



**Environmental  
Product  
Declaration**

According to EN15804+A2



This declaration is for:

**Dulux Trade Diamond Satinwood**

Provided by:

**AkzoNobel Decorative Paints**



program operator  
**Stichting MRPI®**  
publisher  
**Stichting MRPI®**  
[www.mrpi.nl](http://www.mrpi.nl)

MRPI® registration  
**1.1.00528.2024**  
date of first issue  
**5-4-2024**  
date of this issue  
**5-4-2024**  
expiry date  
**5-4-2029**





### COMPANY INFORMATION



AkzoNobel Decorative Paints  
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### MRPI® REGISTRATION

1.1.00528.2024

### DATE OF ISSUE

5-4-2024

### EXPIRY DATE

5-4-2029

### SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco intelligence. The LCA study has been done by Serena Cunsolo, Brienne Wiersema, Ecomatters. The certificate is based on an LCA-dossier according to EN15804+A2. It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'.

EPD's 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®  
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1043 GR  
Amsterdam

Ing. L. L. Oosterveen MSc. MBA  
Managing Director MRPI

### PRODUCT

Dulux Trade Diamond Satinwood

### DECLARED UNIT/FUNCTIONAL UNIT

All impacts are calculated using the declared unit "decoration of 1 m2 of surface with 1 layer of paint"

### DESCRIPTION OF PRODUCT

Dulux Trade Diamond Satinwood is a tough & durable satin finish that is suitable for interior wood and metal surfaces

### VISUAL PRODUCT



### MORE INFORMATION

<https://www.duluxtradepaintexpert.co.uk/en/products/dulux-trade-diamond-satinwood>

### DEMONSTRATION OF VERIFICATION

|  |             |
|--|-------------|
| CEN standard EN15804 serves as the core PCR(a)                               |             |
| Independent verification of the declaration and data according to EN15804+A2 |             |
| internal:  | external: x |
| Third party verifier: Gert-Jan Vroege, Eco Intelligence                      |             |
|  |             |
| [a] PCR = Product Category Rules   |             |





## DETAILED PRODUCT DESCRIPTION

Dulux Trade Diamond Satinwood is a tough & durable satin finish that provides excellent protection from scratches, stains and grease. The water based formulation is designed to be used in high traffic areas such as corridors, stairways and access areas, while having the added benefit of being quick drying with low odour.

### Typical use

Suitable for use on interior wood and metal surfaces

### Application method

Brush, roller or HVLP spray. As with other water-based paints, do not apply at temperatures below 8°C (as recommended by British Standard BS 6150).

### Pack size (L)

The products are packed in a packaging with a capacity of 1, 2.5 and 5 liters.

### 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 in the UK.

| Component > 1% of total mass         | (%)          |
|--------------------------------------|--------------|
| Pigment: Lightfast pigments          | Confidential |
| Binder: Acrylic Copolymer Dispersion | Confidential |
| Solvent: Water                       | Confidential |

## SCOPE AND TYPE

The type of this EPD is Cradle-to-Grave 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 France and Belgium and the application market is for customers in the UK. For the end-of-life, as a conservative assumption, the fate of the paint product is described within a global context.

The software Sphera LCA for Experts 10.7.1.28 is used to perform the LCA. In the model Ecoinvent 3.9.1 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 |                        |          | USER STAGE |             |        |             |               |                        |                       | END OF LIFE STAGE          |           |                  |          | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES |
|---------------------|-----------|----------------------------|------------------------|----------|------------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|---|
| Rawmaterial 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 for four paint products to Dulux Trade Diamond Satinwood:

1. Dulux Trade Diamond Satinwood Pure Brilliant White
2. Dulux Trade Diamond Satinwood Light Base
3. Dulux Trade Diamond Satinwood Extra Deep Base

This EPD is representative for products manufactured in France and Belgium, and sold in the UK.





**ENVIRONMENT 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.              | 2,50 E-01  | 5,04 E-03 | 4,68 E-02  | 3,02 E-01  | 7,94 E-03 | 1,42 E-02  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 8,21 E-04 | 0,00 E+00 | 2,88 E-02 | -1,62 E-02 |
| GWP-fossil            | kg CO2 eq.              | 2,50 E-01  | 5,03 E-03 | 5,36 E-02  | 3,09 E-01  | 7,93 E-03 | 5,27 E-03  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 8,21 E-04 | 0,00 E+00 | 2,88 E-02 | -1,62 E-02 |
| GWP-biogenic          | kg CO2 eq.              | -4,09 E-04 | 3,89 E-06 | -6,79 E-03 | -7,19 E-03 | 4,48 E-06 | 8,96 E-03  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 3,03 E-07 | 0,00 E+00 | 1,24 E-06 | 1,77 E-06  |
| GWP-luluc             | kg CO2 eq.              | 8,69 E-04  | 2,38 E-06 | 2,62 E-05  | 8,97 E-04  | 3,86 E-06 | 5,10 E-07  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 4,09 E-07 | 0,00 E+00 | 4,09 E-07 | -7,64 E-06 |
| ODP                   | kg CFC11 eq.            | 2,93 E-07  | 1,11 E-10 | 1,30 E-09  | 2,94 E-07  | 1,52 E-10 | 2,63 E-11  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 1,35 E-11 | 0,00 E+00 | 2,07 E-11 | -6,80 E-10 |
| AP                    | mol H+ eq.              | 1,92 E-03  | 2,09 E-05 | 1,53 E-04  | 2,10 E-03  | 3,39 E-05 | 6,01 E-06  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 3,60 E-06 | 0,00 E+00 | 6,45 E-06 | -6,08 E-05 |
| EP-freshwater         | kg PO4 eq.              | 5,75 E-05  | 3,60 E-07 | 2,17 E-06  | 6,01 E-05  | 6,08 E-07 | 8,03 E-08  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 6,69 E-08 | 0,00 E+00 | 8,71 E-08 | -6,17 E-06 |
| EP-marine             | kg N eq.                | 2,79 E-04  | 7,94 E-06 | 3,86 E-05  | 3,26 E-04  | 1,26 E-05 | 2,75 E-06  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 1,32 E-06 | 0,00 E+00 | 2,66 E-06 | -1,38 E-05 |
| EP-terrestrial        | mol N eq.               | 2,79 E-03  | 8,45 E-05 | 3,67 E-04  | 3,24 E-03  | 1,35 E-04 | 2,83 E-05  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 1,41 E-05 | 0,00 E+00 | 2,88 E-05 | -1,41 E-04 |
| POCP                  | kg NMVOC eq.            | 9,69 E-04  | 3,17 E-05 | 1,33 E-04  | 1,13 E-03  | 4,95 E-05 | 1,46 E-03  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 5,08 E-06 | 0,00 E+00 | 8,87 E-06 | -7,48 E-05 |
| ADP-minerals & metals | kg Sb eq.               | 6,79 E-07  | 1,37 E-08 | 2,92 E-08  | 7,21 E-07  | 2,16 E-08 | -7,91 E-09 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 2,23 E-09 | 0,00 E+00 | 1,37 E-09 | -2,35 E-08 |
| ADP-fossil            | MJ, net calorific value | 4,32 E+00  | 7,48 E-02 | 6,82 E-01  | 5,08 E+00  | 1,18 E-01 | 2,20 E-02  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 1,22 E-02 | 0,00 E+00 | 1,56 E-02 | -2,47 E-01 |
| WDP                   | m3 world eq. Deprived   | 8,03 E+00  | 4,99 E-04 | 1,32 E-03  | 8,04 E+00  | 7,92 E-04 | 9,04 E-05  | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 0,00 E+00 | 8,24 E-05 | 0,00 E+00 | 6,78 E-04 | -1,66 E-03 |

GWP-total = Global Warming Potential total

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 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 [2]

ADP-fossil = Abiotic Depletion for fossil resources potential [2]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

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 experienced with the indicator





**ENVIRONMENT 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 | 2,64<br>E-08 | 4,02<br>E-10 | 1,97<br>E-09 | 2,88<br>E-08 | 6,33<br>E-10 | 1,12<br>E-10 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 6,55<br>E-11 | 0,00<br>E+00 | 1,05<br>E-10 | -1,08<br>E-09 |
| IRP    | kBq U235 eq.      | 2,40<br>E-02 | 9,35<br>E-05 | 1,43<br>E-03 | 2,55<br>E-02 | 1,26<br>E-04 | 1,33<br>E-05 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,10<br>E-05 | 0,00<br>E+00 | 1,15<br>E-05 | -1,05<br>E-03 |
| ETP-fw | CTUe              | 1,64<br>E+01 | 3,51<br>E-02 | 1,73<br>E-01 | 1,66<br>E+01 | 5,82<br>E-02 | 2,50<br>E-02 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 6,29<br>E-03 | 0,00<br>E+00 | 8,55<br>E-01 | -5,04<br>E-02 |
| HTP-c  | CTUh              | 4,23<br>E-10 | 2,31<br>E-12 | 4,54<br>E-11 | 4,70<br>E-10 | 3,64<br>E-12 | 4,98<br>E-12 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 3,77<br>E-13 | 0,00<br>E+00 | 3,65<br>E-11 | -7,17<br>E-11 |
| HTP-nc | CTUh              | 2,43<br>E-09 | 4,62<br>E-11 | 1,96<br>E-10 | 2,67<br>E-09 | 7,33<br>E-11 | 3,41<br>E-10 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 7,63<br>E-12 | 0,00<br>E+00 | 1,12<br>E-10 | -8,45<br>E-11 |
| SQP    | ----              | 9,99<br>E-01 | 7,52<br>E-02 | 1,26<br>E+00 | 2,33<br>E+00 | 1,18<br>E-01 | 1,98<br>E-02 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,22<br>E-02 | 0,00<br>E+00 | 2,69<br>E-02 | -3,65<br>E-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 experienced with the indicator.





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

|      | Unit | A1           | A2           | A3           | A1-A3        | A4           | A5           | B1           | B2           | B3           | B4           | B5           | B6           | B7           | C1           | C2           | C3           | C4           | D            |              |
|------|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| HWD  | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 7,59<br>E-04 | 7,59<br>E-04 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| NHWD | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 3,04<br>E-03 | 3,04<br>E-03 | 0,00<br>E+00 | 1,22<br>E-02 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 9,17<br>E-02 | 0,00<br>E+00 |
| RWD  | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| CRU  | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| MFR  | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 7,81<br>E-03 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| MER  | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,39<br>E-02 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| EEE  | MJ   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |
| ETE  | MJ   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |              |

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







**RESOURCE USE per functional unit or declared unit (A1 / A2)**

|       | Unit | A1           | A2           | A3           | A1-A3        | A4           | A5            | B1           | B2           | B3           | B4           | B5           | B6           | B7           | C1           | C2           | C3           | C4           | D            |
|-------|------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| PERE  | MJ   | 2,04<br>E-01 | 1,09<br>E-03 | 1,91<br>E-01 | 3,96<br>E-01 | 1,59<br>E-03 | -5,47<br>E-05 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,53<br>E-04 | 0,00<br>E+00 | 1,81<br>E-04 | -9,6<br>E-03 |
| PERM  | MJ   | 9,60<br>E-05 | 5,38<br>E-10 | 7,81<br>E-05 | 1,74<br>E-04 | 8,64<br>E-10 | 1,53<br>E-10  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 9,10<br>E-11 | 0,00<br>E+00 | 2,66<br>E-10 | -1,2<br>E-09 |
| PERT  | MJ   | 2,04<br>E-01 | 1,09<br>E-03 | 1,91<br>E-01 | 3,96<br>E-01 | 1,59<br>E-03 | -5,47<br>E-05 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,53<br>E-04 | 0,00<br>E+00 | 1,81<br>E-04 | -9,6<br>E-03 |
| PENRE | MJ   | 4,32<br>E+00 | 7,48<br>E-02 | 6,82<br>E-01 | 5,08<br>E+00 | 1,18<br>E-01 | 2,20<br>E-02  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,22<br>E-02 | 0,00<br>E+00 | 1,56<br>E-02 | -2,5<br>E-01 |
| PENRM | MJ   | 5,45<br>E-06 | 0,00<br>E+00 | 1,02<br>E-09 | 5,45<br>E-06 | 0,00<br>E+00 | 0,00<br>E+00  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,0<br>E+00  |
| PENRT | MJ   | 4,33<br>E+00 | 7,48<br>E-02 | 6,82<br>E-01 | 5,09<br>E+00 | 1,18<br>E-01 | 2,20<br>E-02  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,22<br>E-02 | 0,00<br>E+00 | 1,56<br>E-02 | -2,5<br>E-01 |
| SM    | kg   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,0<br>E+00  |
| RSF   | MJ   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,0<br>E+00  |
| NRSF  | MJ   | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,0<br>E+00  |
| FW    | m3   | 1,87<br>E-01 | 1,16<br>E-05 | 4,35<br>E-05 | 1,87<br>E-01 | 1,84<br>E-05 | 2,10<br>E-06  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 1,92<br>E-06 | 0,00<br>E+00 | 1,58<br>E-05 | -3,9<br>E-05 |

- 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
- NRSF = Use of non renewable secondary fuels
- FW = Use of net fresh water

**BIOGEEEN CARBON CONTENT per functional unit or declared unit (A1 / A2)**

|       | Unit | A1           | A2           | A3            | A1-A3         | A4           | A5           | B1           | B2           | B3           | B4           | B5           | B6           | B7           | C1           | C2           | C3           | C4           | D            |
|-------|------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| BBCpr | kg C | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00  | 0,00<br>E+00  | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |
| BCCpa | kg C | 0,00<br>E+00 | 0,00<br>E+00 | -2,78<br>E-03 | -2,78<br>E-03 | 0,00<br>E+00 | 2,78<br>E-03 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 | 0,00<br>E+00 |

- BBCpr = Biogenic carbon content in product
- BCCpa = Biogenic carbon content in packaging





## CALCULATION RULES

### Cut off criteria

The only cut-off is considered in the installation stage (A5). The energy consumed during application, used for instance in spray applications, 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, logistics data (e.g. transport), production information and end-of-life. The data collection period for specific data was the year 2022.

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. Further data gaps (i.e. end-of-life transport data) were covered with data from internal AkzoNobel LCA studies concerning the same type of products (paints and coatings). Generic data (i.e. upstream acquisition and production of raw materials, energy generation, transport, waste treatment processes) was selected from Ecoinvent 3.9.1 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 paint production is basically a process of mixing ingredients and, therefore, the environmental impact is fairly to be related to the mass of the products.

| Parameter          | Value | Unit     |
|--------------------|-------|----------|
| VOC content        | 73,9  | g/l      |
| Density            | 1,3   | Kg/l     |
| Coverage           | 12    | m2/l     |
| Number of layers   | 1     | Quantity |
| Total product used | 0,10  | Kg/m2    |

## SENARIOS AND ADDITIONAL TECHNICAL INFORMATION

### A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the Dulux Trade Diamond Satinwood 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 and sea.

| Vehicle type used for transport | Truck              |
|---------------------------------|--------------------|
| Distance, km                    | 460                |
| Capacity                        | >32 t, 64% payload |

### A3. Manufacturing

This module covers the manufacturing of the Dulux Trade Diamond Satinwood 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 taken into account as well.

Data regarding paint production was provided for the manufacturing sites where the Dulux Trade Diamond Satinwood was produced (France and Belgium). The transportation distances and transportation modes for raw materials, packaging materials and to customer were collected from the AkzoNobel logistics department. Primary data and site-specific data were retrieved and data gaps 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. For electricity sources (renewable mix) the Ecoinvent 3.9.1 dataset was used. For upstream (raw material processes) and downstream processes (application, use, and waste processing) generic data is used when no specific data is obtained.





The construction site data includes lighting, heating, offices, etc. 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. On average, the transport characteristics for this life cycle stage are the following

| Coatings transport type | Transport from factory to RDC | Transport from RDC to point of sales (customer) |
|-------------------------|-------------------------------|---|
| Transport type          | Truck                         | Truck   |
| Distance, km            | 350                           | 370   |
| Capacity                | > 32t, 64% payload            | > 32t, 64% payload                              |

**A5. Application and use**

This module includes the environmental aspects and impacts associated with the application and of the paint. The energy required for the application of this paint has not been included in the study as it is deemed negligible. 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 from the application process have been included in the assessment.

**C2. Transport to incineration or landfill**

This module includes one-way transportation distance of the demolition or sorting site to the dump site. Transportation distances to the disposal facility were retrieved from the Product Environmental Footprint Category Rules – Decorative paints document.

| End-of-life transport type | Transport to waste processing       |
|----------------------------|-------------------------------------|
| Vehicle type               | Truck 34t-40t payload average fleet |
| Distance, km               | 80km                                |
| Capacity utilisation       | 64%                                 |

**C3. Waste processing and C4. Disposal**

The end of life stage is encompassed in these modules. It is assumed that paint is used as interior wall paint. It is assumed that part of the paint is lost during application and the rest is applied.

| Classification op paint, based on function | % of sold paint to landfill | % of sold paint to incineration |
|--|-----------------------------|---------------------------------|
| Interior trim decorative paints            | 88%                         | 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**

- EN 15804:2012+A2:2019 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products, of 2019.
- 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.
- Talbot, R, 2022. Personal communication with Rob Talbot, Quality & Regulations Manager Trade Marketing, Akzo Nobel Decorative Paints, UK.





- Thinkstep GaBi Software-System and Database for Life Cycle Engineering. Copyright 1992-2018 ThinkStep AG.
- 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 21 12 2021.]



#### REMARKS

There are no further remarks.

