Environmental Product Declaration

THE NORTH AMERICAN EPD® SYSTEM

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

Pitt-Glaze® WB1 High Performance Pre-Catalyzed Waterborne Epoxy Coatings

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-09118
Publication date:	2023-09-28
Valid until:	2028-09-18

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *International EPD System, PCR for Construction Products, 2019:14, version 1.2.5.*
PCR review was conducted by: *Claudia A. Peña, Director of Sustainability at ADDERE Research and Technology*

Life Cycle Assessment (LCA)	
LCA accountability:	William Collinge, PPG Product Sustainability CoE
Third-party verification	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☑ EPD verification by individual verifier	
Third-party verifier:	*Jan Weinzettel, http://www.fernconsulting.cz, weinzettel@seznam.cz*
Approved by: The International EPD® System	
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☑ No	

EPD Type: Worst case. This EPD is based on the worst case life cycle impacts (of each reported life cycle impact category) of all variations of Pitt-Glaze® WB1 High-Performance Pre-Catalyzed Waterborne Epoxy coatings, e.g., different colors and packaging size.

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company Information

Owner of the EPD: PPG Industries

Contact: Sustainability.COE@ppg.com

Description of the organisation:

PPG Industries, Inc. manufactures and distributes a broad range of paints, coatings and specialty materials. PPG was incorporated in Pennsylvania in 1883. PPG's vision is to be the world's leading coatings company by consistently delivering high-quality, innovative and sustainable solutions that customers trust to protect and beautify their products and surroundings. https://www.ppgpaints.com/

Product-related or management system-related certifications:

PPG's EHS Policy incorporates the elements of voluntary global industry initiatives, including Responsible Care® and Coatings Care®, which help companies manage safe and environmentally responsible practices in the chemicals and coatings industries. At more than 40 of its facilities, PPG has received ISO 14001:2004 certification.

Name and location of production site(s): PPG Industries, 4261 W White Rd, Oakwood, GA 30566

Product Information

Product name: Pitt-Glaze® WB1 High Performance Pre-Catalyzed Waterborne Epoxy Coatings - Eggshell and Semi-Gloss White, Midtone and Neutral bases.

Product identification: Product numbers 16-1310, 16-1320, 16-1340, 16-1510, 16-1520, 16-1540, 16-1310C, 16-1320C, 16-1340C, 16-1510C, 16-1520C, 16-1540C.

Product description:

Pitt-Glaze® WB1 High-Performance Pre-Catalyzed Waterborne Epoxy is the ideal protective coating for challenging high-traffic interior spaces. It delivers excellent adhesion and resistance to impact, stains, scuffs, and strong cleaning solutions, in a convenient one-component, zero-VOC,* low-odour formula. *Colorants added to this base paint may increase VOC level significantly depending on color choice.

UN CPC code: 35110

Geographical scope: United States and Canada

LCA Information

Declared unit: The declared unit for this EPD is 1 m2 of substrate covered and protected by Pitt-Glaze® WB1 High Performance Pre-Catalyzed Waterborne Epoxy Coatings.

Reference service life: 10 years

Time representativeness: 2022

Database(s) and LCA software used: Ecoinvent 3.9 (using the Cut-off processes/allocation model), Industry Data 2.0; Simapro v. 9.5.

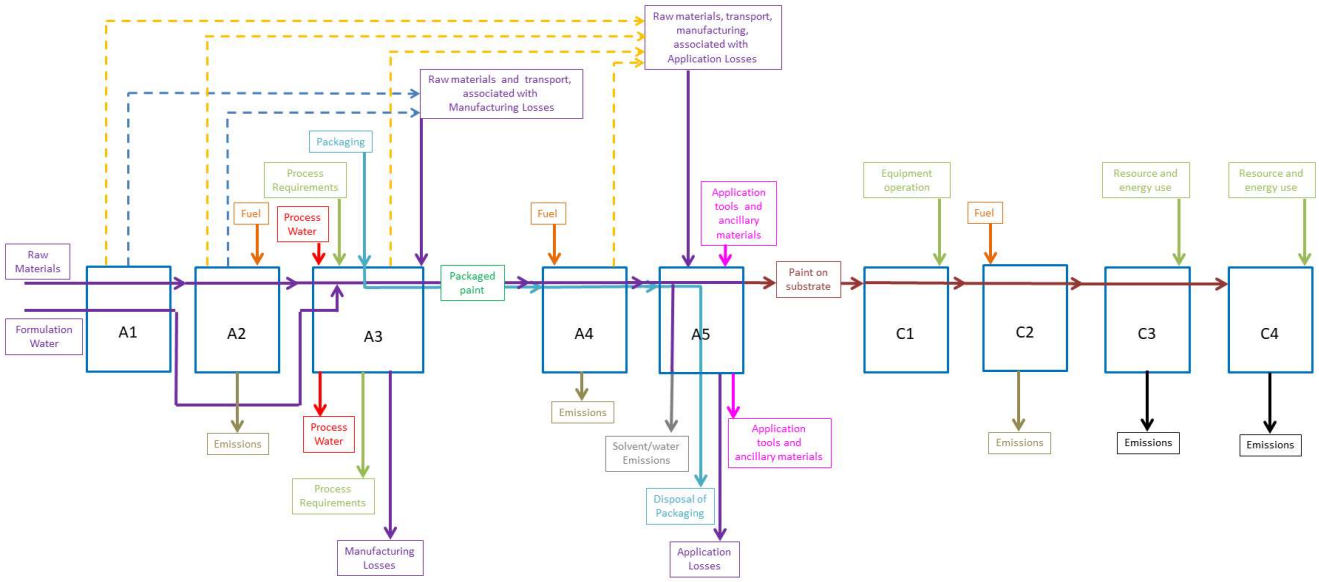
Cut-off rules: Neglected flow in all modules is less than 1% of the energy use and total mass. Cutt-off rules does not apply to Module A1, which is 100% modelled.

Allocation method: Mass allocation: A3 energy/material inputs and waste outputs are allocated by total products manufactured over 1 year

Description of system boundaries:

The type of EPD is Cradle to Gate with Options (EPD Type b - Modules A1-A3, A4, A5, C1-C4, and D).

System diagram:



More Information

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage	End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use, maintenance, repair, replacement, refurbishment, operational energy and water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	MND	X	X	X	X	X
Geography	US	US	US	US/CA		MND	US/CA				US/CA
Specific data used	15% (Note 1)			-	-	-	-	-	-	-	-
Variation – products	40% (Note 2)			-	-	-	-	-	-	-	-
Variation – sites	Not Applicable			-	-	-	-	-	-	-	-

Note 1: Based on GWP-GHG of Stage A3 divided by GWP-GHG for stages A1-A3. Data for A3 is specific to PPG facilities, which means A3 accounts for 11% of A1-A3 in this reported EPD.

Note 2: Since EPD uses the maximum value of all products, this is based on the ratio of the GWP-GHG of the minimum product to the EPD reported value for Stages A1-A3, i.e., the variation is entirely below the reported result.

Content Information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Additives	<0.01	-	-
Biocides	<0.001	-	-
Binders	0.05-0.1	-	-
Fillers	0.01-0.03	-	-
Glycols, esters, ethers	<0.001	-	-
Pigments	<0.001	-	-
Solvents	<0.001	-	-
TiO2	0-0.05	-	-
Water	0.09-0.15	-	-
Total	0.236-0.253	0.0	0% / 0.0

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Steel for cans/buckets(Note 1)	9.52E-03	3.76%	0.0
Polypropylene for cans/buckets	1.37E-02	5.41%	0.0
Cardboard for boxes and pallet interleaves	3.30E-04	0.13%	0.5
Wood pallet	8.26E-03	3.26%	0.5
Polyethylene for pallet wrap	3.30E-04	0.13%	0.0
TOTAL	3.21E-02	12.70%	0.017

Note 1: Packaging weights are the maximum of the individual products included in the EPD. Packaging weight percentages are assessed on the maximum product weight per declared unit given above.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per declared unit
None			

Assumptions beyond module A3

A4

Transportation distance is assumed to be 1,207km accordingly to American Coating Association's Architectural Coating PCR and Powder Coating PCR. Transportation mode is assumed to be by Euro 5 16-32 metric ton truck.

A5

The following sub modules and assumptions are included in A5

1. Application tools and ancilliaries: roller, tray and plastic sheeting.
2. Disposal of application waste: an estimate of 1% application lost is assumed. Environmental impact of manufacturing and disposal of 1% product lost is included in A5. Solid content of lost products are assumed to be disposed of as nonhazardous waste to incineration without energy recovery.
3. Primary packaging (steel, plastic and cardboards) are disposed as general waste. Pallet packaging is disposed as wood waste.
4. VOCs were modelled as direct emission to the environment and characterized by their characterization factors according to EVEA Method EN 15804 A2 EPD Ev-DEC 1.10 ei3.8 SP9.4.

C1-C4

1. C1: Energy associated with demolition of the substrate structure is pro-rated for the mass of paint.
2. C2: Transportation to disposal is assumed to 30 km and transportation mode is assumed to be by Euro 5 16-32 metric ton truck.
3. C3: No waste processing options are considered.
4. C4: It is assumed that the paint will be disposed of along with the substrate in a landfill.

D

No benefits and loads beyond the product system boundary were declared since no reuse or recovery occurs for architectural coatings in general. In addition, since landfilling is assumed to be the waste disposal option in C4 module, no "useful energy carrier" is considered leaving the product system. Therefore, no benefit is claimed in module D.

Documentation for calculating the Reference Service Life (RSL)

An assumed reference service life of 10 years is declared, since the disposal phase is analysed. However, the reference service life does not affect the results, since use phase modules are not declared.

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per declared unit (1 m2 of substrate covered and protected by Pitt-Glaze® coating)

Indicator	Unit	A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
GWP - fossil	kg CO_2 eq.	5.06E-01	6.36E-02	6.95E-02	ND	4.72E-05	7.44E-04	0.00E+00	1.36E-02	0.00E+00
GWP -biogenic	kg CO_2 eq.	-1.30E-02	2.02E-05	1.73E-02	ND	8.56E-09	2.37E-07	0.00E+00	9.83E-06	0.00E+00
GWP - luluc	kg CO_2 eq.	3.99E-04	3.11E-05	4.33E-05	ND	6.06E-09	3.64E-07	0.00E+00	1.18E-06	0.00E+00
GWP - total	kg CO_2 eq.	4.93E-01	6.36E-02	8.69E-02	ND	4.72E-05	7.45E-04	0.00E+00	1.36E-02	0.00E+00
ODP	kg CFC 11 eq.	1.35E-08	1.38E-09	8.99E-10	ND	9.87E-13	1.62E-11	0.00E+00	3.63E-11	0.00E+00
AP	mol H^+ eq.	3.47E-03	2.07E-04	2.93E-04	ND	4.17E-07	2.43E-06	0.00E+00	1.11E-05	0.00E+00
EP - freshwater	kg P eq.	2.06E-05	5.08E-07	2.13E-06	ND	2.58E-10	5.95E-09	0.00E+00	2.29E-08	0.00E+00
EP - marine	kg N eq.	5.08E-04	7.04E-05	6.05E-05	ND	1.93E-07	8.24E-07	0.00E+00	4.08E-06	0.00E+00
EP-terrestrial	mol N eq.	5.40E-03	7.53E-04	5.53E-04	ND	2.10E-06	8.81E-06	0.00E+00	4.42E-05	0.00E+00
POCP	kg NMVOC eq.	2.12E-03	3.10E-04	2.39E-04	ND	6.34E-07	3.62E-06	0.00E+00	1.83E-05	0.00E+00
ADP - minerals & metals*	kg Sb eq.	4.94E-06	2.09E-07	2.78E-07	ND	2.19E-11	2.45E-09	0.00E+00	3.32E-09	0.00E+00
ADP - fossil*	MJ	1.06E+01	9.01E-01	1.80E+00	ND	6.12E-04	1.05E-02	0.00E+00	3.36E-02	0.00E+00
WDP*	m^3	1.69E-01	3.67E-03	3.97E-02	ND	1.38E-06	4.30E-05	0.00E+00	1.42E-03	0.00E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	5.08E-01	6.36E-02	7.08E-02	ND	4.72E-05	7.45E-04	0.00E+00	1.36E-02	0.00E+00
Particulate Matter	disease inc.	3.72E-08	5.05E-09	2.93E-09	ND	1.18E-11	5.91E-11	0.00E+00	2.38E-10	0.00E+00
Ionizing radiation, human health (IRP)	kBq U235 eq.	2.21E-02	4.52E-04	2.49E-03	ND	1.94E-07	5.29E-06	0.00E+00	1.75E-05	0.00E+00
Eco-toxicity - freshwater (ETP-fw)	CTUe	8.27E+00	4.45E-01	3.78E-01	ND	2.61E-04	5.20E-03	0.00E+00	1.75E-02	0.00E+00
Human toxicity, cancer effect (HTP-c)	CTUh	5.65E-10	2.89E-11	2.54E-11	ND	2.28E-14	3.38E-13	0.00E+00	1.75E-12	0.00E+00
Human toxicity, non-cancer effects (HTP-nc)	CTUh	7.96E-09	6.34E-10	4.76E-10	ND	1.18E-13	7.43E-12	0.00E+00	3.02E-11	0.00E+00
Land use related impacts/Soil quality (SQP)	dimensionless	4.29E+00	5.36E-01	2.79E-01	ND	4.21E-05	6.28E-03	0.00E+00	7.64E-02	0.00E+00

Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017

Note 1: GWP-GHG is calculated as GWP - total minus any climate change impact (positive or negative) caused by biogenic carbon emission or uptake.

Use of resources

Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
PERE	MJ	6.12E-01	1.40E-02	7.93E-02	ND	5.54E-06	1.64E-04	0.00E+00	5.92E-04	0.00E+00
PERM	MJ	1.67E-01	0.00E+00	-1.53E-01	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	6.12E-01	1.40E-02	7.93E-02	ND	5.54E-06	1.64E-04	0.00E+00	5.92E-04	0.00E+00
PENRE	MJ	1.06E+01	9.01E-01	1.80E+00	ND	6.12E-04	1.05E-02	0.00E+00	3.36E-02	0.00E+00
PENRM	MJ	2.56E+00	0.00E+00	-3.35E-01	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.06E+01	9.01E-01	1.80E+00	ND	6.12E-04	1.05E-02	0.00E+00	3.36E-02	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	1.50E-03	0.00E+00	3.07E-05	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	4.11E-03	1.28E-04	8.47E-04	ND	5.28E-08	1.50E-06	0.00E+00	3.45E-05	0.00E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Waste production

Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7.78E-02	8.58E-04	2.72E-03	ND	8.18E-07	1.00E-05	0.00E+00	4.61E-05	0.00E+00
Non-hazardous waste disposed	kg	1.54E+00	5.12E-02	8.92E-02	ND	3.87E-06	5.99E-04	0.00E+00	1.32E-01	0.00E+00
Radioactive waste disposed	kg	4.86E-05	2.93E-07	2.59E-06	ND	1.21E-10	3.43E-09	0.00E+00	1.06E-08	0.00E+00

Output flows

Results per declared unit

Indicator	Unit	A1-A3	A4	A5	B1 - B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	2.26E-07	0.00E+00	4.62E-09	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other Environmental Performance Indicators

None included

Additional Environmental Information

None included

Additional Social and Economic Information

None included

Information Related to Sector EPD

Not applicable

Differences Versus Previous Versions

Not applicable

References

General Programme Instructions of the International EPD System®, Version 4.0

EPD International Product Category Rules (PCR) for Construction Products, PCR 2019:14, Version 1.2.5

Life-Cycle Analysis Background Report Prepared for Environmental Product Declarations of EPD International for Pitt-Glaze® WB1 High Performance Pre-Catalyzed Waterborne Epoxy Coatings, PPG Product Sustainability CoE, 440 College Park Drive Monroeville , PA 15146 USA, Date of Report August 4, 2023

ISO 14044:2006-10, Environmental Management — Life Cycle Assessment — Requirements and Instructions (ISO 14044:2006); EN ISO 14044:2006

EN 15804+A2:2019, Sustainability of construction works — Environmental Product Declarations — Core rules for the construction products product category