



## Environmental Product Declaration for Tork Xpressnap® Napkins

Produced under EPD Australasia in accordance with ISO 14025. EPD registration number: S-P-01541.

Version 1.0 of 30/09/2019. Approved 30/09/2019. Valid until 30/09/2022. Reference year: 2018 calendar year.

Geographical scope: Australia and New Zealand.

## Asaleo Care

Asaleo Care is a leader in Personal Care and Hygiene across Australasia, offering products that provide care, comfort and confidence every day.

The Company manufactures, markets, distributes and sells essential, everyday consumer products including tampons, pads and liners, nappies, toilet and facial tissue, paper towels, serviettes and disposable tableware. Our popular products are recognised household brands like Libra, TENA, Sorbent and Purex, Handee Ultra, Treasures, Deeko, Viti and Orchid.

Our professional hygiene products, which include hand towels, serviettes, toilet and facial tissue, soaps and other hygiene accessories, are sold under the Tork brand to the hospitality sector, schools, hospitals, shopping centres and industrial companies. Our TENA Incontinence Healthcare products and support services are provided to healthcare professionals in residential and community care facilities, retirement villages and hospitals.

Asaleo Care has 15 manufacturing and distribution facilities across Australia, New Zealand and the Pacific Islands. For more information, visit [www.asaleocare.com](http://www.asaleocare.com)



## Tork

Tork is the leading global brand in professional hygiene. From napkin dispensers in restaurant dining rooms to paper towels in hospital washrooms, Tork delivers a great experience for the user and a convenient experience for the buyer.

Tork is dedicated to serving your needs in a sustainable way – saving you time, money and effort, so you can focus on what matters most to your business.

Whenever you need to wipe, dry, clean or polish, we take care of it. Our range of dispensers, refills and services is designed to meet the specific needs of washrooms, industrial environments, kitchens and dining areas.

To learn more about Tork, please visit [www.tork.com.au](http://www.tork.com.au) or [www.tork.co.nz](http://www.tork.co.nz).

Tork is a registered trademark of Essity, licensed exclusively to Asaleo Care for use in Australia, New Zealand and a number of other countries in the Pacific region.

## Sustainability – a core part of how we do business

Sustainability is built into Tork Xpressnap® napkins from the start:

**We begin with 100% responsibly-sourced, non-controversial pulp.** In particular, 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. Our pulp is sourced from socially and environmentally sustainable forests in line with Forest Stewardship Council® (FSC®) standards, helping protect forests for present and future generations. The pulp that enters our Kawerau paper machines is from 100% FSC certified sources, with a maximum of 30% FSC Controlled Wood sources.

**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, AS/NZS 4801 and FSC chain of custody. In 2010, we replaced most of our natural gas consumption with geothermal steam in an ongoing partnership with Ngāti Tūwharetoa Geothermal Assets. In addition, our site's electricity comes from the New Zealand grid, comprising 84% renewable energy in 2018 (MBIE 2018). Consequently, since 2009 we have more than halved the greenhouse gas emissions generated from our Kawerau plant.

**We help our customers to reduce their environmental footprint** through their use of our unique consumption-reducing dispensers and recyclable packaging, both of which help to reduce waste. Our upgrade from bulky cardboard cartons with the Tork Carry Pack led to a six-fold reduction in packaging waste and six times less packaging to transport.

**We focus on continuous improvement** at Kawerau and in the past decade we have reduced water consumption by over 30%, reduced waste to landfill by a third and almost doubled our waste recycling rate.

This EPD helps to demonstrate Asaleo Care's commitment to sustainability and complements our work with eco-label and sustainability organisations such as FSC, Environmental Choice New Zealand, Sedex and the Dow Jones Sustainability Index.



Asaleo Care Paper Mill  
Kawerau, New Zealand

## 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

This EPD covers the Tork Xpressnap® White Dispenser Napkin. When paired with a Tork Xpressnap® Tabletop Dispenser (not included in this EPD), which dispenses napkins one-at-a-time, napkin consumption can be reduced by up to 25% compared to traditional dispenser napkin systems. This combination is ideal for limited service restaurants that offer napkins at the table. Dispensers are available in a broad range of contemporary colours, making it easy to match your décor.



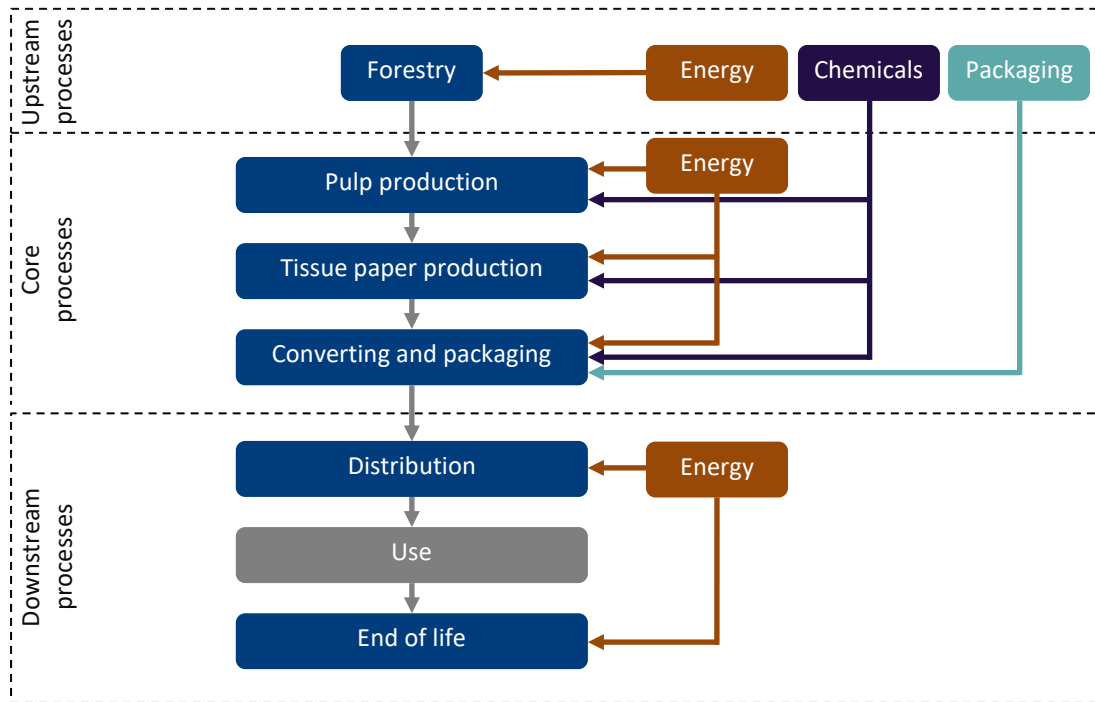
Tork Xpressnap® falls under the following industry classifications: ANZSIC v1.0 C152400 “Sanitary Paper Product Manufacturing” and UN CPC v2 32131 “Toilet or facial tissue stock, towel or napkin stock and similar paper, cellulose wadding and webs of cellulose fibres”.



### Tork Xpressnap® White Dispenser Napkin

- Single ply, white tissue paper
- FSC Mix 70% certified
- Unfolded sheet dimensions: 33.0 cm wide x 21.6 cm long
- Folded sheet dimensions: 16.2 cm wide x 11.2 cm long
- Net weight per pack of 500 napkins: 659 g
- Article: 2310917

## Life cycle of Tork® paper products



This EPD covers the full life cycle of paper towel 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 Asaleo Care'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 paper towel products are transported to customers. As the use of a paper towel has no direct environmental impacts, use is not included in this EPD. The final step is end-of-life, where the paper towel and its packaging are disposed. These are the **downstream processes**.

## Key parameters and assumptions for the LCA

- **Functional unit:** 1 tonne (1000 kg) of tissue paper as delivered, plus packaging.
- **Manufacturing site:** Kawerau, New Zealand.
- **Distribution to customer:** Distribution from the manufacturing plant to customer via Asaleo Care's warehouses is based on a sales-weighted average of the distances travelled in each transport mode (truck and container ship).
- **End of life:** Two options are provided for end-of-life: landfill and composting. Results are declared separately for each option in the results tables that follow.
 

77% of paper 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 in waste statistics (PCNZ 2015).

All waste treatment assumes truck transport of 50 km outbound with an empty backhaul. No credits are applied for recycling paper in line with the PCR (IEPDS 2015).
- **Biogenic carbon emissions from landfill:** From every kilogram of paper, 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 are representative of Australian conditions where data quality is best. They have been derived as follows:

  - 0.45 kg/kg = 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 CO<sub>2</sub> and 50% is CH<sub>4</sub> (ibid)
  - 36% of the CH<sub>4</sub> is captured, of which 75% is used for energy recovery and 25% is flared (Carre 2011, based on Hyder Consulting 2007)
  - 64% of the CH<sub>4</sub> is not captured, of which 90% is released to the atmosphere as CH<sub>4</sub> and 10% is oxidised to CO<sub>2</sub> in the landfill's surface (Australian Government 2018)
- **Biogenic carbon emissions from composting:** This EPD presents emissions from windrow composting – one of the most common types of industrial composting. Operational inputs are from UNSW (2003). 92% of the carbon in the paper is assumed to break down following Venelampi et al. (2003), with 9 kg methane released per tonne of paper (IPCC 2006).
- **Data for core processes:** Primary (specific) data were collected from Asaleo Care and our pulp suppliers as per the PCR (IEPDS 2015). Data are an annual average for the 2018 calendar year. Mono-nitrogen oxides (NO<sub>x</sub>) have been modelled as nitrogen dioxide (NO<sub>2</sub>) and Total Reduced Sulfur (TRS) has been modelled as hydrogen sulfide (H<sub>2</sub>S).
- **Data for upstream and downstream processes:** Secondary (generic) data were used for forestry, chemical production, packaging materials and electricity, as allowed under the PCR (IEPDS 2015). All data are from the GaBi Life Cycle Inventory Database 2019 and are typically representative of the years 2015 to 2018, depending on the dataset (thinkstep 2016).
- **Electricity mixes:** All electricity is based on national averages for 2016 from the GaBi Life Cycle Inventory Database 2019 (thinkstep 2019).
- **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 GaBi website (thinkstep 2019). 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 (IEPDS 2015). All other reported data were incorporated and modelled using the best available life cycle inventory data.

## Environmental indicators

Indicator	Description
Global Warming Potential (GWP)	Also known as carbon footprint, GWP is the potential of greenhouse gases – such as carbon dioxide and methane – to increase absorption of heat reaching Earth’s atmosphere, intensifying the natural greenhouse effect. Net emissions from fossil and biogenic sources are reported separately within this EPD. Biogenic GWP includes the removal of carbon dioxide from the atmosphere as trees grow and the release of this carbon at end-of-life.
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 Potential (EP)	The potential of emissions – such as nitrogen (N) and phosphorus (P) – to contribute to excessively high nutrient levels in both aquatic and terrestrial ecosystems, which can cause undesirable shifts in species composition and elevated biomass production (e.g. algal blooms).
Photochemical Ozone Creation Potential (POCP)	A measure of emissions of precursors that contribute to ground-level smog formation (mainly ozone, O <sub>3</sub> ). Ground-level ozone can be harmful to human and ecosystem health and can also damage crops.
Water	Consumption (net use) of water from lakes, rivers and groundwater. Consumption of rainwater in forests is not included in this EPD as there is currently no widely accepted method for determining a baseline water use case for forests against which consumption could be measured.
Primary Energy Demand (PED)	A measure of the total amount of primary energy extracted from the earth. PED is expressed in energy demand from non-renewable resources (e.g. petroleum, natural gas, etc.) and energy demand from renewable resources (e.g. biomass, hydropower, wind energy, etc.). Efficiencies in energy conversion (e.g. power, heat, steam, etc.) are taken into account.

# Tork Xpressnap® White Dispenser Napkin

**Article(s): 2310917**

1,000 kg air-dry tissue + 115 kg paper packaging + 0 kg plastic packaging = 1,115 kg total.  
 Paper >99% virgin kraft pulp. Bleaching agent: chlorine dioxide (elemental chlorine free).

**Potential Environmental Impacts**

Indicator	Unit
GWP (global warming), fossil	kg CO <sub>2</sub> e
GWP (global warming), biogenic	kg CO <sub>2</sub> e
GWP (global warming), total	kg CO <sub>2</sub> e
AP (acidification)	kg SO <sub>2</sub> e
EP (eutrophication)	kg PO <sub>4</sub> <sup>3-</sup> e
POCP (photochemical ozone)	kg C <sub>2</sub> H <sub>4</sub> e

**Manufacture**

Upstream	Core	To Gate
328	1,230	1,560
-3,660	1,830	-1,840
-3,340	3,060	-278
1.78	15.7	17.4
0.359	1.43	1.79
0.169	0.758	0.927

**Transport + Landfill**

Downstream	Total
150	1,710
3,160	1,330
3,310	3,030
2.34	19.8
0.605	2.40
0.595	1.52

**Transport + Compost**

Downstream	Total	Reduction
113	1,670	-2%
1,960	125	-91%
2,070	1,790	-41%
1.99	19.4	-2%
0.261	2.05	-15%
0.118	1.04	-32%

**Primary Energy Demand (PED)**

Indicator	Unit
PED (energy), renewable	MJ
PED (energy), non-renewable	MJ
PED (energy), total	MJ
PED (energy), % renewable	%

**Manufacture**

Upstream	Core	To Gate
44,900	27,700	72,600
4,820	15,200	20,000
49,700	42,900	92,600
90.3%	64.5%	78.4%

**Transport + Landfill**

Downstream	Total
71.0	72,700
2,020	22,100
2,090	94,700
3.4%	76.7%

**Transport + Compost**

Downstream	Total	Reduction
12.3	72,600	0%
1,380	21,400	-3%
1,390	94,000	-1%
0.9%	77.2%	

**Waste**

Indicator	Unit
Hazardous waste	kg
Non-hazardous waste	kg

**Manufacture**

Upstream	Core	To Gate
4.15E-05	7.33E-06	4.89E-05
4.36	42.4	46.7

**Transport + Landfill**

Downstream	Total
1.60E-06	5.05E-05
221	267

**Transport + Compost**

Downstream	Total	Reduction
1.51E-07	4.90E-05	-3%
7.11	53.9	-80%



## Tork Xpressnap® White Dispenser Napkin cntd.

### Resource Use

Category	Flow	Unit
----------	------	------

### Manufacture

Upstream	Core	To Gate
----------	------	---------

### Transport + Landfill

Downstream	Total
------------	-------

### Transport + Compost

Downstream	Total	Reduction
------------	-------	-----------

#### Non-renewable resources

Materials	Total	kg
Inert rock		kg
Calcium carbonate		kg
Natural aggregate		kg
Soil		kg
Quartz sand		kg
Sodium chloride		kg
Other		kg
Energy	Total	kg
Natural gas		kg
Crude oil		kg
Hard coal		kg
Lignite		kg
Shale gas		kg
Tight gas		kg
Other		kg

<b>158</b>	<b>760</b>	<b>917</b>
166	623	789
45.0	9.56	54.6
3.20	57.1	60.3
-91.5	58.9	-32.6
0.355	1.40	1.76
24.0	0.464	24.4
10.3	9.39	19.7
<b>125</b>	<b>379</b>	<b>505</b>
29.0	243	272
39.9	60.9	101
33.4	48.4	81.8
14.1	22.3	36.3
4.97	0.687	5.66
2.14	2.28	4.42
1.55	1.75	3.30

<b>194</b>	<b>1,110</b>
0.448	790
2.09	56.7
62.2	123
26.6	-6.03
36.1	37.8
0.361	24.8
66.2	85.9
<b>51.6</b>	<b>556</b>
11.6	284
31.2	132
2.97	84.8
4.94	41.3
0.00119	5.66
0.00105	4.42
0.913	4.21

<b>7.41</b>	<b>925</b>	<b>-17%</b>
0.986	790	0%
0.106	54.7	-4%
2.06	62.4	-49%
0.920	-31.7	-426%
1.16	2.92	-92%
0.0117	24.5	-1%
2.16	21.8	-75%
<b>33.2</b>	<b>538</b>	<b>-3%</b>
1.71	274	-4%
30.3	131	-1%
0.518	82.3	-3%
0.638	37.0	-10%
8.51E-04	5.66	0%
6.58E-04	4.42	0%
0.0929	3.39	-19%

#### Renewable resources

Materials	Biomass (dry)	kg
Energy	Total	MJ
Biomass		MJ
Geothermal		MJ
Hydro power		MJ
Wind		MJ
Other		MJ

<b>1,000</b>	<b>0</b>	<b>1,000</b>
<b>25,700</b>	<b>27,700</b>	<b>53,400</b>
25,100	941	26,000
364	18,400	18,800
122	6,980	7,100
126	1,320	1,440
1.12E-04	1.31E-10	1.12E-04

<b>0</b>	<b>1,000</b>
<b>71.0</b>	<b>53,400</b>
45.4	26,100
2.77	18,800
8.48	7,110
14.4	1,460
1.91E-11	1.12E-04

<b>0</b>	<b>1,000</b>	<b>0%</b>
<b>12.3</b>	<b>53,400</b>	<b>0%</b>
9.63	26,000	0%
0.190	18,800	0%
1.10	7,100	0%
1.40	1,440	-1%
1.79E-12	1.12E-04	0%

#### Water (consumption of surface and ground water)

Total	kg
Direct	kg

11,000	55,300	66,400
	9,170	

349	66,700
-----	--------

24.1	66,400	0%
------	--------	----

## References

- APC (2014). National Recycling and Recovery Surveys (NRRS). Paper Packaging, Glass Containers, Steel Cans and Aluminium Packaging. Australian Packaging Covenant. Available: [http://www.packagingcovenant.org.au/data/Publications/NRRS\\_Executive\\_Summary\\_2013-14\\_FINAL.pdf](http://www.packagingcovenant.org.au/data/Publications/NRRS_Executive_Summary_2013-14_FINAL.pdf)
- 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>
- Carre, A. (2011). A Comparative Life Cycle Assessment of Alternative Constructions of a Typical Australian House Design. Melbourne: Forest & Wood Products Australia. Available at [http://www.fwpa.com.au/images/marketaccess/PNA147-0809\\_Research\\_Report\\_Comparative-LCA\\_0.pdf](http://www.fwpa.com.au/images/marketaccess/PNA147-0809_Research_Report_Comparative-LCA_0.pdf)
- 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](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 (2015). PCR 2011:05, Tissue Products, Version 2.0, 2015-10-01. Stockholm: International EPD® System. Available: <http://www.environdec.com/en/PCR/Detail/?Pcr=5966>
- 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/>
- IPCC (2006). 2006 IPCC Guidelines for National Greenhouse Gas Inventories - Chapter 4: Biological treatment of solid waste. Intergovernmental Panel on Climate Change.
- ISO 14025:2006. Environmental labels and declarations — Type III environmental declarations — Principles and procedures. Geneva: International Organization for Standardization.
- 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/>
- 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>
- thinkstep (2019). GaBi life cycle inventory database documentation. Leinfelden-Echterdingen, Germany: thinkstep AG. Available: <http://www.gabi-software.com/support/gabi/gabi-database-2019-lci-documentation/>
- UNSW (2003). Life Cycle Inventory and Life Cycle Assessment of Windrow Composting Systems. Recycled Organics Unit, the University of New South Wales.
- Venelampi, O., Weber, A., Rönkkö, T., & Itävaara, M. (2003). The Biodegradation and Disintegration of Paper Products in the Composting Environment. *Compost Science & Utilization*, 11:3, 200-209.

## EPD registration and verification

**Declaration owner:**



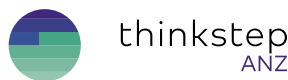
**Asaleo Care Ltd**

Web: <http://www.asaleocare.com>

Email: [customerservice@asaleocare.com](mailto:customerservice@asaleocare.com)

Post: 30-32 Westall Road, Springvale VIC 3171, Australia

**EPD produced by:**



**thinkstep Ltd**

Web: [www.thinkstep-anz.com](http://www.thinkstep-anz.com)

Email: [anz@thinkstep.com](mailto:anz@thinkstep.com)

Post: 11 Rawhiti Road, Pukerua Bay 5026, Wellington, New Zealand

**EPD programme operator:**



**EPD Australasia Ltd**

Web: <http://www.epd-australasia.com>

Email: [info@epd-australasia.com](mailto:info@epd-australasia.com)

Post: 315a Hardy Street, Nelson 7010, New Zealand

**Product Category Rules (PCR):**

**PCR 2011:05 Tissue Products, Version 2.0, 2015-10-01**

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](mailto: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:**



**Life Cycle Logic**

**Andrew D Moore, Life Cycle Logic**

Web: <http://www.lifecyclelogic.com.au>

Email: [info@lifecyclelogic.com.au](mailto:info@lifecyclelogic.com.au)

Post: PO Box 571, Fremantle WA 6959, Australia

Approved by:

EPD Australasia Ltd

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