108
Total use of non-renewable & renewable primary energy resources	MJ	62,951	27,108	90,059	12,906	1.03E+05
% Total use of renewable primary energy resources	MJ	93.7%	61.4%	84.0%	44.2%	79.0%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	8.57E-06	1.14E-06	9.70E-06	4.03E-07	1.01E-05
Non-hazardous waste disposed	kg	3.17	39.6	42.8	137	180
Radioactive waste disposed	kg	0.0916	0.0327	0.124	0.0787	0.203
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork Mini Jumbo Toilet Roll Universal T2

Article number(s): 2306897

1,000 kg air-dry tissue + 33 kg paper packaging + 8 kg plastic packaging = 1,041 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,610	3,110	-505	3,260	2,750
Climate change, fossil	kg CO_2-eq.	232	962	1,190	770	1,960
Climate change, biogenic	kg CO_2-eq.	-3,840	2,140	-1,700	2,490	783
Climate change, land use and land use change	kg CO_2-eq.	0.0600	3.21	3.27	0.0566	3.33
Ozone depletion	kg CFC11-eq.	4.22E-09	5.05E-10	4.72E-09	2.67E-09	7.39E-09
Acidification	Mole of H^+ eq.	1.57	8.52	10.1	4.02	14.1
Eutrophication, freshwater	kg P eq.	0.00908	0.0354	0.0444	0.00173	0.0462
Eutrophication, marine	kg N eq.	0.548	2.70	3.25	1.75	5.00
Eutrophication, terrestrial	Mole of N eq.	5.96	29.8	35.8	11.0	46.7
Photochemical ozone formation, human health	kg NMVOC eq.	1.57	7.45	9.03	3.10	12.1
Resource use, mineral and metals	kg Sb-eq.	3.01E-05	5.88E-05	8.89E-05	7.98E-05	1.69E-04
Resource use, fossils	MJ	3,490	10,600	14,100	8,210	22,300
Water use	m^3 world equiv.	28.5	348	377	2,900	3,280

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	44,200	14,000	58,200	4,910	63,100
Primary energy resources used as raw materials	MJ	14,700	0	14,700	0	14,700
Total use of renewable primary energy resources	MJ	58,900	14,000	72,800	4,910	77,700
Use of non-renewable primary energy	MJ	3,500	10,600	14,100	8,210	22,400
Non-renewable primary energy resources used as raw materials	MJ	357	0	357	0	357
Total use of non-renewable primary energy resources	MJ	3,860	10,600	14,500	8,210	22,700
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.08	35.2	36.2	68.9	105
Total use of non-renewable & renewable primary energy resources	MJ	62,711	24,619	87,330	13,128	1.00E+05
% Total use of renewable primary energy resources	MJ	93.9%	56.8%	83.4%	37.4%	77.4%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	8.16E-06	1.15E-06	9.31E-06	4.13E-07	9.72E-06
Non-hazardous waste disposed	kg	2.99	39.6	42.6	127	170
Radioactive waste disposed	kg	0.0902	0.0327	0.123	0.0786	0.202
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork Extra Soft Conventional Toilet Roll Premium T4

Article number(s): 2170336

1,000 kg air-dry tissue + 85 kg paper packaging + 13 kg plastic packaging = 1,099 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,420	2,780	-639	3,390	2,750
Climate change, fossil	kg CO_2-eq.	287	856	1,140	838	1,980
Climate change, biogenic	kg CO_2-eq.	-3,710	1,920	-1,790	2,550	761
Climate change, land use and land use change	kg CO_2-eq.	1.27	4.61	5.88	0.0570	5.94
Ozone depletion	kg CFC11-eq.	4.36E-09	4.75E-10	4.84E-09	2.71E-09	7.55E-09
Acidification	Mole of H^+ eq.	1.76	9.14	10.9	6.07	17.0
Eutrophication, freshwater	kg P eq.	0.00948	0.0474	0.0569	0.00174	0.0586
Eutrophication, marine	kg N eq.	0.652	2.74	3.40	2.29	5.68
Eutrophication, terrestrial	Mole of N eq.	6.77	29.9	36.7	16.9	53.6
Photochemical ozone formation, human health	kg NMVOC eq.	1.79	7.44	9.23	4.57	13.8
Resource use, mineral and metals	kg Sb-eq.	4.94E-05	5.33E-05	1.03E-04	8.10E-05	1.84E-04
Resource use, fossils	MJ	4,470	9,290	13,800	9,050	22,800
Water use	m^3 world equiv.	46.1	274	320	2,940	3,260

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	44,600	12,800	57,400	4,850	62,300
Primary energy resources used as raw materials	MJ	15,400	0	15,400	0	15,400
Total use of renewable primary energy resources	MJ	60,000	12,800	72,800	4,850	77,700
Use of non-renewable primary energy	MJ	4,480	9,290	13,800	9,050	22,800
Non-renewable primary energy resources used as raw materials	MJ	576	0	576	0	576
Total use of non-renewable primary energy resources	MJ	5,060	9,290	14,400	9,050	23,400
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.45	32.2	34.6	68.7	103
Total use of non-renewable & renewable primary energy resources	MJ	65,063	22,102	87,165	13,904	1.01E+05
% Total use of renewable primary energy resources	MJ	92.2%	57.9%	83.5%	34.9%	76.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.94E-05	1.28E-06	2.06E-05	4.14E-07	2.11E-05
Non-hazardous waste disposed	kg	5.86	37.3	43.1	127	170
Radioactive waste disposed	kg	0.137	0.0454	0.182	0.0787	0.261
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork Soft Conventional Toilet Roll Advanced T4

Article number(s): 234

1,000 kg air-dry tissue + 51 kg paper packaging + 45 kg plastic packaging = 1,095 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,340	2,920	-423	3,460	3,030
Climate change, fossil	kg CO_2-eq.	324	978	1,300	981	2,280
Climate change, biogenic	kg CO_2-eq.	-3,670	1,930	-1,730	2,470	743
Climate change, land use and land use change	kg CO_2-eq.	0.0859	4.66	4.74	0.0555	4.80
Ozone depletion	kg CFC11-eq.	3.94E-09	5.66E-10	4.51E-09	3.33E-09	7.84E-09
Acidification	Mole of H^+ eq.	1.72	9.51	11.2	7.35	18.6
Eutrophication, freshwater	kg P eq.	0.00617	0.0479	0.0541	0.00173	0.0558
Eutrophication, marine	kg N eq.	0.605	2.86	3.46	2.58	6.05
Eutrophication, terrestrial	Mole of N eq.	6.55	31.5	38.1	20.0	58.1
Photochemical ozone formation, human health	kg NMVOC eq.	1.74	7.75	9.48	5.38	14.9
Resource use, mineral and metals	kg Sb-eq.	8.09E-05	6.43E-05	1.45E-04	8.86E-05	2.34E-04
Resource use, fossils	MJ	5,940	10,600	16,500	10,700	27,200
Water use	m^3 world equiv.	49.7	354	404	3,580	3,990

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	43,100	16,100	59,200	3,840	63,100
Primary energy resources used as raw materials	MJ	14,900	0	14,900	0	14,900
Total use of renewable primary energy resources	MJ	58,100	16,100	74,200	3,840	78,000
Use of non-renewable primary energy	MJ	5,990	10,600	16,600	10,700	27,200
Non-renewable primary energy resources used as raw materials	MJ	1,920	0	1,920	0	1,920
Total use of non-renewable primary energy resources	MJ	7,920	10,600	18,500	10,700	29,200
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.85	38.8	40.7	66.0	107
Total use of non-renewable & renewable primary energy resources	MJ	65,973	26,682	92,655	14,501	1.07E+05
% Total use of renewable primary energy resources	MJ	88.0%	60.3%	80.0%	26.5%	72.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.17E-05	1.37E-06	1.30E-05	4.27E-07	1.35E-05
Non-hazardous waste disposed	kg	7.36	38.0	45.4	114	160
Radioactive waste disposed	kg	0.150	0.0460	0.196	0.0786	0.274
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Tork SmartOne® Mini Toilet Roll Advanced T9

Article number(s): 193

1,000 kg air-dry tissue + 55 kg paper packaging + 14 kg plastic packaging = 1,068 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,410	2,850	-558	3,440	2,880
Climate change, fossil	kg CO_2-eq.	261	914	1,170	953	2,130
Climate change, biogenic	kg CO_2-eq.	-3,670	1,930	-1,740	2,490	752
Climate change, land use and land use change	kg CO_2-eq.	0.0831	4.65	4.73	0.0567	4.79
Ozone depletion	kg CFC11-eq.	3.91E-09	5.17E-10	4.43E-09	3.12E-09	7.55E-09
Acidification	Mole of H^+ eq.	1.62	9.36	11.0	6.83	17.8
Eutrophication, freshwater	kg P eq.	0.00620	0.0478	0.0540	0.00190	0.0559
Eutrophication, marine	kg N eq.	0.571	2.79	3.36	2.50	5.86
Eutrophication, terrestrial	Mole of N eq.	6.18	30.8	37.0	19.2	56.2
Photochemical ozone formation, human health	kg NMVOC eq.	1.63	7.55	9.18	5.09	14.3
Resource use, mineral and metals	kg Sb-eq.	4.36E-05	5.83E-05	1.02E-04	8.64E-05	1.88E-04
Resource use, fossils	MJ	4,130	9,750	13,900	10,400	24,300
Water use	m^3 world equiv.	37.7	310	348	3,350	3,700

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	43,300	15,500	58,800	4,200	63,000
Primary energy resources used as raw materials	MJ	15,000	0	15,000	0	15,000
Total use of renewable primary energy resources	MJ	58,300	15,500	73,700	4,200	77,900
Use of non-renewable primary energy	MJ	4,150	9,760	13,900	10,400	24,300
Non-renewable primary energy resources used as raw materials	MJ	596	0	596	0	596
Total use of non-renewable primary energy resources	MJ	4,750	9,760	14,500	10,400	24,900
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	1.49	35.2	36.7	67.0	104
Total use of non-renewable & renewable primary energy resources	MJ	63,013	25,216	88,229	14,605	1.03E+05
% Total use of renewable primary energy resources	MJ	92.5%	61.3%	83.6%	28.8%	75.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.26E-05	1.32E-06	1.39E-05	4.25E-07	1.44E-05
Non-hazardous waste disposed	kg	4.57	37.7	42.2	131	174
Radioactive waste disposed	kg	0.126	0.0458	0.172	0.0789	0.251
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Mega Toilet Roll-4

Article number(s): 2302644

1,000 kg air-dry tissue + 32 kg paper packaging + 28 kg plastic packaging = 1,060 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,300	2,820	-479	2,970	2,490
Climate change, fossil	kg CO_2-eq.	300	918	1,220	374	1,590
Climate change, biogenic	kg CO_2-eq.	-3,600	1,900	-1,700	2,590	891
Climate change, land use and land use change	kg CO_2-eq.	1.21	4.57	5.77	0.0622	5.84
Ozone depletion	kg CFC11-eq.	3.68E-09	5.16E-10	4.20E-09	6.64E-10	4.86E-09
Acidification	Mole of H^+ eq.	1.59	9.23	10.8	1.52	12.3
Eutrophication, freshwater	kg P eq.	0.00823	0.0471	0.0553	0.00180	0.0571
Eutrophication, marine	kg N eq.	0.579	2.78	3.36	1.26	4.62
Eutrophication, terrestrial	Mole of N eq.	6.04	30.5	36.5	5.80	42.3
Photochemical ozone formation, human health	kg NMVOC eq.	1.61	7.53	9.14	1.70	10.8
Resource use, mineral and metals	kg Sb-eq.	6.20E-05	5.85E-05	1.20E-04	5.63E-05	1.77E-04
Resource use, fossils	MJ	5,360	9,960	15,300	3,870	19,200
Water use	m^3 world equiv.	46.0	313	359	822	1,180

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	41,700	14,300	56,000	8,190	64,200
Primary energy resources used as raw materials	MJ	14,700	0	14,700	0	14,700
Total use of renewable primary energy resources	MJ	56,300	14,300	70,600	8,190	78,800
Use of non-renewable primary energy	MJ	5,400	9,960	15,400	3,870	19,200
Non-renewable primary energy resources used as raw materials	MJ	1,190	0	1,190	0	1,190
Total use of non-renewable primary energy resources	MJ	6,590	9,960	16,500	3,870	20,400
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.50	35.2	37.7	77.6	115
Total use of non-renewable & renewable primary energy resources	MJ	62,900	24,283	87,183	12,066	99,249
% Total use of renewable primary energy resources	MJ	89.5%	59.0%	81.0%	67.9%	79.4%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	7.68E-06	1.32E-06	9.00E-06	3.72E-07	9.38E-06
Non-hazardous waste disposed	kg	5.31	37.3	42.6	167	209
Radioactive waste disposed	kg	0.134	0.0451	0.179	0.0788	0.258
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Mega Toilet Roll-6

Article number(s): 2309198

1,000 kg air-dry tissue + 31 kg paper packaging + 37 kg plastic packaging = 1,069 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,280	2,820	-457	2,960	2,500
Climate change, fossil	kg CO_2-eq.	320	918	1,240	369	1,610
Climate change, biogenic	kg CO_2-eq.	-3,600	1,900	-1,700	2,590	891
Climate change, land use and land use change	kg CO_2-eq.	1.21	4.57	5.77	0.0621	5.84
Ozone depletion	kg CFC11-eq.	3.69E-09	5.16E-10	4.21E-09	6.63E-10	4.87E-09
Acidification	Mole of H^+ eq.	1.62	9.23	10.9	1.39	12.2
Eutrophication, freshwater	kg P eq.	0.00822	0.0471	0.0553	0.00180	0.0571
Eutrophication, marine	kg N eq.	0.590	2.78	3.37	1.22	4.59
Eutrophication, terrestrial	Mole of N eq.	6.16	30.5	36.6	5.38	42.0
Photochemical ozone formation, human health	kg NMVOC eq.	1.64	7.53	9.17	1.59	10.8
Resource use, mineral and metals	kg Sb-eq.	7.40E-05	5.84E-05	1.32E-04	5.63E-05	1.89E-04
Resource use, fossils	MJ	5,930	9,960	15,900	3,800	19,700
Water use	m^3 world equiv.	49.9	312	362	822	1,180

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	41,600	14,300	55,900	8,190	64,100
Primary energy resources used as raw materials	MJ	14,600	0	14,600	0	14,600
Total use of renewable primary energy resources	MJ	56,300	14,300	70,600	8,190	78,800
Use of non-renewable primary energy	MJ	5,970	9,960	15,900	3,810	19,700
Non-renewable primary energy resources used as raw materials	MJ	1,610	0	1,610	0	1,610
Total use of non-renewable primary energy resources	MJ	7,580	9,960	17,500	3,810	21,400
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.61	35.2	37.9	77.6	115
Total use of non-renewable & renewable primary energy resources	MJ	63,829	24,284	88,113	11,998	1.00E+05
% Total use of renewable primary energy resources	MJ	88.1%	59.0%	80.1%	68.3%	78.7%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	7.42E-06	1.32E-06	8.74E-06	3.72E-07	9.11E-06
Non-hazardous waste disposed	kg	6.21	37.3	43.6	167	210
Radioactive waste disposed	kg	0.142	0.0451	0.187	0.0788	0.266
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Mega Toilet Roll-12

Article number(s): 2320367

1,000 kg air-dry tissue + 31 kg paper packaging + 27 kg plastic packaging = 1,058 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts		Manufacture			Transport + Wastewater treatment	
Indicator	**Unit**	**Upstream**	**Core**	**To Gate**	**Downstream**	**Total**
Climate change, total	kg CO_2-eq.	-3,300	2,820	-479	2,960	2,480
Climate change, fossil	kg CO_2-eq.	298	918	1,220	366	1,580
Climate change, biogenic	kg CO_2-eq.	-3,600	1,900	-1,700	2,590	891
Climate change, land use and land use change	kg CO_2-eq.	1.20	4.57	5.77	0.0621	5.83
Ozone depletion	kg CFC11-eq.	3.66E-09	5.16E-10	4.18E-09	6.63E-10	4.84E-09
Acidification	Mole of H^+ eq.	1.58	9.23	10.8	1.21	12.0
Eutrophication, freshwater	kg P eq.	0.00820	0.0471	0.0553	0.00180	0.0571
Eutrophication, marine	kg N eq.	0.576	2.78	3.35	1.18	4.53
Eutrophication, terrestrial	Mole of N eq.	6.01	30.5	36.5	4.92	41.4
Photochemical ozone formation, human health	kg NMVOC eq.	1.60	7.53	9.13	1.47	10.6
Resource use, mineral and metals	kg Sb-eq.	6.10E-05	5.84E-05	1.19E-04	5.63E-05	1.76E-04
Resource use, fossils	MJ	5,320	9,950	15,300	3,780	19,100
Water use	m^3 world equiv.	45.6	313	358	822	1,180

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	41,600	14,300	55,900	8,190	64,100
Primary energy resources used as raw materials	MJ	14,600	0	14,600	0	14,600
Total use of renewable primary energy resources	MJ	56,200	14,300	70,500	8,190	78,700
Use of non-renewable primary energy	MJ	5,350	9,960	15,300	3,780	19,100
Non-renewable primary energy resources used as raw materials	MJ	1,160	0	1,160	0	1,160
Total use of non-renewable primary energy resources	MJ	6,510	9,960	16,500	3,780	20,300
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.49	35.2	37.7	77.6	115
Total use of non-renewable & renewable primary energy resources	MJ	62,743	24,282	87,025	11,972	98,997
% Total use of renewable primary energy resources	MJ	89.6%	59.0%	81.1%	68.4%	79.5%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	7.39E-06	1.32E-06	8.71E-06	3.72E-07	9.08E-06
Non-hazardous waste disposed	kg	5.19	37.3	42.5	167	209
Radioactive waste disposed	kg	0.133	0.0451	0.178	0.0788	0.257
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Toilet Roll (Standard)-4

Article number(s): 2264599

1,000 kg air-dry tissue + 69 kg paper packaging + 65 kg plastic packaging = 1,134 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,250	2,820	-431	3,020	2,590
Climate change, fossil	kg CO_2-eq.	404	921	1,320	387	1,710
Climate change, biogenic	kg CO_2-eq.	-3,660	1,900	-1,760	2,640	876
Climate change, land use and land use change	kg CO_2-eq.	1.26	4.57	5.82	0.0623	5.89
Ozone depletion	kg CFC11-eq.	4.28E-09	5.16E-10	4.80E-09	6.65E-10	5.47E-09
Acidification	Mole of H^+ eq.	1.90	9.27	11.2	1.62	12.8
Eutrophication, freshwater	kg P eq.	0.00917	0.0471	0.0562	0.00180	0.0580
Eutrophication, marine	kg N eq.	0.694	2.80	3.49	1.30	4.79
Eutrophication, terrestrial	Mole of N eq.	7.26	30.7	37.9	6.28	44.2
Photochemical ozone formation, human health	kg NMVOC eq.	1.95	7.57	9.52	1.78	11.3
Resource use, mineral and metals	kg Sb-eq.	1.14E-04	5.85E-05	1.73E-04	5.66E-05	2.29E-04
Resource use, fossils	MJ	7,940	9,990	17,900	4,040	22,000
Water use	m^3 world equiv.	65.5	313	378	822	1,200

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	43,400	14,300	57,800	8,190	66,000
Primary energy resources used as raw materials	MJ	15,200	0	15,200	0	15,200
Total use of renewable primary energy resources	MJ	58,600	14,300	72,900	8,190	81,100
Use of non-renewable primary energy	MJ	8,010	10,000	18,000	4,040	22,100
Non-renewable primary energy resources used as raw materials	MJ	2,810	0	2,810	0	2,810
Total use of non-renewable primary energy resources	MJ	10,800	10,000	20,800	4,040	24,900
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	3.23	35.2	38.5	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	69,433	24,322	93,755	12,235	1.06E+05
% Total use of renewable primary energy resources	MJ	84.4%	58.9%	77.8%	67.0%	76.5%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.57E-05	1.32E-06	1.70E-05	3.72E-07	1.74E-05
Non-hazardous waste disposed	kg	10.5	37.3	47.8	167	215
Radioactive waste disposed	kg	0.176	0.0451	0.221	0.0788	0.300
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Toilet Roll (Standard)-12

Article number(s): 2294521

1,000 kg air-dry tissue + 69 kg paper packaging + 36 kg plastic packaging = 1,105 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts | **Manufacture** | **Transport + Wastewater treatment**

Indicator	Unit	Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,310	2,820	-492	3,030	2,540
Climate change, fossil	kg CO_2-eq.	344	920	1,260	391	1,660
Climate change, biogenic	kg CO_2-eq.	-3,660	1,900	-1,760	2,640	876
Climate change, land use and land use change	kg CO_2-eq.	1.25	4.56	5.81	0.0623	5.87
Ozone depletion	kg CFC11-eq.	4.20E-09	5.16E-10	4.72E-09	6.65E-10	5.38E-09
Acidification	Mole of H^+ eq.	1.79	9.26	11.1	1.83	12.9
Eutrophication, freshwater	kg P eq.	0.00910	0.0470	0.0561	0.00180	0.0579
Eutrophication, marine	kg N eq.	0.655	2.79	3.45	1.36	4.80
Eutrophication, terrestrial	Mole of N eq.	6.82	30.6	37.5	6.85	44.3
Photochemical ozone formation, human health	kg NMVOC eq.	1.83	7.56	9.40	1.93	11.3
Resource use, mineral and metals	kg Sb-eq.	7.80E-05	5.85E-05	1.36E-04	5.66E-05	1.93E-04
Resource use, fossils	MJ	6,270	9,980	16,300	4,090	20,300
Water use	m^3 world equiv.	53.4	312	366	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	43,300	14,300	57,700	8,190	65,800
Primary energy resources used as raw materials	MJ	15,200	0	15,200	0	15,200
Total use of renewable primary energy resources	MJ	58,500	14,300	72,800	8,190	81,000
Use of non-renewable primary energy	MJ	6,310	9,990	16,300	4,090	20,400
Non-renewable primary energy resources used as raw materials	MJ	1,570	0	1,570	0	1,570
Total use of non-renewable primary energy resources	MJ	7,880	9,990	17,900	4,090	22,000
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.90	35.2	38.1	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	66,381	24,308	90,689	12,282	1.03E+05
% Total use of renewable primary energy resources	MJ	88.1%	58.9%	80.3%	66.7%	78.7%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.56E-05	1.32E-06	1.69E-05	3.72E-07	1.73E-05
Non-hazardous waste disposed	kg	7.64	37.3	45.0	167	212
Radioactive waste disposed	kg	0.152	0.0450	0.197	0.0788	0.276
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Purex Toilet Roll (Standard)-24

Article number(s): 2304297

1,000 kg air-dry tissue + 80 kg paper packaging + 35 kg plastic packaging = 1,115 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,320	2,820	-504	3,030	2,530
Climate change, fossil	kg CO_2-eq.	351	921	1,270	380	1,650
Climate change, biogenic	kg CO_2-eq.	-3,680	1,890	-1,780	2,650	871
Climate change, land use and land use change	kg CO_2-eq.	1.26	4.56	5.82	0.0622	5.88
Ozone depletion	kg CFC11-eq.	4.35E-09	5.16E-10	4.86E-09	6.64E-10	5.53E-09
Acidification	Mole of H^+ eq.	1.83	9.28	11.1	1.49	12.6
Eutrophication, freshwater	kg P eq.	0.00935	0.0470	0.0564	0.00180	0.0582
Eutrophication, marine	kg N eq.	0.672	2.80	3.47	1.26	4.73
Eutrophication, terrestrial	Mole of N eq.	7.00	30.7	37.7	5.85	43.5
Photochemical ozone formation, human health	kg NMVOC eq.	1.89	7.58	9.46	1.69	11.1
Resource use, mineral and metals	kg Sb-eq.	7.80E-05	5.85E-05	1.36E-04	5.65E-05	1.93E-04
Resource use, fossils	MJ	6,340	9,990	16,300	3,960	20,300
Water use	m^3 world equiv.	54.0	312	366	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	43,800	14,300	58,100	8,190	66,300
Primary energy resources used as raw materials	MJ	15,300	0	15,300	0	15,300
Total use of renewable primary energy resources	MJ	59,200	14,300	73,500	8,190	81,700
Use of non-renewable primary energy	MJ	6,380	10,000	16,400	3,960	20,300
Non-renewable primary energy resources used as raw materials	MJ	1,500	0	1,500	0	1,500
Total use of non-renewable primary energy resources	MJ	7,880	10,000	17,900	3,960	21,800
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.99	35.2	38.2	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	67,037	24,315	91,352	12,153	1.04E+05
% Total use of renewable primary energy resources	MJ	88.2%	58.9%	80.4%	67.4%	78.9%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.79E-05	1.32E-06	1.92E-05	3.72E-07	1.96E-05
Non-hazardous waste disposed	kg	7.96	37.3	45.3	167	212
Radioactive waste disposed	kg	0.154	0.0450	0.199	0.0788	0.278
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Toilet Long Roll-4

Article number(s): 2314219

1,000 kg air-dry tissue + 37 kg paper packaging + 37 kg plastic packaging = 1,074 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,310	2,830	-478	2,980	2,500
Climate change, fossil	kg CO_2-eq.	313	913	1,230	376	1,600
Climate change, biogenic	kg CO_2-eq.	-3,620	1,910	-1,710	2,600	890
Climate change, land use and land use change	kg CO_2-eq.	1.22	4.60	5.82	0.0622	5.88
Ozone depletion	kg CFC11-eq.	3.76E-09	5.29E-10	4.29E-09	6.64E-10	4.96E-09
Acidification	Mole of H^+ eq.	1.64	9.23	10.9	1.66	12.5
Eutrophication, freshwater	kg P eq.	0.00837	0.0474	0.0557	0.00180	0.0575
Eutrophication, marine	kg N eq.	0.598	2.79	3.39	1.29	4.68
Eutrophication, terrestrial	Mole of N eq.	6.24	30.4	36.7	6.15	42.8
Photochemical ozone formation, human health	kg NMVOC eq.	1.65	7.56	9.21	1.79	11.0
Resource use, mineral and metals	kg Sb-eq.	7.28E-05	5.97E-05	1.32E-04	5.64E-05	1.89E-04
Resource use, fossils	MJ	5,660	9,990	15,600	3,900	19,500
Water use	m^3 world equiv.	50.3	323	373	822	1,200

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	42,100	13,800	55,900	8,190	64,100
Primary energy resources used as raw materials	MJ	14,700	0	14,700	0	14,700
Total use of renewable primary energy resources	MJ	56,900	13,800	70,600	8,190	78,800
Use of non-renewable primary energy	MJ	5,700	10,000	15,700	3,900	19,600
Non-renewable primary energy resources used as raw materials	MJ	1,600	0	1,600	0	1,600
Total use of non-renewable primary energy resources	MJ	7,300	10,000	17,300	3,900	21,200
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.51	36.2	38.7	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	64,163	23,782	87,944	12,092	1.00E+05
% Total use of renewable primary energy resources	MJ	88.6%	58.0%	80.3%	67.7%	78.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	8.64E-06	1.33E-06	9.96E-06	3.72E-07	1.03E-05
Non-hazardous waste disposed	kg	6.25	37.5	43.8	167	211
Radioactive waste disposed	kg	0.142	0.0454	0.188	0.0788	0.266
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Toilet Long Roll-8

Article number(s): 2314220

1,000 kg air-dry tissue + 49 kg paper packaging + 27 kg plastic packaging = 1,076 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,340	2,830	-509	2,990	2,480
Climate change, fossil	kg CO_2-eq.	300	913	1,210	372	1,590
Climate change, biogenic	kg CO_2-eq.	-3,640	1,910	-1,730	2,610	885
Climate change, land use and land use change	kg CO_2-eq.	1.23	4.60	5.83	0.0621	5.89
Ozone depletion	kg CFC11-eq.	3.90E-09	5.29E-10	4.43E-09	6.64E-10	5.10E-09
Acidification	Mole of H^+ eq.	1.65	9.24	10.9	1.53	12.4
Eutrophication, freshwater	kg P eq.	0.00863	0.0473	0.0560	0.00180	0.0578
Eutrophication, marine	kg N eq.	0.607	2.79	3.40	1.26	4.66
Eutrophication, terrestrial	Mole of N eq.	6.32	30.4	36.8	5.77	42.5
Photochemical ozone formation, human health	kg NMVOC eq.	1.68	7.57	9.24	1.69	10.9
Resource use, mineral and metals	kg Sb-eq.	6.23E-05	5.97E-05	1.22E-04	5.63E-05	1.78E-04
Resource use, fossils	MJ	5,210	9,990	15,200	3,840	19,000
Water use	m^3 world equiv.	47.6	323	371	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	42,700	13,800	56,500	8,190	64,700
Primary energy resources used as raw materials	MJ	14,900	0	14,900	0	14,900
Total use of renewable primary energy resources	MJ	57,600	13,800	71,400	8,190	79,500
Use of non-renewable primary energy	MJ	5,240	10,000	15,200	3,840	19,100
Non-renewable primary energy resources used as raw materials	MJ	1,170	0	1,170	0	1,170
Total use of non-renewable primary energy resources	MJ	6,410	10,000	16,400	3,840	20,300
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.48	36.2	38.7	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	63,980	23,784	87,765	12,035	99,800
% Total use of renewable primary energy resources	MJ	90.0%	58.0%	81.3%	68.1%	79.7%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.13E-05	1.33E-06	1.26E-05	3.72E-07	1.30E-05
Non-hazardous waste disposed	kg	5.80	37.5	43.3	167	210
Radioactive waste disposed	kg	0.138	0.0454	0.183	0.0788	0.262
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Toilet Long Roll (Hypo-allergenic)-8

Article number(s): 2327254

1,000 kg air-dry tissue + 49 kg paper packaging + 29 kg plastic packaging = 1,078 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,350	2,840	-513	3,000	2,480
Climate change, fossil	kg CO_2-eq.	295	914	1,210	384	1,590
Climate change, biogenic	kg CO_2-eq.	-3,650	1,920	-1,730	2,610	885
Climate change, land use and land use change	kg CO_2-eq.	1.24	4.62	5.86	0.0622	5.92
Ozone depletion	kg CFC11-eq.	3.90E-09	5.29E-10	4.43E-09	6.65E-10	5.10E-09
Acidification	Mole of H^+ eq.	1.66	9.28	10.9	1.82	12.7
Eutrophication, freshwater	kg P eq.	0.00866	0.0475	0.0562	0.00180	0.0580
Eutrophication, marine	kg N eq.	0.608	2.79	3.40	1.34	4.74
Eutrophication, terrestrial	Mole of N eq.	6.33	30.5	36.9	6.69	43.6
Photochemical ozone formation, human health	kg NMVOC eq.	1.67	7.57	9.24	1.91	11.2
Resource use, mineral and metals	kg Sb-eq.	6.28E-05	5.97E-05	1.22E-04	5.65E-05	1.79E-04
Resource use, fossils	MJ	5,050	9,950	15,000	4,000	19,000
Water use	m^3 world equiv.	48.2	322	371	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture: Upstream	Manufacture: Core	Manufacture: To Gate	Transport + Wastewater treatment: Downstream	Transport + Wastewater treatment: Total
Use of renewable primary energy	MJ	42,900	14,100	57,000	8,190	65,200
Primary energy resources used as raw materials	MJ	14,900	0	14,900	0	14,900
Total use of renewable primary energy resources	MJ	57,800	14,100	71,900	8,190	80,100
Use of non-renewable primary energy	MJ	5,080	9,960	15,000	4,010	19,000
Non-renewable primary energy resources used as raw materials	MJ	1,240	0	1,240	0	1,240
Total use of non-renewable primary energy resources	MJ	6,320	9,960	16,300	4,010	20,300
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.39	36.2	38.5	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	64,103	24,085	88,188	12,198	1.00E+05
% Total use of renewable primary energy resources	MJ	90.1%	58.6%	81.5%	67.2%	79.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.14E-05	1.33E-06	1.27E-05	3.72E-07	1.31E-05
Non-hazardous waste disposed	kg	5.84	37.6	43.4	167	210
Radioactive waste disposed	kg	0.138	0.0456	0.184	0.0788	0.263
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Toilet Long Roll (Hypo-allergenic)-12

Article number(s): 2314217

1,000 kg air-dry tissue + 40 kg paper packaging + 40 kg plastic packaging = 1,080 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,320	2,840	-480	2,990	2,510
Climate change, fossil	kg CO_2-eq.	314	914	1,230	384	1,610
Climate change, biogenic	kg CO_2-eq.	-3,630	1,920	-1,710	2,600	889
Climate change, land use and land use change	kg CO_2-eq.	1.23	4.62	5.85	0.0622	5.91
Ozone depletion	kg CFC11-eq.	3.80E-09	5.29E-10	4.33E-09	6.65E-10	4.99E-09
Acidification	Mole of H^+ eq.	1.66	9.27	10.9	1.82	12.7
Eutrophication, freshwater	kg P eq.	0.00845	0.0475	0.0560	0.00180	0.0578
Eutrophication, marine	kg N eq.	0.605	2.79	3.40	1.34	4.74
Eutrophication, terrestrial	Mole of N eq.	6.32	30.5	36.8	6.69	43.5
Photochemical ozone formation, human health	kg NMVOC eq.	1.67	7.57	9.23	1.91	11.1
Resource use, mineral and metals	kg Sb-eq.	7.54E-05	5.97E-05	1.35E-04	5.65E-05	1.92E-04
Resource use, fossils	MJ	5,660	9,950	15,600	4,000	19,600
Water use	m^3 world equiv.	51.7	322	374	822	1,200

Primary Energy Demand (PED)

Indicator	Unit	Manufacture: Upstream	Manufacture: Core	Manufacture: To Gate	Transport + Wastewater treatment: Downstream	Transport + Wastewater treatment: Total
Use of renewable primary energy	MJ	42,400	14,100	56,600	8,190	64,800
Primary energy resources used as raw materials	MJ	14,800	0	14,800	0	14,800
Total use of renewable primary energy resources	MJ	57,200	14,100	71,300	8,190	79,500
Use of non-renewable primary energy	MJ	5,710	9,960	15,700	4,010	19,700
Non-renewable primary energy resources used as raw materials	MJ	1,720	0	1,720	0	1,720
Total use of non-renewable primary energy resources	MJ	7,430	9,960	17,400	4,010	21,400
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.48	36.2	38.6	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	64,622	24,082	88,703	12,198	1.01E+05
% Total use of renewable primary energy resources	MJ	88.5%	58.6%	80.4%	67.2%	78.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	9.15E-06	1.33E-06	1.05E-05	3.72E-07	1.08E-05
Non-hazardous waste disposed	kg	6.53	37.6	44.1	167	211
Radioactive waste disposed	kg	0.145	0.0456	0.190	0.0788	0.269
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Thick & Large Roll-8

Article number(s): 2325518

1,000 kg air-dry tissue + 48 kg paper packaging + 31 kg plastic packaging = 1,078 kg total.

Content declaration: Paper >98% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,330	2,830	-502	2,980	2,480
Climate change, fossil	kg CO_2-eq.	306	914	1,220	369	1,590
Climate change, biogenic	kg CO_2-eq.	-3,640	1,910	-1,730	2,610	885
Climate change, land use and land use change	kg CO_2-eq.	1.23	4.60	5.83	0.0621	5.89
Ozone depletion	kg CFC11-eq.	3.90E-09	5.29E-10	4.43E-09	6.63E-10	5.09E-09
Acidification	Mole of H^+ eq.	1.66	9.24	10.9	1.30	12.2
Eutrophication, freshwater	kg P eq.	0.00862	0.0474	0.0560	0.00180	0.0578
Eutrophication, marine	kg N eq.	0.609	2.79	3.40	1.20	4.61
Eutrophication, terrestrial	Mole of N eq.	6.35	30.4	36.8	5.19	42.0
Photochemical ozone formation, human health	kg NMVOC eq.	1.68	7.57	9.25	1.54	10.8
Resource use, mineral and metals	kg Sb-eq.	6.63E-05	5.97E-05	1.26E-04	5.63E-05	1.82E-04
Resource use, fossils	MJ	5,360	9,990	15,400	3,810	19,200
Water use	m^3 world equiv.	48.9	323	372	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	42,700	13,800	56,400	8,190	64,600
Primary energy resources used as raw materials	MJ	14,900	0	14,900	0	14,900
Total use of renewable primary energy resources	MJ	57,500	13,800	71,300	8,190	79,500
Use of non-renewable primary energy	MJ	5,400	10,000	15,400	3,810	19,200
Non-renewable primary energy resources used as raw materials	MJ	1,320	0	1,320	0	1,320
Total use of non-renewable primary energy resources	MJ	6,720	10,000	16,700	3,810	20,500
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.50	36.2	38.7	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	64,246	23,787	88,033	12,002	1.00E+05
% Total use of renewable primary energy resources	MJ	89.5%	58.0%	81.0%	68.2%	79.5%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.11E-05	1.33E-06	1.24E-05	3.72E-07	1.28E-05
Non-hazardous waste disposed	kg	6.08	37.5	43.6	167	210
Radioactive waste disposed	kg	0.140	0.0454	0.186	0.0788	0.264
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Sorbent Thick & Large Roll (Hypo-allergenic)-8

Article number(s): 2325392

1,000 kg air-dry tissue + 48 kg paper packaging + 31 kg plastic packaging = 1,078 kg total.

Content declaration: Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

Potential Environmental Impacts

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Climate change, total	kg CO_2-eq.	-3,350	2,840	-508	2,980	2,470
Climate change, fossil	kg CO_2-eq.	298	914	1,210	369	1,580
Climate change, biogenic	kg CO_2-eq.	-3,640	1,920	-1,730	2,610	886
Climate change, land use and land use change	kg CO_2-eq.	1.24	4.62	5.86	0.0621	5.92
Ozone depletion	kg CFC11-eq.	3.89E-09	5.29E-10	4.42E-09	6.63E-10	5.08E-09
Acidification	Mole of H^+ eq.	1.66	9.28	10.9	1.30	12.2
Eutrophication, freshwater	kg P eq.	0.00863	0.0475	0.0562	0.00180	0.0580
Eutrophication, marine	kg N eq.	0.608	2.79	3.40	1.20	4.61
Eutrophication, terrestrial	Mole of N eq.	6.33	30.5	36.9	5.19	42.1
Photochemical ozone formation, human health	kg NMVOC eq.	1.67	7.57	9.24	1.54	10.8
Resource use, mineral and metals	kg Sb-eq.	6.49E-05	5.97E-05	1.25E-04	5.63E-05	1.81E-04
Resource use, fossils	MJ	5,140	9,950	15,100	3,810	18,900
Water use	m^3 world equiv.	48.9	322	371	822	1,190

Primary Energy Demand (PED)

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Use of renewable primary energy	MJ	42,800	14,100	57,000	8,190	65,100
Primary energy resources used as raw materials	MJ	14,900	0	14,900	0	14,900
Total use of renewable primary energy resources	MJ	57,700	14,100	71,800	8,190	80,000
Use of non-renewable primary energy	MJ	5,180	9,960	15,100	3,810	19,000
Non-renewable primary energy resources used as raw materials	MJ	1,310	0	1,310	0	1,310
Total use of non-renewable primary energy resources	MJ	6,490	9,960	16,500	3,810	20,300
Input of secondary material	kg	0	0	0	0	0
Use of renewable secondary fuels	MJ	0	0	0	0	0
Use of non renewable secondary fuels	MJ	0	0	0	0	0
Use of net fresh water	m^3	2.40	36.2	38.6	77.6	116
Total use of non-renewable & renewable primary energy resources	MJ	64,196	24,085	88,280	12,002	1.00E+05
% Total use of renewable primary energy resources	MJ	89.9%	58.6%	81.4%	68.2%	79.8%

Waste indicators

Indicator	Unit	Manufacture			Transport + Wastewater treatment	
		Upstream	Core	To Gate	Downstream	Total
Hazardous waste disposed	kg	1.11E-05	1.33E-06	1.24E-05	3.72E-07	1.28E-05
Non-hazardous waste disposed	kg	5.96	37.6	43.6	167	210
Radioactive waste disposed	kg	0.140	0.0456	0.185	0.0788	0.264
Components for re-use	kg	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0
Material for energy recovery	kg	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0

Material Circularity Indicators (MCIs)

Material Circularity Indicator (MCI) is a method for measuring how well a product performs in the context of a circular economy and aligns with ISO 59020 (ISO, 2024). It measures the degree to which a product system keeps materials in circulation at their highest form of value. It provides a common metric that applies to all of the different circular economy strategies including avoidance, durability, reuse, remanufacturing, recycling, regenerative sourcing, composting and energy recovery. The MCI can be reported as an MCI Score or as a percentage circularity (% MCI).

MCI Score: a value between 0 and 1 in which a score of 0.1 represents a linear system that uses only virgin, non-renewable materials and produces only non-recoverable waste and a score of 1 represents a perfectly circular system that uses only non-virgin or renewable materials and produces only recoverable waste. Values between 0 and 0.1 are reserved for products that consume more material, typically due to a lower utility than an average product. %MCI: is calculated using the same methodology and assumptions as the MCI Score but reports circularity on a scale from 0% (Linear) to 100% (Perfectly Circular) that is easier to understand and communicate.

The MCI has been reported as both an MCI Score and a percentage circularity (% MCI) in this EPD to support comparability. Although the methodology for MCI Score and %MCI is the same, the score cannot be directly transposed but needs to be converted per the methodology described by the Ellen MacArthur Foundation (Ellen MacArthur Foundation, 2019/2024).

The MCI results are based on material flows from the papermaking process onwards; the pulping process is excluded from the MCI material-flow analysis. Accordingly, all pulp inputs used in the papermaking process have been classified as “sustainably sourced biological material” as the pulp is Forestry Stewardship Council (FSC) certified.

A higher proportion of sustainably sourced biological inputs, such as pulp, and a greater proportion of material recovered through composting result in a higher MCI. These circularity results should be considered alongside the broader environmental-performance data presented in this EPD.

	Wastewater treatment	
Product	**MCI Score**	**% MCI**
Tork Soft Jumbo Toilet Roll Advanced T1	0.58	53%
Tork Jumbo Toilet Roll Universal T1	0.58	53%
Tork Soft Mini Jumbo Toilet Roll Advanced T2	0.57	52%
Tork Mini Jumbo Toilet Roll Universal T2	0.57	52%
Tork Extra Soft Conventional Toilet Roll Premium T4	0.59	54%
Tork Soft Conventional Toilet Roll Advanced T4	0.58	53%
Tork SmartOne® Mini Toilet Roll Advanced T9	0.58	53%
Purex Mega Toilet Roll-4	0.56	51%
Purex Mega Toilet Roll-6	0.56	51%
Purex Mega Toilet Roll-12	0.56	51%
Purex Toilet Roll (Standard)-4	0.58	53%
Purex Toilet Roll (Standard)-12	0.58	53%
Purex Toilet Roll (Standard)-24	0.58	53%
Sorbent Toilet Long Roll-4	0.57	52%
Sorbent Toilet Long Roll-8	0.57	52%
Sorbent Toilet Long Roll (Hypo-allergenic)-8	0.57	53%
Sorbent Toilet Long Roll (Hypo-allergenic)-12	0.57	52%
Sorbent Thick & Large Roll-8	0.57	52%
Sorbent Thick & Large Roll (Hypo-allergenic)-8	0.57	53%

References

APC (2014). National Recycling and Recovery Surveys (NRRS). Paper Packaging, Glass Containers, Steel Cans and Aluminium Packaging. Australian Packaging Covenant.

Australian Government (2015). National Inventory Report 2013. Volume 2. Available: https://www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications/national-inventory-report-2013.

Australian Government (2018). National Greenhouse Accounts Factors – July 2018. Available: https://www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications/national-greenhouse-accounts-factors-july-2018.

ECN (2012). Phyllis2, database for biomass and waste. Energy Research Centre of the Netherlands. Available: https://www.ecn.nl/phyllis2/.

Ellen MacArthur Foundation. (2019/2024). An approach to measuring circularity including 2024 addendum to add % MCI calculation.

EPD Australasia (2018). Instructions of the Australasian EPD Programme, Version 3.0, 18-09-2018. Available: https://epd-australasia.com/wp-content/uploads/2018/09/Australasian-Annex-to-GPI_3.0-2018.pdf.

Hyder Consulting Group (2007). Review of Methane Recovery and Flaring from Landfills. Australian Greenhouse Office, Department of Environment and Water Resources.

IEPDS (2017). General Programme Instructions for the International EPD® System, Version 3.0, 2017-12-11. Available: https://www.environdec.com/The-International-EPD-System/General-Programme-Instructions/

IEPDS. (2022). PCR 2011:05: Product Group Classification 32131, Tissue Products, Version 3.0.1. Stockholm: International EPD® System.

ISO. (2006). ISO 14025: 2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures. Geneva: International Organization for Standardization.

ISO. (2024). ISO 59020: 2024 Circular economy — Measuring and assessing circularity performance.

MBIE (2018). Data tables for electricity. Ministry of Business, Innovation & Employment. Available: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/electricity-statistics/

New Zealand Government (2015). New Zealand's Greenhouse Gas Inventory 1990-2013. New Zealand Ministry for the Environment. Available: http://www.mfe.govt.nz/publications/climate-change/new-zealands-greenhouse-gas-inventory-1990-2013.

OECD (1992). OECD Guideline for Testing of Chemicals: Biodegradability in Seawater. Test No. 306. Organisation for Economic Co-operation and Development. Available: http://www.oecd-ilibrary.org/environment/test-no-306-biodegradability-in-seawater_9789264070486-en.

PCNZ (2015). Review of packaging mass balance measurements. Packaging Council of New Zealand. Available: http://www.packaging.org.nz/attachments/docs/review-of-packaging-mass-balance-measurements.pdf.

SCS Wetherill Environmental (2002). National Greenhouse Gas Inventory from the Waste Sector 1990–2020. Wellington. Report commissioned by the New Zealand Ministry for the Environment.

Sphera (2022). GaBi life cycle inventory database documentation. Leinfelden-Echterdingen, Germany: thinkstep AG. Available: https://sphera.com/product-sustainability-gabi-data-search/

Watercare (2013). 2013 GRI Report. Available: https://www.watercare.co.nz/About-us/Reports-and-publications.

EPD registration and verification

Declaration owner:	**Essity Ltd** Web: www.essity.com **Email: customerservice.ANZ@essity.com** Post: 30-32 Westall Road, Springvale VIC 3171, Australia
EPD produced by:	**thinkstep Ltd** Web: www.thinkstep-anz.com Email: anz@thinkstep.com Post: 11 Rawhiti Road, Pukerua Bay 5026, Wellington, New Zealand
EPD programme operator:	**EPD International AB** Web: www.environdec.com Email: support@environdec.com Post: EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden
Licensee:	**EPD Australasia Ltd** Web: www.epd-australasia.com Email: info@epd-australasia.com Post: EPD Australasia Limited, 6 Cube Court, Richmond 7020, New Zealand
Product Category Rules (PCR):	PCR 2011:05 Tissue Products, Version 3.0.1, 2022-04-20
ANZSIC v1.0 classification:	C152400: “Sanitary Paper Product Manufacturing”
UN CPC v2 classification:	32131: “Toilet or facial tissue stock, towel or napkin stock and similar paper, cellulose wadding and webs of cellulose fibres”
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com.
Independent verification of the declaration and data, according to ISO 14025:2006:	☐ EPD process certification (Internal) ☑ EPD verification (External)
Third party verifier:	**Andrew D Moore, Life Cycle Logic** Web: http://www.lifecyclelogic.com.au Email: info@lifecyclelogic.com.au Post: PO Box 571, Fremantle WA 6959, Australia
Approved by:	**EPD Australasia Ltd** Procedure for follow-up of data during EPD validity involves third party verifier: ☑ Y ☐ N

Version history	v1.0 Initial release v1.1 Correction to POCP results v1.2 Addition of Tork Soft Mini Jumbo Toilet Roll T2 Advanced v1.3 Addition of Sorbent Hypo-Allergenic 12-Pack and Purex Mega 6-Pack v2.0 Revision of all data. Addition of new products across all categories. v3.0 Revision of all data from 2018 to 2022. Revision of impact indicators in line with EN15804+ A2. Addition of the following products to EPD: • Sorbent Thick & Large Roll-8 Removal of the following from EPD: • PUREX,TOILET,2P,DECOR,12SX4 • PUREX,TOILET,2P,DECOR,4SX12 • PUREX,TOILET,2P,DECOR,6SX12 • PUREX,TOILET,2P,WHITE,18SX4 • PUREX,TOILET;2P,DECOR,MEGA,4Sx6 • SORBENT,TOILET;EXT,3P,WHT,18Sx4 v3.1 Images for Purex 6 pack, Purex 12 pack and Sorbent Thick & Large Roll Hypo-allergenic 8 pack were updated. No changed to any data in the file. v4.0 Correction of data errors for affected products. Updated key parameters and assumptions: • Include details for biogenic carbon emissions from landfilling of biosolids generated during wastewater treatment. • Data collection period for new product. • Production data for all products has also been updated to 2025 for consistency. • Parameter for landfill methane capture rate (increased to 68%). Included MCI results. Addition of Tork SmartOne Advanced T9 product.

The EPD owner has the sole ownership, liability and responsibility for the EPD.