



**Environmental
Product
Declaration**

According to ISO14025+EN15804+A2

This declaration is for:
Herbol Exterior Wall Paints

Provided by:
AkzoNobel



MRPI® registration:
1.1.00875.2025

Program operator:
Stichting MRPI®
Publisher:
Stichting MRPI®
www.mrpi.nl

Date of first issue:
2-7-2025
Date of this issue:
2-7-2025
Expiry date:
2-7-2030





COMPANY INFORMATION

AkzoNobel
Christian Neefestraat 2
1077 WW
Amsterdam
Netherlands

<https://www.akzonobel.com>

MRPI® REGISTRATION

1.1.00875.2025

DATE OF THIS ISSUE

2-7-2025

EXPIRY DATE

2-7-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco-intelligence. The LCA study has been done by Brienne Wiersma & Robert Jan Volders, Ecomatters. The certificate is based on an LCA-dossier according to ISO14025+EN15804+A2. It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

PRODUCT

Herbol Exterior Wall Paints

DECLARED UNIT / FUNCTIONAL UNIT

1 Productiveness (m2)

DESCRIPTION OF PRODUCT

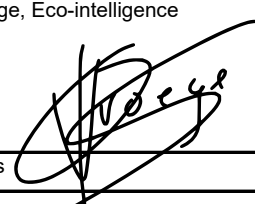
This EPD covers a range of high-quality waterborne wall paints for exterior use from Herbol.

VISUAL PRODUCT



MORE INFORMATION

<http://www.herbol.it>

Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI	DEMONSTRATION OF VERIFICATION
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration an data according to ISO14025+EN15804+A2 Internal: External: X
	Third party verifier: Gert-Jan Vroege, Eco-intelligence  [1] PCR = Product Category Rules





DETAILED PRODUCT DESCRIPTION

These Herbol high-quality durable waterborne wall paints for exterior use offer specific benefits for some of these products including protection against fungi, algae and mould, good hiding power, resistance to chalking and great water vapour permeability. This EPD covers the following products: HERBOL HERBIDUR QUARTZ FINE, HERBOL HERBOXAN QUARTZ, HERBOL FASSADEN PUTZFULLER 0.4MM, HERBOL BETON FINISH, HERBOL HERBIDUR ALL SEASONS. For detailed individual product benefits please visit www.herbol.it

Typical Use
Exterior walls

Application Method
Roller and brush (HERBOL HERBIDUR QUARTZ FINE, HERBOL HERBOXAN QUARTZ, HERBOL FASSADEN PUTZFULLER 0.4MM) / Roller, brush and spray (HERBOL BETON FINISH, HERBOL HERBIDUR ALL SEASONS)

Pack Size
12.5L, 5L, and 1L (HERBOL HERBIDUR QUARTZ FINE, HERBOL HERBOXAN QUARTZ, HERBOL FASSADEN PUTZFULLER 0.4MM) / 12.5L (HERBOL BETON FINISH) / 12.5L, 5L, and 1L (HERBOL HERBIDUR ALL SEASONS)

Production process and conditions of delivery
During paint production, the raw materials are pre-weighed according to the percentage of each in the formulation. The pigment is then dispersed in a mixture of binder and solvent using a variety of machines. The amount and type of dispersion is product specific and depends on the type of finish required. Finally, tinter is added to correct the color, the paint is thinned to viscosity, filtered and filled into the appropriate packaging container. All paint containers are transported from the production sites to a distribution center and finally to the customers.

Paint characteristics		Unit
Waterborne / Solventborne	Waterborne	value
Interior wall / Exterior wall / Trim	Exterior wall	value
Lifetime	15	years
Density	1,35124264	kg/L
Coverage	8	m ² /L
Number of layers	2	value
VOC content	3,524820783	g/L paint

Component (> 1%)	(kg / %)
Pigment	Confidential
Binder	Confidential
Solvent	Confidential

SCOPE AND TYPE

The type of this EPD is Cradle-to-Gate with options. All major steps from the extraction of natural resources to the final disposal of the product are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product. This declaration does not imply an indicator result of zero.

This EPD is representative for products produced in Castelletto, IT and Barcelona, ES and the application market is for customers in Europe. Likewise, for the end-of-life, the fate of the paint product is described within a European context.

The software LCA for Experts 10.9.0.31 is used to perform the LCA. In the model Ecoinvent 3.10 database was used.

The validity of this EPD is in correspondence with the specifications of the LCA project report.

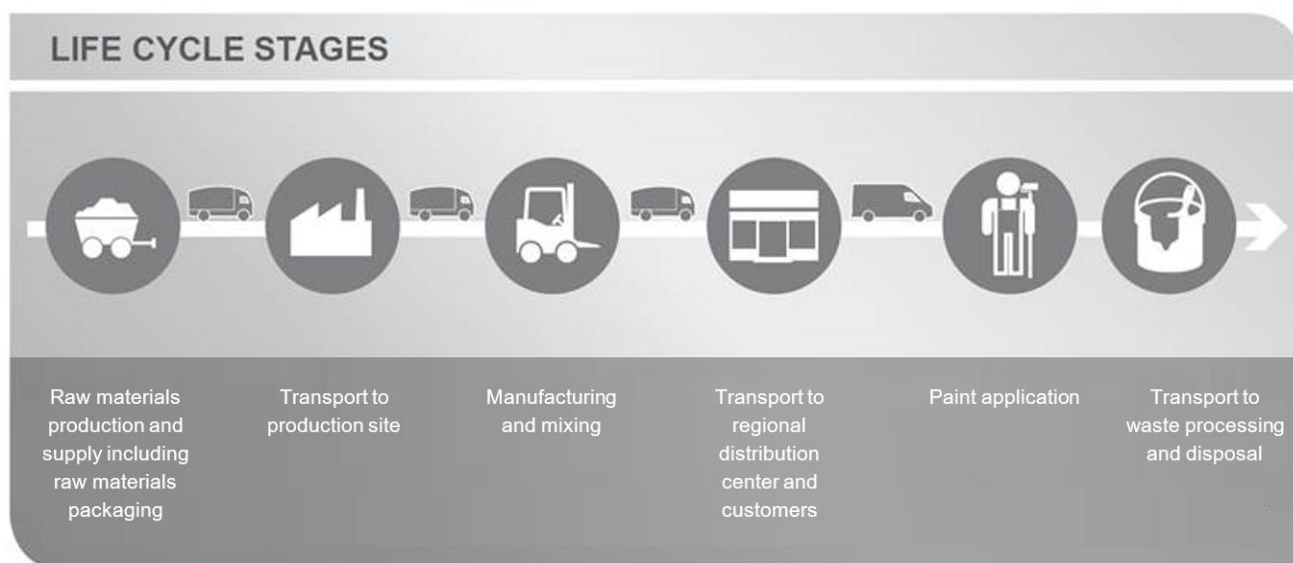
All impacts associated with the upstream production of materials and energy are included in the system boundaries. Mining activities and controlled landfills are included in the product systems. The emissions and resource extractions derived from these processes are considered elementary exchanges between the product systems and the environment.



PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

This EPD is representative of the following paint products:

1. HERBOL HERBIDUR QUARTZ FINE
2. HERBOL HERBOXAN QUARTZ
3. HERBOL FASSADEN PUTZFULLER 0.4MM
4. HERBOL BETON FINISH
5. HERBOL HERBIDUR ALL SEASONS

This EPD is representative for the products manufactured in Castelletto, IT and Barcelona, ES, and sold in Europe.

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total kg CO2 eq.	5,26E-01	1,77E-02	6,70E-02	6,11E-01	2,84E-02	5,82E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E-03	0,00E+00	7,00E-02	-2,43E-02
GWP-fossil kg CO2 eq.	5,25E-01	1,77E-02	8,31E-02	6,26E-01	2,84E-02	4,85E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E-03	0,00E+00	7,00E-02	-2,39E-02
GWP-biogenic kg CO2 eq.	-3,99E-03	9,21E-06	-1,61E-02	-2,01E-02	1,48E-05	9,68E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,35E-07	0,00E+00	1,04E-05	-3,41E-04
GWP-luluc kg CO2 eq.	4,95E-03	6,11E-06	5,35E-05	5,01E-03	9,79E-06	8,73E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,54E-07	0,00E+00	1,09E-06	-2,94E-05
ODP kg CFC11 eq.	2,62E-08	3,58E-10	1,31E-09	2,79E-08	5,75E-10	3,02E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,25E-11	0,00E+00	6,25E-11	-8,09E-10
AP mol H+ eq.	4,17E-03	7,07E-05	2,42E-04	4,48E-03	1,13E-04	1,16E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,42E-06	0,00E+00	1,71E-05	-6,60E-05
EP-fresh water kg P eq.	1,51E-04	1,21E-06	2,33E-05	1,76E-04	1,94E-06	3,24E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,10E-07	0,00E+00	2,52E-07	-8,65E-06
EP-marine kg N eq.	6,35E-04	2,66E-05	5,22E-05	7,14E-04	4,26E-05	9,15E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,41E-06	0,00E+00	6,98E-06	-1,36E-05
EP-terrestrial mol N eq.	7,47E-03	2,88E-04	4,90E-04	8,25E-03	4,62E-04	5,19E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,62E-05	0,00E+00	7,58E-05	-1,27E-04
POCP kg NMVOC eq.	2,00E-03	1,12E-04	2,48E-04	2,36E-03	1,79E-04	2,24E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-05	0,00E+00	2,84E-05	-6,76E-05
ADP-minerals & metals kg Sb eq.	7,22E-06	4,82E-08	7,08E-07	7,98E-06	7,72E-08	6,86E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,37E-09	0,00E+00	4,75E-09	-6,37E-08
ADP-fossil MJ, net calorific value	9,12E+00	2,59E-01	1,49E+00	1,09E+01	4,16E-01	2,44E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-02	0,00E+00	4,59E-02	-5,33E-01
WDP m3 world eq. Deprived	1,88E+01	1,66E-03	3,53E-02	1,88E+01	2,67E-03	-1,81E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,51E-04	0,00E+00	-1,59E-02	-8,76E-03

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic total

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

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 Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM Disease incidence	3,76E-08	1,40E-09	2,27E-09	4,13E-08	2,24E-09	1,34E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,27E-10	0,00E+00	3,16E-10	-2,94E-10
IRP kBq U235 eq.	5,20E-02	3,14E-04	6,70E-03	5,90E-02	5,04E-04	5,04E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,85E-05	0,00E+00	6,04E-05	-6,01E-03
ETP-fw CTUe	6,53E+00	6,14E-02	7,06E-01	7,30E+00	9,84E-02	7,57E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,57E-03	0,00E+00	3,95E-02	-6,53E-02
HTP-c CTUh	9,46E-10	1,11E-10	3,64E-10	1,42E-09	1,77E-10	3,37E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E-11	0,00E+00	8,71E-11	-1,08E-10
HTP-nc CTUh	5,41E-09	1,55E-10	8,06E-10	6,37E-09	2,48E-10	1,70E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,41E-11	0,00E+00	7,61E-11	-1,38E-10
SQP -	3,16E+00	2,60E-01	2,05E+00	5,47E+00	4,17E-01	2,32E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,36E-02	0,00E+00	9,75E-02	-5,15E-02

- PM = Potential incidence of disease due to PM emissions
- IRP = Potential Human exposure efficiency relative to U235 [1]
- ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
- HTP-c = Potential Comparative Toxic Unit for humans [2]
- HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
- SQP = Potential soil quality index [2]

Disclaimer [1]:

- This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste.

Disclaimer [2]:

- 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.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	0,00E+00	0,00E+00	1,30E-02	1,30E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NHWD	kg	0,00E+00	0,00E+00	4,63E-03	4,63E-03	0,00E+00	4,08E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,89E-01	0,00E+00
RWD	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,70E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,43E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,26E-02	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,15E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,29E-02	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,40E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,89E-02	0,00E+00

HWD = Hazardous Waste Disposed
 NHWD = Non Hazardous Waste Disposed
 RWD = Radioactive Waste Disposed
 CRU = Components for reuse
 MFR = Materials for recycling
 MER = Materials for energy recovery
 EEE = Exported Electrical Energy
 ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	8,81E-01	4,12E-03	7,68E-01	1,65E+00	6,60E-03	7,86E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,74E-04	0,00E+00	7,93E-04	-5,13E-02
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,81E-01	4,12E-03	7,68E-01	1,65E+00	6,60E-03	7,86E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,74E-04	0,00E+00	7,93E-04	-5,13E-02
PENRE	MJ	9,12E+00	2,59E-01	1,49E+00	1,09E+01	4,16E-01	2,44E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-02	0,00E+00	4,59E-02	-5,33E-01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,12E+00	2,59E-01	1,49E+00	1,09E+01	4,16E-01	2,44E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-02	0,00E+00	4,59E-02	-5,33E-01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	6,67E-01	3,87E-05	8,21E-04	6,68E-01	6,21E-05	-4,21E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,51E-06	0,00E+00	-3,71E-04	-2,04E-04

PERE	=	Use of renewable energy excluding renewable primary energy resources
PERM	=	Use of renewable energy resources used as raw materials
PERT	=	Total use of renewable primary energy resources
PENRE	=	Use of non-renewable primary energy resources excluding non-renewable 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 resources
SM	=	Use of secondary materials
RSF	=	Use of renewable secondary fuels
NSRF	=	Use of non-renewable secondary fuels
FW	=	Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	-6,65E-03	-6,65E-03	0,00E+00	6,65E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BCCpr	=	Biogenic carbon content in product
BCCpa	=	Biogenic carbon content in packaging

CALCULATION RULES

Cut off criteria

Some cut-offs were applied to the study. During the manufacturing process, the input of consumables and disposed packaging from the raw materials is cut off from the system boundaries due to lack of data on the composition of waste. Furthermore, brushes, clothes, buckets etc. used during the application process are excluded from the assessment since they are considered capital goods. Additionally, the energy consumed during application, used for instance in spray applicators, has not been included due to its insignificance.

Data quality and data collection period

Specific data was collected from AkzoNobel through a questionnaire, including inquiries about paint characteristics and packaging, production information and end-of-life. The data collection period for specific data was the year 2023.

Data gaps (i.e. transport data, end of life scenarios) were covered with data generic values for transport as described in the Product Environmental Footprint Category Rules - Decorative Paints document version 1.0 published by CEPE and reviewed in April 2018 and the Product Environmental Footprint method (European Commission, 2021). Generic data (i.e. upstream acquisition and production of raw materials, transport, waste treatment processes) was selected from Ecoinvent 3.10 database. In the case of missing data, a relevant proxy was searched and adjusted to the corresponding unit process.

Allocation procedure

To allocate the emissions and inputs to the manufactured products, the decision-hierarchy in ISO 14044 is used (ISO 2006). It is not possible to sub-divide the site data into a more detailed level or find physical causalities between inputs and outputs, thus allocation is done based on mass, considering the annual production of paint product for each site. The production of paint comprises only of the mixing ingredients. Therefore, the environmental impact is expected to be related to the mass of the products.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the manufacturing process, as well as waste processing up to the end-of waste state.

A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road.

Transport of raw materials		unit
Distance for raw materials	460	km
Distance for packaging materials	250	km
Capacity	> 32 t, 64% payload	value

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 2)

A3. Manufacturing

This module covers manufacturing and includes all processes linked to production such as storing, mixing, packing and internal transportation. Use of electricity, fuels and auxiliary materials in paint production is accounted for.

Data regarding paint production was provided for the manufacturing site where the coatings are produced in Castelletto, IT and Barcelona, ES. Primary data and site-specific data was provided for the consumption of utilities and product packaging. The electricity is modelled as 100% renewable using the Ecoinvent 3.10 datasets for solar and wind. For upstream (raw material processes) and downstream processes (application, use, and waste processing) generic data is used when no specific data was available.

The manufacture of production equipment and infrastructure is not included in the system boundary.

A4. Transport to Regional Distribution Centre and customer

All paint containers are transported from the production facility into a distribution centre and then finally to the customer. As no primary data was available for the transportation distances, the default values from the PEFCR for Decorative Paints were used.

Transport to RDC and PoS		unit
Factory to Regional Distribution Centre	350	km
Regional Distribution Centre to Point of Sale	370	km
Capacity	> 32 t, 64% payload	value



SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 3)

A5. Application and use

This module includes the environmental aspects and impacts associated with the application and of the paint. It is assumed that no energy is required during the application of this paint. The use of paintbrushes and other appliances used during application are not included. There are some raw materials added in the paint formulations which contain small amounts of solvents. The VOC emissions during application of paint are included in this module.

C2. Transport to incineration or landfill

This module includes one-way transportation distance of the demolition or sorting site to the dump site.

Transport of EoL waste		unit
Distance for raw materials	80	km
Capacity	> 32 t, 64% payload	value

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 4)

C3. Waste processing and C4. Disposal

The end of life stage is encompassed in these modules. It is assumed that paint is used as exterior paint and that part of the paint is lost during application. The applied paint is then disposed of with the substrate on which it has been applied.

EoL		unit
% to Landfill	88	%
% to Incineration with energy recovery	12	%

DECLARATION OF SVHC

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorisation", or they do not exceed the threshold with the European Chemicals Agency.

REFERENCES

CEPE, Raw materials LCI database for the European Council of the Paint, Printing Ink and Artists' Colours Industry (CEPE), version 4.0, IVL Swedish Environmental Research Institute, 2024

EN 15804:2012+A2:2019 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products, of 2019.

European Commission, PEFCR Guidance document, - Guidance for the development of Product Environmental Footprint Category Rules (PEFCRs), version 6.3, December 2017.

ISO 14040/14044 on Life Cycle Assessments

Product Environmental Footprint Category Rules - Decorative Paints version 1.0, 2018. Developed by the Technical Secretariat Decorative Paints of the European Council of the Paint, Printing Ink and Artists' Colours Industry.

Sphera GaBi Software-System and Database for Life Cycle Engineering. Copyright 1992-2018 Sphera.

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: <<http://link.springer.com/10.1007/s11367-016-1087-8>> [Accessed 20-01-2021]

Coenen, J., 2024. Personal communication with Job Coenen, Senior Program Manager Sustainability, Akzo Nobel Decorative Paints

