Dulux®

Worth doing, worth Dulux.

Environmental Product Declaration

Dulux UltraAir

AUSTRALASIA EPD®

ENVIRONMENTAL PRODUCT DECLARATION

ECO PLATFORM EPD EN 15804 VERIFIED

EPD registration number:	S-P-02057
Version:	1.0
Issued:	2021-11-15
Valid until:	2026-11-15
Geographical scope:	Australia
In accordance with:	ISO 14025 and EN 15804+A2

About this EPD

What is an EPD?

An Environmental Product Declaration (EPD) is different to a product eco-label in that it doesn't tell you if a product is good or bad. Instead, it provides you the data required to understand the environmental performance of our products in your project.

This EPD is part of our commitment to provide transparency on the potential environmental impacts of the Dulux UltraAir preparation, broadwall, trim and ceiling paint system over its life cycle, including manufacture, packaging, distribution, application and end of life.

Using an EPD

This EPD contributes to the achievement of credits under Green Star®, WELL™ and other leading green building rating schemes.

EPDs can also be used to provide:

- Cradle-to-grave performance (Modules A-C) and potential future benefits outside the product system
- Emission factors for use in Scope 3 carbon footprint calculations of your supply chain
- Carbon footprint data so that you can offset it to become carbon neutral
- A wide range of environmental metrics, such as water, energy and waste that go beyond carbon

Take Care when Comparing

This EPD complies with EN 15804:2012+A2:2019 and may not be comparable with EPDs from different programs.

Points to consider when comparing data across different EPDs:

- Both EPDs must comply with the comparability requirements in EN 15804 e.g. using equivalent methodology and assumptions such as utilising the same Product Category Rules (PCR) and Declared Unit
- The results for EN 15804+A2 compliant EPDs are not necessarily comparable with EN 15804+A1 compliant studies as the standards are different. The EN 15804+A1 indicator results are also included in this EPD, following the guidance of the Australasian EPD System
- LCA provides high-level scientific guidance and differences in data should be substantial to the material
- Expert analysis is required to understand the detail and ensure data is truly comparable, to avoid unintended distortions
- The best way to compare products and materiality of differences is to place them into the context of a structure across the whole life cycle

The data presented in this EPD can be quite technical, so if you need help interpreting the data, please contact sustainability@duluxgroup.com.au

Photographer: Lisa Cohen
Stylist: Bree Leech

EPDs within the same product category from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

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

Owner

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Product Category Rules (PCR)

PCR	PCR 2019:14 Construction products (EN 15804+A2), Version 1.11
PCR review was conducted by:	The Technical Committee of the International EPD® System
Chair:	Massimo Marino info@environdec.com

Third Party Verifier

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Approved by:	EPD Australasia Ltd
Independent third-party verification of the declaration and data, according to ISO 14025:2006	☐ EPD Process Certification (Internal) ☑ EPD Verification (External)
Procedure for follow up of data involves third-party verifier:	☐ Yes ☑ No

About Dulux

For generations, consumers and customers have trusted Dulux for premium and long-lasting coatings for residential and commercial properties, and we are proud to have been voted Australia's Most Trusted Paint Brand* each year since 2013.

Committed to a Sustainable Future

Staying at the forefront of technology and investing in research & development is fundamental to building sustainable solutions. Dulux is committed to continually developing new solutions that help reduce environmental impact and adhere to industry standards.

Product Stewardship

Improving the impact of our products through their life cycle (cradle to grave) is an important priority. Our product stewardship knowledge and management approach continues to evolve over time as technology, regulations and community concerns change. Our continuous improvement approach is driven via an annual product risk assessment process that identifies actions in priority areas such as consumer safety, product misuse, post-consumer waste, raw material impacts, packaging and labelling, and distribution. This stewardship process comprises key initiatives such as managing the risks associated with hazardous chemicals, formal supplier evaluations against the requirements of our sustainable procurement policy and commitment to limit our impact to climate change and carbon footprint.

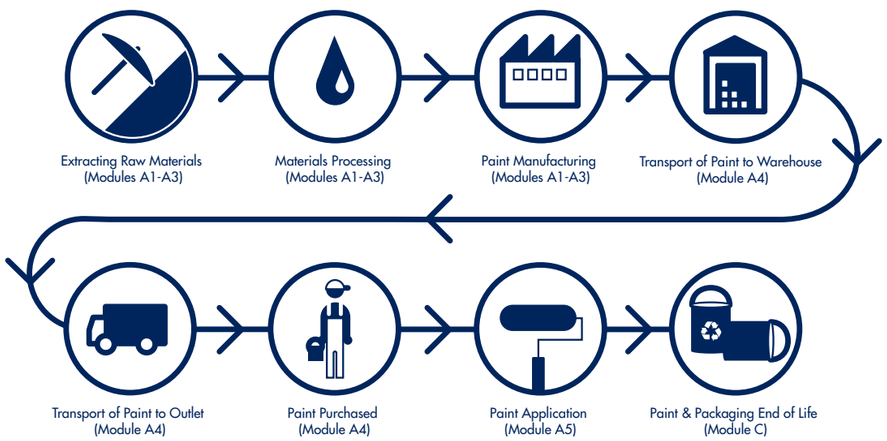
Manufacturing & Operations

Our world class manufacturing facility has implemented technology to reduce Dulux's environmental impact, including 300kW solar power generation, rain harvesting and on-site waste water management. Dulux manages the environmental performance of our operations through an integrated safety and sustainability management system to continuously deliver improvements across all facets such as safety and disaster prevention, environmental risks, waste generation, energy and water consumption.

Post-consumer Waste Management

Dulux is a founding member of Paintback®, an initiative to responsibly dispose of unwanted paint and packaging via collection and treatment facilities. Paintback repurposes the valuable materials in leftover paint into recycled packaging, alternative energy fuel as well as water resources and is funding research to find better uses for unwanted paint and packaging waste.

*Reader's Digest Most Trusted Brands 2013-2021 – Australia



Communities

Our businesses and employees help more than 250 local community organisations through fundraising, volunteering, provision of products and direct donations. Some of the organisations that we've contributed to are:

- Beyond Blue
- e.motion21
- Kickstart 4 Kids
- Second Chance Animal Rescue
- Schools, garden clubs and community organisations throughout Australia and New
- Australian Men's Shed Association

In addition, our formal partnerships aims to support the next generation of industry and community leaders:

- The Dulux Colour Awards, which celebrate the most creative and considered use of colour in residential, commercial and student architecture and interior design.
- Dulux sponsors the Melbourne School of Design (MSD) at Melbourne University to foster excellence in architectural education.
- The Dulux Study Tour, which supports Australia's next generation of talented architects.
- Dulux is helping to paint every Surf Life Saving Club in Australia – helping to protect the assets that protect and support our community.

Memberships

Dulux is a proud member of the Green Building Council of Australia (GBCA), a founding member of Paintback Australia's national waste paint and packaging program, a founding member of the Australian Supply Chain Sustainability School (ACSC) and maintains strong links with key industry bodies.

Dulux UltraAir

Ultra Low Chemical Emissions, Ultra Low Odour premium water based paint. Proven to emit fewer chemical emissions, Dulux UltraAir maintains your indoor air quality. This is the first range in Australia to have GREENGUARD Gold certification. Available in Interior Walls (Low Sheen and Matt), Interior Primer and Ceiling White, you can complete an entire indoor project.

Table 1: Dulux UltraAir Paints included in this EPD

Product Code	Product	Gloss Level	Colour Base	Spread Rate m^2/L	Coats	L/m^2*	kg/m^2	VOC g/L
52ED0190	UltraAir Interior Walls	Low Sheen	Vivid White	16	2	0.125	0.174	0.32
52ED0194	UltraAir Interior Walls	Matt	Vivid White	16	2	0.125	0.169	0.32
52ED0189	UltraAir Ceiling White	Flat	N/A	16	2	0.125	0.165	0.17
52ED0186	UltraAir Interior Primer	Flat	N/A	12	1	0.083	0.115	0.32

*All per m^2 values relate to the declared unit, which is the paint required for $1m^2$ of coated surface using the number of coats recommenced by AS/NZS 2311:2009.

Why Choose Dulux UltraAir?

ULTRA LOW CHEMICAL EMISSIONS*

BACK IN THE ROOM SOONER

ULTRA LOW ODOUR

LASTING FINISH

Ultra Low Chemical Emissions*
Chemical Emissions (fumes) are released from the paint into the air whilst painting. Dulux UltraAir is proven to emit significantly fewer chemical emissions than regular paint.

Ultra Low Odour
Ensures that occupants can move in and enjoy their freshly painted spaces sooner.

Very Low VOC
Volatile Organic Compounds (VOC) impact indoor air quality which relates to the health and comfort of the occupants. UltraAir is a Ultra Low Chemical Emissions, Ultra Low Odour range of paints that help maintain indoor air quality. The entire Dulux UltraAir range has <0.5/L VOC^.

GREENGUARD Certified products
are scientifically proven to meet some of the world's most rigorous, third-party chemical emissions standards, helping to reduce the contribution to indoor air pollution and the risk of chemical exposure, while aiding in maintaining healthier indoor environments.

Global GreenTag GreenRate™ Level A
A standards based product health and sustainability rating system for green design, procurement, facilities management professionals seeking to achieve Green Star or WELL project certifications. All certified products are fit-for-purpose tested and rated on its performance to comply with green building standards.

The 'A' Rated Choice
Dulux UltraAir can contribute to the achievement of green building project credits with its certifications by one of the most robust, trusted and globally recognised eco-certification program, Global GreenTag™.

Global GreenTag HealthRate™ Platinum Health
A world leading rating on the healthiness of a product for end users, with full disclosure and transparency of product toxicity information. It provides explanations of health or environmental toxicity implications in commercial and residential buildings.

^Very Low VOC: <1g/L VOC (Volatile Organic Compound) untinted and when tinted with Dulux Decorama tinters. VOC content is calculated in accordance with APAS Australian Testing Standards. Visit apas.gov.au for further information.
*Ultra Low Chemical Emissions: Passes Shanghai Research Institute of Building Sciences test method JG/T 481-2015 with emission limits of <1mg/m3 within 3 days.

Product Life Cycle Overview

This EPD and the underlying LCA comply with the following standards:

- PCR 2019:14 Construction products (EN 15804+A2), Version 1.11 (EPD International, 2021)
- Instructions of the EPD Australasia Programme v3.0 (AEPDS, 2018)
- The International EPD System General Programme Instructions (GPI) v3.01 (EPD International, 2019)
- ISO standards on Life Cycle Assessment (ISO 14040, 2006) (ISO 14044, 2006)

The expired standard 'PCR 2014:05 Paints, Varnishes and Related Products' (EPD International, 2014) was used to inform the EPD when PCR 2019:14 was not specific enough.

Declared Unit

This EPD is valid for a declared unit of 1m^2 of coated surface using the number of coats recommended by AS/NZS 2311:2009 (as shown in Table 1 on page 6).

Content Declaration

The mass of tinplate pail corresponding to the declared unit is 7.8 grams for the Interior Primer and 11.7 grams for the other products. The paints included in this EPD are proprietary and as such a detailed content declaration cannot be given. Ranges have instead been provided, as seen below. None of the products in this EPD contain hazardous materials identified in the European Chemicals Agency's Candidate List of Substances of Very High Concern (SVHC) (ECHA, 2020) at a concentration of greater than 0.1% of the mass.

Material Type	Composition Range (All Products)
Monomers (e.g. acrylates)	5-16%
Pigments (e.g. titanium dioxide)	17-21%
Extenders (e.g. kaolin, perlite)	15-17%
Water	42-55%

Industry Classification

Product	Classification	Code	Category
All	UN CPC Ver.2	35110	Paints and varnishes and related products
	ANZSIC 2006	C191600	Paint and Coatings Manufacturing

Scope

This EPD is of the cradle-to-gate type with options. It includes EN 15804 Modules A1-A5, C1-C4 and D (see Table 2).
These modules are for paint production (A1-A3), transport to customer (A4), paint application (A5), deconstruction (C1), end-of-life transport (C2), waste processing (C3), disposal (C4) and recycling potential for future product systems (D).
This is a product specific EPD.

Other life cycle stages (Modules B1-B7) are dependent on particular scenarios and best modelled at the building level.

Using this EPD

All EPDs declare the impacts of 1m^2 of painted surface, assuming the recommended number of coats and typical coverage rates.

To calculate the impacts of a paint system, add the results of the prepcoat and topcoat together for each module separately (A1-A3, A4, A5, etc.)

If you would prefer to access the data within a Life Cycle Assessment (LCA) software tool, please contact sustainability@duluxgroup.com.au

System Boundaries

Table 2: Modules Included in the Scope of the EPD

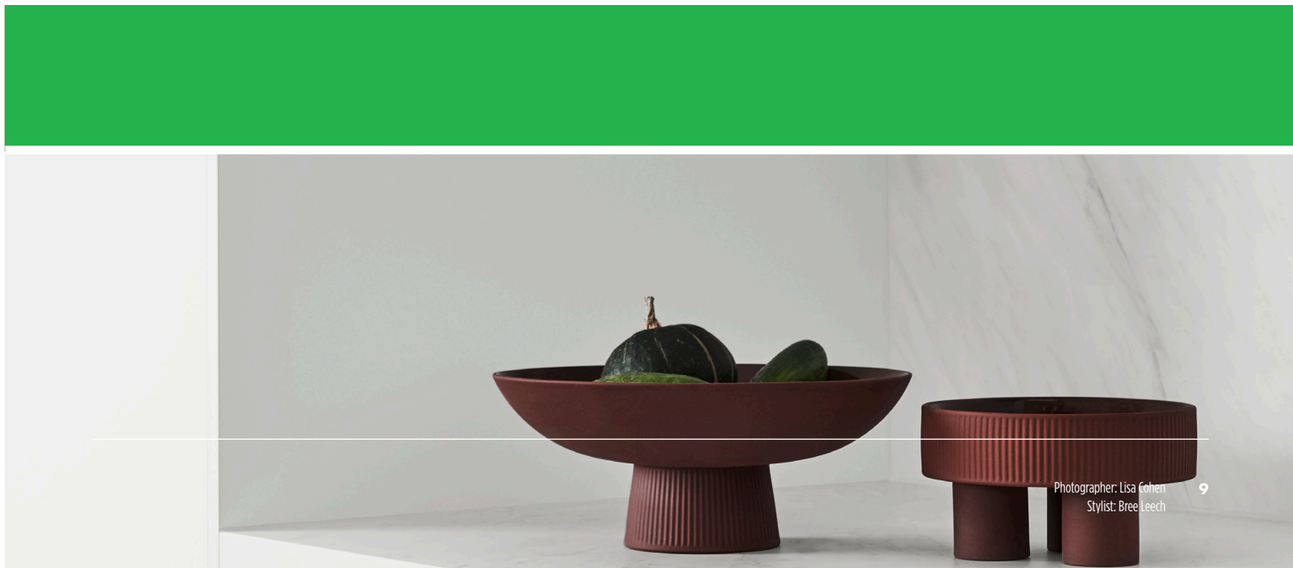
	Raw material supply	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport	Waste processing	Disposal	Future reuse, recycling or energy recovery potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	**X**	**X**	**X**	**X**	**X**	ND	ND	ND	ND	ND	ND	ND	**X**	**X**	**X**	**X**	**X**
Geography	World	AU	AU	-	-	-	-	-	-	-	-	-	AU	AU	AU	AU	AU
Specific data	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	<10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

X = declared module; ND = module not declared (such a declaration shall not be regarded as an indicator of a zero result)

Production (Modules A1-A3)

The production stage includes extraction and processing of raw materials, transport to Dulux, paint manufacture and packaging. All paints in this EPD assume production by Dulux at our primary production facility in Merrifield, Victoria. Paint manufacture involves mixing of carefully selected and measured ingredients to ensure that the paint meets desired properties.

The results in this EPD are reported for the largest packaging size available, as this is the size class intended for commercial painters. The packaging material (tinplated steel or polypropylene) and size (in litres) is noted above each results table later in this EPD. If the potential environmental impacts of alternative packaging sizes fall within ±10% for Modules A1-A3, this is also noted above the table. In these cases, the results for the declared packaging size also apply to these alternative packaging sizes for Modules A1-A3.



Photographer: Lisa Cohen
Stylist: Bree Leech

System Boundaries
Continued

Distribution to Customer (Module A4)

Packaged paint is distributed to a typical Australian customer via distribution hubs and then either (1) couriered to customer, or (2) collected by the customer from a store, for example a Dulux Trade Centre or other paint stockist. Product couriered to customer assumes delivery by a diesel van or light truck. Product collected in-store assumes that the customer travels 18km (round-trip) in a diesel van.

Where a given paint must be tinted before use, the typical volume of tinter is mixed in at the retailer and therefore included within Module A4, as is electricity for mixing the tinter, plus disposal of tinter packaging.

Application (Module A5)

Paint is applied to the surface (e.g. a wall or ceiling). Paint waste rates can vary significantly by the type of painter and project (e.g. commercial vs. DIY). The waste rates in this EPD assume a commercial painting scenario and are based on values measured by one of Dulux's professional painters onto plasterboard in a controlled test environment. Under these conditions, a total of 1.5% of the paint was lost during application (assuming a 15L pail), of which 1% was left in the pail and is assumed to be landfilled and 0.5% was left on the roller and is assumed to go to waste water treatment following washing. While not included in this EPD, the use of a Dulux EnviroWash™ System to treat the water would reduce the amount of paint discharged to waste water.

Dulux continues to investigate available options to increase the recycling rate of leftover paint and paint packaging. Currently the recycling rate is relatively low at a national level and it is all assumed to be landfilled within this study as a conservative approach.

Based on Australian average recycling rates for steel cans and polypropylene packaging, 41% of all tinplated steel pails and 22.5% of all polypropylene pails are assumed to be recycled respectively, with the remainder landfilled (APC 2015). No recycling data specific to paint packaging in Australia was available at the time of publication.

End-of-life (Module C)

The end-of-life stage covers disposal of remnant paint on a surface when that surface reaches the end of its useful life, e.g. during building renovation or demolition. In Australia, such waste materials are typically disposed of and hence we have assumed 100% of the paint ends up in landfill. Module C1 involves the deconstruction of the building and Module C2 includes transport of the waste paint to landfill and Module C4 is disposal in landfill. As the paint goes straight to landfill, there is no processing and Module C3 has a value of zero.

Recovery & Recycling Potential (Module D)

Module D includes the potential loads and benefits from recycling paint pails at the end of life.

Key Assumptions for the LCA

Data for Core Processes

Primary (specific) data were used for all manufacturing operations at Dulux's Merrifield plant. Data are an average for the year from October 2019 to September 2020.

Data for Upstream and Downstream Processes

Secondary (generic) data from the GaBi Life Cycle Inventory Database 2020 (Sphera 2020) and the European Life Cycle Database (ELCD 2016) were used for all energy inputs, raw materials and transport processes. Most datasets have a reference year between 2016 and 2019 and all fall within the 10 year limit for generic data under EN 15804.

Geographical Representativeness

Data for energy and transport reflect Australian conditions. Most upstream (supply chain) data used were from the USA and Europe due to a lack of consistent life cycle inventory data for Australia at the time this study was conducted. The titanium dioxide data from the Titanium Dioxide Manufacturers Association (TDMA) reflects global average production (ELCD 2016) and is considered best available data to produce a paint EPD.

VOC Emissions in Module A5

It is assumed that all volatile components present in the paint evaporate in Module A5 as generic non-methane volatile organic compounds (NMVOCs).

Electricity

Electricity for production is based on the average electricity mix in Victoria. Electricity for warehousing, tinting/mixing in-store and end of life assume the average Australian electricity mix as these downstream scenarios are designed to reflect a typical customer.

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 (EPD International, 2021, section 7.6). All other reported data were incorporated and modelled using the best available life cycle inventory data.

Allocation

Where subdivision of processes was not possible, the allocation rules listed in PCR chapter 7.7 have been applied. Allocation was primarily done by volume or mass, e.g. manufacturing overheads were attributed to the various paints based on their volume. No co-product allocation is relevant for paints. Scrap packaging (polypropylene and steel) is sent to Module D.

Application

Paint is assumed to be applied using a roller, rather than a spray-gun or brush. One roller wash (using 1 litre of water) is needed per pail. Production of roller and paint tray are not included in the LCA, as these can be reused many times before disposal.

Photographer: Lisa Cohen
Stylist: Bree Leech
Artwork: 'Sois Belle 5.3 by Annielie Vandendael

Photographer: Lisa Cohen
Stylist: Bree Leech

Environmental Indicators

Key environmental indicators are defined below, alongside their notable ramifications.

All indicators represent the potential to cause environmental impacts; they do not predict if specific environmental thresholds, safety margins or risks will be exceeded. The actual impacts on the environment typically depend upon local, regional and/or global conditions.

Global Warming Potential (GWP) > Climate Change or Carbon Footprint

A measure of greenhouse gas emissions, such as carbon dioxide and methane. These emissions increase absorption of radiation emitted by the earth, intensifying the natural greenhouse effect.

Eutrophication Potential (EP) > Algal Blooms

A measure of nutrient enrichment that may cause an undesirable shift in species composition and elevated biomass production in both aquatic and terrestrial ecosystems. It includes potential impacts of excessively high levels of macronutrients, the most important of which are nitrogen (N) and phosphorus (P). The three types of eutrophication considered in this EPD are marine (in oceans), freshwater (in rivers and lakes) and terrestrial (on dry land).

Ozone Depletion Potential (ODP) > Ozone Hole

A measure of how much damage a chemical can cause to the ozone layer compared with a similar mass of trichlorofluoromethane (CFC-11). The higher the number, the more damage a chemical can cause to the ozone layer. Carbon dioxide, a naturally occurring greenhouse gas, has an ozone depleting potential of 0.

Photochemical Ozone Formation Potential (POFP) > Smog

A measure of emissions of precursors that contribute to ground level smog formation (mainly ozone O_3), produced by the reaction of volatile organic compounds (VOCs) and carbon monoxide in the presence of nitrogen oxides under the influence of UV light. Ground level ozone may be harmful to human and ecosystem health and may also damage crops.

Acidification Potential (AP) > Acid Rain

A measure of emissions that cause acidifying effects to the environment. Acidification potential is a measure of a molecule's capacity to increase the hydrogen ion (H+) concentration in the presence of water, thus decreasing the pH value. Potential effects include fish mortality, forest decline and the deterioration of building materials.

Abiotic Depletion Potential (ADP) > Resource Consumption

The consumption of non-renewable resources leads to a decrease in the future availability of the functions supplied by these resources. Depletion of mineral resource elements (ADPE) and non-renewable fossil energy resources (ADPF) are reported separately.

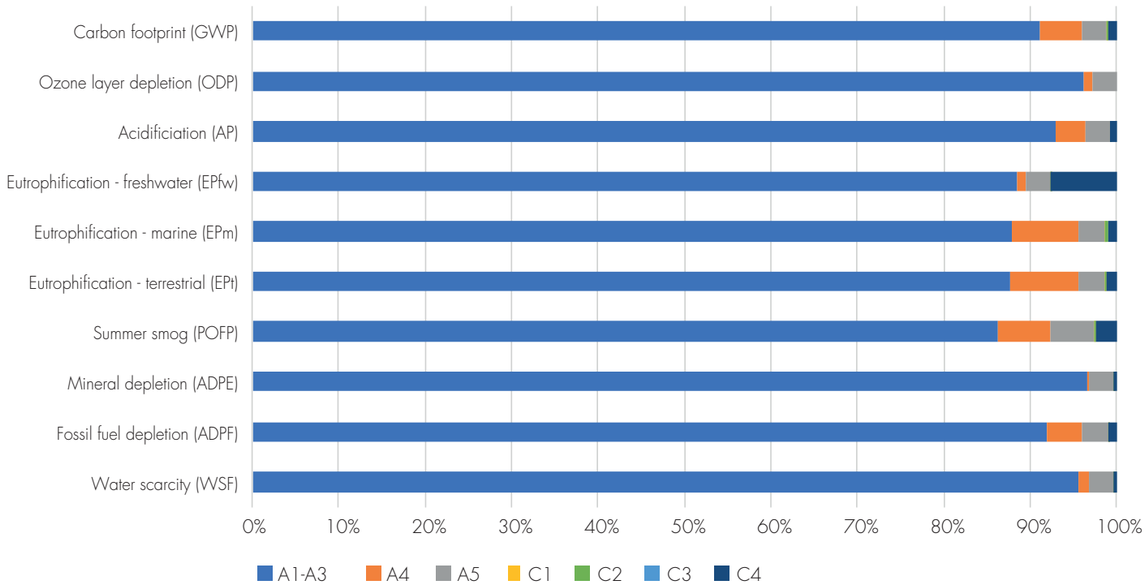
Interpretation

The chart below presents the life cycle of the highest selling product within this EPD, Dulux UltraAir, to give an indication of the life cycle stages that contribute most to the environmental impacts of the Dulux UltraAir paint range.

The results are normalised to 100% for each environmental indicator. Only the life cycle modules assessed in this EPD are shown. Module D has been excluded as it represents potential benefits and loads for future product systems and is therefore outside the system boundary for Dulux UltraAir paints.

As shown in Figure 1, the production phase (Modules A1-A3) is the most significant contributor to the life cycle environmental impacts.

Figure 1: Potential Environmental Impacts of Dulux UltraAir Interior Low Sheen Vivid White



Care should be taken when comparing EPDs. This is especially the case for paint EPDs, where secondary data used to model materials (e.g. titanium dioxide) has a significant impact on results.

Overall, the most important factors to consider when comparing two paint EPDs are that they:

1. Cover paints with the same:
   a. Functionality, i.e. they meet the same minimum performance requirements;
   b. Application environment (e.g. interior paints applied on plasterboard);
   c. Colour and gloss level; and
   d. Number of coats applied per m^2.
2. Have the same functional unit. This EPD uses m^2 at the number of coats required under AS/NZS 2311:2009.
3. Follow the same product category rules. This EPD follows PCR 2019:14 and EN 15804+A2.
4. For raw materials (particularly titanium dioxide and monomers), they use either:
   a. Primary data directly from suppliers; or
   b. The same secondary data source (i.e. same database or literature source).

Specifically, the dataset for titanium dioxide used in this EPD was compiled by the Titanium Dioxide Manufacturers Association (TDMA) and is published in the European Life Cycle Database (TDMA 2016). Datasets for monomers, extenders and pigments were sourced from the GaBi Life Cycle Inventory Database 2020 (Sphera 2020).

Most of the production (Modules A1-A3) carbon footprint (79-83%, depending on the product) are associated with Module A1 which is the extraction, refinement and supply of raw materials.

The biogenic carbon content of the product and packaging is zero for all products.

Results of Assessment

The following tables show the results of the paint products considered in this EPD. The carbon footprint is referred to as the Global warming potential.

Dulux UltraAir Interior Low Sheen

Results for 4L tinplate packaging. Module A1-A3 applies to 1L tinplate + 2L tinplate + 4L tinplate + 10L tinplate + 15L polypropylene as all environmental impact indicators fall within ±9%.

		Production	Distribution	Application	End-of-life				Additional Info.
Environmental impact	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Global warming potential	kg CO_2-eq.	0.405	0.0218	0.0130	6.32E-05	6.05E-04	0	0.00422	-0.00489
Global warming potential (fossil)	kg CO_2-eq.	0.404	0.0211	0.0129	6.07E-05	5.80E-04	0	0.00441	-0.00489
Global warming potential (biogenic)	kg CO_2-eq.	6.85E-04	7.24E-04	3.29E-05	2.52E-06	2.41E-05	0	-1.90E-04	6.11E-06
Global warming potential (land use change)	kg CO_2-eq.	4.39E-05	7.39E-07	1.62E-06	1.14E-09	1.08E-08	0	3.06E-06	-1.34E-08
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.76E-08	1.92E-10	5.08E-10	8.51E-21	8.10E-20	0	1.05E-17	2.50E-17
Acidification potential - terrestrial and freshwater	Mole of H^+ eq.	0.00300	1.12E-04	9.30E-05	7.09E-07	3.56E-06	0	2.20E-05	7.25E-06
Eutrophication potential - freshwater	kg P eq.	4.28E-05	4.67E-07	1.32E-06	1.08E-11	1.03E-10	0	3.74E-06	-7.55E-10
Eutrophication potential - marine	kg N eq.	5.05E-04	4.44E-05	1.69E-05	3.58E-07	1.73E-06	0	5.95E-06	2.57E-06
Eutrophication potential - terrestrial	Mole of N eq.	0.00528	4.85E-04	1.77E-04	3.92E-06	1.90E-05	0	6.54E-05	2.85E-05
Photochemical ozone formation potential	kg NMVOC eq.	0.00156	1.09E-04	9.09E-05	1.03E-06	3.39E-06	0	4.23E-05	5.38E-06
Abiotic depletion potential – minerals & metals*	kg Sb-eq.	2.74E-07	8.97E-10	8.03E-09	7.85E-13	7.48E-12	0	8.69E-10	1.32E-10
Abiotic depletion potential – fossil fuels*	MJ	6.45	0.287	0.203	8.49E-04	0.00809	0	0.0651	-0.0329
Water scarcity*	m^3 world equiv.	0.0735	9.95E-04	0.00222	4.07E-07	3.88E-06	0	2.56E-04	1.11E-04
Additional Environmetal Impact Indicators									
IPCC AR5 GWP-GHG**	kg CO_2-eq.	0.394	0.0208	0.0126	5.99E-05	5.75E-04	0	0.00434	-0.00481
Particulate matter emissions	Disease incidences	3.61E-08	8.82E-10	1.10E-09	1.63E-11	1.49E-11	0	2.29E-10	1.73E-10
Ionising radiation - human health***	kBq U-235 eq.	0.00458	8.67E-06	1.37E-04	1.09E-08	1.04E-07	0	4.94E-05	6.85E-05
Ecotoxicity - freshwater*	CTUe	19.9	0.282	0.596	3.02E-04	0.00287	0	0.644	-0.00586
Human toxicity, cancer effects*	CTUh	5.78E-10	7.47E-12	1.72E-11	5.16E-15	4.93E-14	0	6.83E-12	-8.81E-12
Human toxicity, non-cancer effects*	CTUh	5.39E-08	6.85E-10	1.59E-09	4.65E-13	2.09E-12	0	3.85E-10	-3.11E-11
Land use related impacts / soil quality*	Pt	0.662	0.00573	0.0202	1.98E-06	1.89E-05	0	0.00779	0.00349
Resource use									
Renewable primary energy as energy carrier	MJ	0.170	0.00437	0.00599	5.55E-06	5.29E-05	0	0.00541	0.00469
Renewable primary energy resources as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ	0.170	0.00437	0.00599	5.55E-06	5.29E-05	0	0.00541	0.00469
Non-renewable primary energy as energy carrier	MJ	6.48	0.287	0.204	8.50E-04	0.00809	0	0.0669	-0.0334
Non-renewable primary energy as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ	6.48	0.287	0.204	8.50E-04	0.00809	0	0.0669	-0.0334
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ	1.13E-06	1.24E-08	3.28E-08	0	0	0	0	0
Use of non-renewable secondary fuels	MJ	1.13E-05	1.24E-07	3.26E-07	0	0	0	0	0
Use of net fresh water	m^3	0.00179	1.91E-05	5.11E-05	7.94E-09	7.56E-08	0	9.49E-06	-3.62E-06
Waste categories and output flows									
Hazardous waste disposed	kg	3.32E-04	1.92E-11	9.57E-06	5.17E-14	4.92E-13	0	4.47E-10	-3.42E-11
Non-hazardous waste disposed	kg	0.0115	4.22E-05	0.00889	1.97E-08	1.88E-07	0	0.0994	-7.79E-05
Radioactive waste disposed	kg	1.87E-05	8.35E-08	5.95E-07	9.01E-11	8.58E-10	0	5.66E-07	7.43E-07
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0.00143	0	0.00535	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0	0	0	0

The table below shows the indicators from EN 15804+A1 to allow for backwards compatability with previous EPDs published under the EN 15804+A1 standard.

EN 15804+A1 indicators Environmental impact									
Global warming potential	kg CO_2-eq.	0.391	0.0215	0.0125	6.21E-05	5.97E-04	0	0.00409	-0.00481
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	2.04E-08	2.23E-10	5.89E-10	1.13E-20	1.08E-19	0	1.40E-17	3.33E-17
Acidification potential of land and water	kg SO_2-eq.	0.00253	8.21E-05	7.78E-05	4.86E-07	2.46E-06	0	1.73E-05	5.45E-06
Acidification potential of land and water	kg PO_4^{-3} eq.	4.39E-04	1.79E-05	1.41E-05	1.20E-07	5.82E-07	0	2.69E-05	8.91E-07
Photochemical ozone creation potential	kg C_2H_4-eq.	2.04E-04	-6.00E-06	1.21E-05	5.08E-08	-8.75E-07	0	2.64E-05	-7.49E-07
Abiotic depletion potential – elements	kg Sb-eq.	2.75E-07	9.06E-10	8.06E-09	7.86E-13	7.48E-12	0	8.73E-10	1.36E-10
Abiotic depletion potential – fossil fuels	MJ	5.67	0.284	0.180	8.49E-04	0.00808	0	0.0509	-0.0344

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator
**This indicator is calculated using the characterisation factors from the IPCC AR5 report (IPCC 2013) and has been included in the EPD following the PCR
***This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator

Dulux UltraAir Interior Matt

Results for 4L tinplate packaging. Module A1-A3 applies to 1L tinplate + 2L tinplate + 4L tinplate + 10L tinplate + 15L polypropylene as all environmental impact indicators fall within ±9%.

		Production	Distribution	Application	End-of-life				Additional Info.
Environmental impact	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Global warming potential	kg CO_2-eq.	0.420	0.0213	0.0134	5.98E-05	5.72E-04	0	0.00399	-0.00489
Global warming potential (fossil)	kg CO_2-eq.	0.419	0.0206	0.0134	5.74E-05	5.49E-04	0	0.00417	-0.00489
Global warming potential (biogenic)	kg CO_2-eq.	6.71E-04	7.05E-04	3.19E-05	2.38E-06	2.28E-05	0	-1.80E-04	6.11E-06
Global warming potential (land use change)	kg CO_2-eq.	5.07E-05	7.27E-07	1.81E-06	1.08E-09	1.02E-08	0	2.89E-06	-1.34E-08
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.68E-08	1.87E-10	4.85E-10	8.05E-21	7.66E-20	0	9.95E-18	2.50E-17
Acidification potential - terrestrial and freshwater	Mole of H^+ eq.	0.00322	1.09E-04	9.92E-05	6.71E-07	3.37E-06	0	2.08E-05	7.25E-06
Eutrophication potential - freshwater	kg P eq.	4.09E-05	4.54E-07	1.26E-06	1.02E-11	9.74E-11	0	3.54E-06	-7.55E-10
Eutrophication potential - marine	kg N eq.	5.72E-04	4.33E-05	1.88E-05	3.39E-07	1.63E-06	0	5.62E-06	2.57E-06
Eutrophication potential - terrestrial	Mole of N eq.	0.00603	4.73E-04	1.98E-04	3.71E-06	1.79E-05	0	6.18E-05	2.85E-05
Photochemical ozone formation potential	kg NMVOC eq.	0.00174	1.06E-04	9.62E-05	9.78E-07	3.21E-06	0	4.00E-05	5.38E-06
Abiotic depletion potential – minerals & metals*	kg Sb-eq.	2.75E-07	8.75E-10	8.07E-09	7.43E-13	7.07E-12	0	8.22E-10	1.32E-10
Abiotic depletion potential – fossil fuels*	MJ	6.69	0.280	0.210	8.04E-04	0.00765	0	0.0615	-0.0329
Water scarcity*	m^3 world equiv.	0.0714	9.80E-04	0.00216	3.85E-07	3.67E-06	0	2.42E-04	1.11E-04
Additional Environmetal Impact Indicators									
IPCC AR5 GWP-GHG**	kg CO_2-eq.	0.410	0.0203	0.0131	5.66E-05	5.44E-04	0	0.00410	-0.00482
Particulate matter emissions	Disease incidences	4.02E-08	8.60E-10	1.22E-09	1.54E-11	1.41E-11	0	2.16E-10	1.73E-10
Ionising radiation - human health***	kBq U-235 eq.	0.00461	8.45E-06	1.38E-04	1.03E-08	9.82E-08	0	4.68E-05	6.85E-05
Ecotoxicity - freshwater*	CTUe	19.2	0.274	0.574	2.86E-04	0.00271	0	0.609	-0.00587
Human toxicity, cancer effects*	CTUh	6.35E-10	7.27E-12	1.88E-11	4.88E-15	4.66E-14	0	6.46E-12	-8.81E-12
Human toxicity, non-cancer effects*	CTUh	6.07E-08	6.66E-10	1.79E-09	4.39E-13	1.98E-12	0	3.64E-10	-3.11E-11
Land use related impacts / soil quality*	Pt	0.656	0.00561	0.0200	1.87E-06	1.78E-05	0	0.00737	0.00349
Resource use									
Renewable primary energy as energy carrier	MJ	0.184	0.00431	0.00637	5.25E-06	5.00E-05	0	0.00512	0.00469
Renewable primary energy resources as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ	0.184	0.00431	0.00637	5.25E-06	5.00E-05	0	0.00512	0.00469
Non-renewable primary energy as energy carrier	MJ	6.73	0.280	0.211	8.04E-04	0.00765	0	0.0632	-0.0334
Non-renewable primary energy as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ	6.73	0.280	0.211	8.04E-04	0.00765	0	0.0632	-0.0334
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ	1.08E-06	1.21E-08	3.14E-08	0	0	0	0	0
Use of non-renewable secondary fuels	MJ	1.08E-05	1.20E-07	3.12E-07	0	0	0	0	0
Use of net fresh water	m^3	0.00175	1.87E-05	5.00E-05	7.51E-09	7.15E-08	0	8.98E-06	-3.62E-06
Waste categories and output flows									
Hazardous waste disposed	kg	3.23E-04	1.87E-11	9.31E-06	4.89E-14	4.66E-13	0	4.23E-10	-3.42E-11
Non-hazardous waste disposed	kg	0.0122	4.11E-05	0.00886	1.87E-08	1.78E-07	0	0.0941	-7.79E-05
Radioactive waste disposed	kg	2.02E-05	8.13E-08	6.39E-07	8.52E-11	8.11E-10	0	5.36E-07	7.43E-07
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0.00139	0	0.00534	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0	0	0	0

The table below shows the indicators from EN 15804+A1 to allow for backwards compatability with previous EPDs published under the EN 15804+A1 standard.

EN 15804+A1 indicators Environmental impact									
Global warming potential	kg CO_2-eq.	4.06E-01	0.0209	0.0130	5.87E-05	5.65E-04	0	0.00387	-0.00481
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.95E-08	2.17E-10	5.63E-10	1.07E-20	1.02E-19	0	1.33E-17	3.33E-17
Acidification potential of land and water	kg SO_2-eq.	0.00269	8.01E-05	8.25E-05	4.60E-07	2.32E-06	0	1.64E-05	5.44E-06
Acidification potential of land and water	kg PO_4^{-3} eq.	4.50E-04	1.74E-05	1.44E-05	1.13E-07	5.50E-07	0	2.54E-05	8.90E-07
Photochemical ozone creation potential	kg C_2H_4-eq.	2.14E-04	-5.84E-06	1.24E-05	4.81E-08	-8.27E-07	0	2.49E-05	-7.50E-07
Abiotic depletion potential – elements	kg Sb-eq.	2.76E-07	8.83E-10	8.10E-09	7.43E-13	7.08E-12	0	8.25E-10	1.36E-10
Abiotic depletion potential – fossil fuels	MJ	5.92	0.277	0.187	8.03E-04	0.00765	0	0.0482	-0.0344

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator
**This indicator is calculated using the characterisation factors from the IPCC AR5 report (IPCC 2013) and has been included in the EPD following the PCR
***This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator

Results of Assessment

The following tables show the results of the paint products considered in this EPD. The carbon footprint is referred to as the Global warming potential.

Dulux UltraAir Ceiling White

Results for 4L tinplate packaging. Module A1-A3 applies to 4L tinplate + 10L tinplate + 15L polypropylene as all environmental impact indicators fall within ±10%.

		Production	Distribution	Application	End-of-life				Additional Info.
Environmental impact	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Global warming potential	kg CO_2-eq.	0.325	0.0183	0.0106	4.72E-05	4.51E-04	0	0.00315	-0.00489
Global warming potential (fossil)	kg CO_2-eq.	0.325	0.0176	0.0106	4.53E-05	4.33E-04	0	0.00329	-0.00489
Global warming potential (biogenic)	kg CO_2-eq.	1.29E-04	6.81E-04	1.56E-05	1.88E-06	1.80E-05	0	-1.42E-04	6.11E-06
Global warming potential (land use change)	kg CO_2-eq.	4.12E-05	5.79E-07	1.54E-06	8.49E-10	8.08E-09	0	2.28E-06	-1.34E-08
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.42E-08	7.48E-18	4.09E-10	6.35E-21	6.04E-20	0	7.85E-18	2.50E-17
Acidification potential - terrestrial and freshwater	Mole of H^+ eq.	0.00267	8.70E-05	8.30E-05	5.29E-07	2.66E-06	0	1.64E-05	7.24E-06
Eutrophication potential - freshwater	kg P eq.	3.47E-05	3.44E-09	1.07E-06	8.07E-12	7.68E-11	0	2.79E-06	-7.55E-10
Eutrophication potential - marine	kg N eq.	4.65E-04	3.94E-05	1.56E-05	2.67E-07	1.29E-06	0	4.44E-06	2.57E-06
Eutrophication potential - terrestrial	Mole of N eq.	0.00488	4.33E-04	1.64E-04	2.93E-06	1.41E-05	0	4.88E-05	2.85E-05
Photochemical ozone formation potential	kg NMVOC eq.	0.00142	9.46E-05	6.77E-05	7.72E-07	2.53E-06	0	3.16E-05	5.38E-06
Abiotic depletion potential – minerals & metals*	kg Sb-eq.	2.52E-07	2.88E-10	7.35E-09	5.86E-13	5.58E-12	0	6.48E-10	1.32E-10
Abiotic depletion potential – fossil fuels*	MJ	4.62	0.242	0.150	6.34E-04	0.00604	0	0.0485	-0.0329
Water scarcity*	m^3 world equiv.	0.0590	5.41E-04	0.00180	3.04E-07	2.89E-06	0	1.91E-04	1.11E-04
Additional Environmetal Impact Indicators									
IPCC AR5 GWP-GHG**	kg CO_2-eq.	0.317	0.0174	0.0104	4.47E-05	4.29E-04	0	0.00323	-0.00482
Particulate matter emissions	Disease incidences	3.33E-08	6.10E-10	1.01E-09	1.22E-11	1.12E-11	0	1.71E-10	1.73E-10
Ionising radiation - human health***	kBq U-235 eq.	0.00217	3.24E-06	6.72E-05	8.14E-09	7.75E-08	0	3.69E-05	6.85E-05
Ecotoxicity - freshwater*	CTUe	15.6	0.0829	0.468	2.25E-04	0.00214	0	0.480	-0.00587
Human toxicity, cancer effects*	CTUh	4.91E-10	1.50E-12	1.46E-11	3.85E-15	3.68E-14	0	5.09E-12	-8.81E-12
Human toxicity, non-cancer effects*	CTUh	4.63E-08	6.19E-11	1.37E-09	3.47E-13	1.56E-12	0	2.87E-10	-3.11E-11
Land use related impacts / soil quality*	Pt	0.586	0.00171	0.0179	1.48E-06	1.41E-05	0	0.00581	0.00349
Resource use									
Renewable primary energy as energy carrier	MJ	0.152	0.00341	0.00546	4.14E-06	3.95E-05	0	0.00404	0.00469
Renewable primary energy resources as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ	0.152	0.00341	0.00546	4.14E-06	3.95E-05	0	0.00404	0.00469
Non-renewable primary energy as energy carrier	MJ	4.63	0.242	0.150	6.34E-04	0.00604	0	0.0499	-0.0334
Non-renewable primary energy as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ	4.63	0.242	0.150	6.34E-04	0.00604	0	0.0499	-0.0334
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ	9.18E-07	0	2.65E-08	0	0	0	0	0
Use of non-renewable secondary fuels	MJ	9.12E-06	0	2.63E-07	0	0	0	0	0
Use of net fresh water	m^3	0.00145	8.19E-06	4.13E-05	5.92E-09	5.64E-08	0	7.08E-06	-3.62E-06
Waste categories and output flows									
Hazardous waste disposed	kg	3.12E-04	1.60E-11	8.99E-06	3.86E-14	3.67E-13	0	3.33E-10	-3.42E-11
Non-hazardous waste disposed	kg	0.0109	8.56E-06	0.00878	1.47E-08	1.40E-07	0	0.0742	-7.79E-05
Radioactive waste disposed	kg	1.12E-05	2.64E-08	3.76E-07	6.72E-11	6.40E-10	0	4.23E-07	7.43E-07
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	0.00136	0	0.00534	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0	0	0	0

The table below shows the indicators from EN 15804+A1 to allow for backwards compatability with previous EPDs published under the EN 15804+A1 standard.

EN 15804+A1 indicators Environmental impact									
Global warming potential	kg CO_2-eq.	0.314	0.0181	0.0103	4.63E-05	4.45E-04	0	0.00306	-0.00481
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.65E-08	9.98E-18	4.75E-10	8.46E-21	8.06E-20	0	1.05E-17	3.33E-17
Acidification potential of land and water	kg SO_2-eq.	0.00224	6.14E-05	6.91E-05	3.63E-07	1.83E-06	0	1.29E-05	5.44E-06
Acidification potential of land and water	kg PO_4^{-3} eq.	3.74E-04	1.33E-05	1.21E-05	8.94E-08	4.34E-07	0	2.01E-05	8.90E-07
Photochemical ozone creation potential	kg C_2H_4-eq.	1.74E-04	-7.18E-06	8.43E-06	3.79E-08	-6.53E-07	0	1.97E-05	-7.50E-07
Abiotic depletion potential – elements	kg Sb-eq.	2.52E-07	2.88E-10	7.38E-09	5.86E-13	5.58E-12	0	6.51E-10	1.36E-10
Abiotic depletion potential – fossil fuels	MJ	4.22	0.241	0.137	6.34E-04	0.00603	0	0.0380	-0.0345

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator
**This indicator is calculated using the characterisation factors from the IPCC AR5 report (IPCC 2013) and has been included in the EPD following the PCR
***This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator

Dulux UltraAir Interior Primer

Results for 4L tinplate packaging. Module A1-A3 applies to 2L tinplate + 4L tinplate + 10L tinplate as all environmental impact indicators fall within ±5%.

		Production	Distribution	Application	End-of-life				Additional Info.
Environmental impact	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Global warming potential	kg CO_2-eq.	0.273	0.0127	0.00871	4.14E-05	3.96E-04	0	0.00276	-0.00326
Global warming potential (fossil)	kg CO_2-eq.	0.272	0.0122	0.00868	3.98E-05	3.80E-04	0	0.00289	-0.00326
Global warming potential (biogenic)	kg CO_2-eq.	4.40E-04	4.74E-04	2.04E-05	1.65E-06	1.58E-05	0	-1.24E-04	4.07E-06
Global warming potential (land use change)	kg CO_2-eq.	5.00E-05	3.94E-07	1.67E-06	7.45E-10	7.09E-09	0	2.00E-06	-8.92E-09
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.12E-08	5.05E-18	3.24E-10	5.57E-21	5.30E-20	0	6.89E-18	1.67E-17
Acidification potential - terrestrial and freshwater	Mole of H^+ eq.	0.00210	6.04E-05	6.48E-05	4.65E-07	2.33E-06	0	1.44E-05	4.83E-06
Eutrophication potential - freshwater	kg P eq.	2.74E-05	2.38E-09	8.41E-07	7.08E-12	6.74E-11	0	2.45E-06	-5.03E-10
Eutrophication potential - marine	kg N eq.	3.72E-04	2.74E-05	1.22E-05	2.34E-07	1.13E-06	0	3.89E-06	1.72E-06
Eutrophication potential - terrestrial	Mole of N eq.	0.00391	3.01E-04	1.28E-04	2.57E-06	1.24E-05	0	4.28E-05	1.90E-05
Photochemical ozone formation potential	kg NMVOC eq.	0.00113	6.57E-05	6.33E-05	6.77E-07	2.22E-06	0	2.77E-05	3.59E-06
Abiotic depletion potential – minerals & metals*	kg Sb-eq.	1.85E-07	1.98E-10	5.39E-09	5.14E-13	4.90E-12	0	5.69E-10	8.78E-11
Abiotic depletion potential – fossil fuels*	MJ	4.38	0.168	0.137	5.56E-04	0.00530	0	0.0426	-0.0220
Water scarcity*	m^3 world equiv.	0.0489	3.64E-04	0.00146	2.67E-07	2.54E-06	0	1.68E-04	7.37E-05
Additional Environmetal Impact Indicators									
IPCC AR5 GWP-GHG**	kg CO_2-eq.	0.266	0.0121	0.00849	3.92E-05	3.77E-04	0	0.00284	-0.00321
Particulate matter emissions	Disease incidences	2.59E-08	4.22E-10	7.82E-10	1.07E-11	9.79E-12	0	1.50E-10	1.15E-10
Ionising radiation - human health***	kBq U-235 eq.	0.00744	2.24E-06	2.18E-04	7.14E-09	6.80E-08	0	3.24E-05	4.57E-05
Ecotoxicity - freshwater*	CTUe	12.9	0.0576	0.384	1.98E-04	0.00188	0	0.421	-0.00391
Human toxicity, cancer effects*	CTUh	3.74E-10	1.04E-12	1.11E-11	3.38E-15	3.23E-14	0	4.47E-12	-5.87E-12
Human toxicity, non-cancer effects*	CTUh	3.47E-08	4.29E-11	1.02E-09	3.04E-13	1.37E-12	0	2.52E-10	-2.07E-11
Land use related impacts / soil quality*	Pt	0.468	0.00116	0.0142	1.30E-06	1.24E-05	0	0.00510	0.00233
Resource use									
Renewable primary energy as energy carrier	MJ	0.157	0.00232	0.00523	3.64E-06	3.46E-05	0	0.00354	0.00313
Renewable primary energy resources as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources	MJ	0.157	0.00232	0.00523	3.64E-06	3.46E-05	0	0.00354	0.00313
Non-renewable primary energy as energy carrier	MJ	4.41	0.168	0.138	5.56E-04	0.00530	0	0.0438	-0.0222
Non-renewable primary energy as material utilization	MJ	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources	MJ	4.41	0.168	0.138	5.56E-04	0.00530	0	0.0438	-0.0222
Use of secondary material	kg	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ	7.26E-07	0	2.09E-08	0	0	0	0	0
Use of non-renewable secondary fuels	MJ	7.21E-06	0	2.08E-07	0	0	0	0	0
Use of net fresh water	m^3	0.00122	5.52E-06	3.49E-05	5.20E-09	4.95E-08	0	6.22E-06	-2.42E-06
Waste categories and output flows									
Hazardous waste disposed	kg	2.20E-04	1.10E-11	6.34E-06	3.39E-14	3.22E-13	0	2.93E-10	-2.28E-11
Non-hazardous waste disposed	kg	0.00771	5.86E-06	0.00592	1.29E-08	1.23E-07	0	0.0651	-5.19E-05
Radioactive waste disposed	kg	3.24E-05	1.83E-08	9.67E-07	5.90E-11	5.62E-10	0	3.71E-07	4.95E-07
Components for re-use	kg	0	0	0	0	0	0	0	0
Materials for recycling	kg	9.48E-04	0	0.00356	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0
Exported electrical energy	MJ	0	0	0	0	0	0	0	0
Exported thermal energy	MJ	0	0	0	0	0	0	0	0

The table below shows the indicators from EN 15804+A1 to allow for backwards compatability with previous EPDs published under the EN 15804+A1 standard.

EN 15804+A1 indicators Environmental impact									
Global warming potential	kg CO_2-eq.	2.63E-01	0.0125	0.00842	4.07E-05	3.91E-04	0	0.00268	-0.00321
Depletion potential of the stratospheric ozone layer	kg CFC11-eq.	1.30E-08	6.74E-18	3.76E-10	7.43E-21	7.07E-20	0	9.19E-18	2.22E-17
Acidification potential of land and water	kg SO_2-eq.	0.00176	4.26E-05	5.39E-05	3.18E-07	1.61E-06	0	1.13E-05	3.63E-06
Acidification potential of land and water	kg PO_4^{-3} eq.	2.98E-04	9.22E-06	9.50E-06	7.85E-08	3.81E-07	0	1.76E-05	5.94E-07
Photochemical ozone creation potential	kg C_2H_4-eq.	1.40E-04	-5.00E-06	8.19E-06	3.33E-08	-5.73E-07	0	1.73E-05	-5.00E-07
Abiotic depletion potential – elements	kg Sb-eq.	1.85E-07	1.98E-10	5.41E-09	5.15E-13	4.90E-12	0	5.71E-10	9.08E-11
Abiotic depletion potential – fossil fuels	MJ	3.82	0.168	0.121	5.56E-04	0.00529	0	0.0334	-0.0230

*The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator
**This indicator is calculated using the characterisation factors from the IPCC AR5 report (IPCC 2013) and has been included in the EPD following the PCR
***This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator

Glossary

ADPE	Abiotic Depletion Potential – Elements
ADPF	Abiotic Depletion Potential – Fossil Fuels
AP	Acidification Potential
EP	Eutrophication Potential
EPD	Environmental Product Declaration
GaBi	Ganzheitliche Bilanzierung (German for holistic balancing)
GWP	Global Warming Potential
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
NMVOC	Non-Methane Volatile Organic Compound
ODP	Stratospheric Ozone Depletion Potential
PCR	Product Category Rules
POFP	Photochemical Ozone Formation Potential
TDMA	Titanium Dioxide Manufacturers Association
SVHC	Substance of Very High Concern
VOC	Volatile Organic Compound

Version history

V1.0	Initial release

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