ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Branth-Chemie A.V. Branth KG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-BRC-20240259-CBC1-EN
Issue date	22.11.2024
Valid to	21.11.2029

Brantho-Korrux/Powercoat 3 in 1

Branth-Chemie A.V.Branth KG

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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General Information

Branth-Chemie A.V.Branth KG

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-BRC-20240259-CBC1-EN

This declaration is based on the product category rules:

Coatings with organic binders, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

22.11.2024

Valid to

21.11.2029

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Brantho-Korrux/Powercoat 3 in 1

Owner of the declaration

Branth-Chemie A.V. Branth KG
Biedenkamp 23
21509 Glinde
Germany

Declared product / declared unit

1 kg of Brantho-Korrux 3 in 1 / Powercoat 3 in 1

Scope:

The EPD is applicable for the Brantho-Korrux 3 in 1/ Power Coat 3 in 1 products.

The products are produced at the Branth production site in Glinde near Hamburg in Germany. The declaration is for the environmental impact of an average product composition (average EPD).

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally

Ms Jane Anderson,
(Independent verifier)

Product

Product description/Product definition

Brantho-Korrux 3 in 1 / Power Coat 3 in 1 is a one-component solvent based (aromatic-free) paint for corrosion protection of constructions, buildings, machines and transport vehicles in rural-, urban-, industrial- and maritime areas. Brantho-Korrux 3 in 1 / Power Coat 3 in 1 has a semi gloss finish (except effect colours).
For the use and application of the product the respective national provisions at the place of use apply.

Application

Brantho-Korrux 3 in 1 / Power Coat 3 in 1 can be applied using a roller, brush or by spray application techniques. Dipping is also possible.
Ist is suitable for all metal surfaces, concrete, most hard pastics, glas, screed, old coatings, rust, etc.
The product is suitable:

- as a protective coating for new construction or maintenance
- as both primer and topcoat
- as a primer for 1-component and most 2-component finishes
- for constructions built from several types of materials
- as a substitute for toxic red-lead primer (tested by the German Railway authorities)
- as a substitute for environmentally unfriendly PVC / Chl. Rubber coatings
- as a substitute for epoxy coatings (partly)
- as a substitute for simple and complicated alkyd coatings

This product is not recommended for application on soft plastics or exterior application on wood, as it is not vapour permeable.
Baking or forced curing (heat) is NOT POSSIBLE.
The substrate should be dry, solid and free of contaminants.
Stir well before application (by hand or machine).
Possible application and drying temperature from minus 10° C to plus 30° C.
Ideal application and drying temperature from plus 15° C to plus 25o C.

Product for which no legal provisions for harmonisation of the EU exist.
For the use and application of the product the respective national provisions at the place of use apply, in Germany for example the building codes of the federal states and the corresponding national specifications.

Technical Data

A CE-marking does not exists for coatings as they are semi-finished products whose final state is achieved by its proper processing.
Therefore properties in liquid state are listed in the following chapter "Constructional data".

Constructional data

Name	Value	Unit
Density	1100 - 1500	kg/m^3
Density	1.1-1.5	kg/ltr.
Solids content	69 - 73	%
Gloss (Lacke)	40 - 70	%
Viscosity	155 - 175	s; DIN 4mm
Corrosion level (DIN EN ISO 12944)	C1, C2, C3, C4, C5, CX	Corrosion Category
NORSOK standards	300	µm DFT
GISBAU	M-GP02	primer, pigmented, solvent based, free of aromatic hydrocarbons
GISBAU	M-LL01	coating, solvent based, aromatic free
DIN 4102-1 (on metals)	A1/A2	not-flammable
Indoor Air Pollution	A+	-
DIN 55928-5	Ü-mark	Approved for steel-constructions and equipment
Decopaint-directives	II1i	One-Component-special coating, Metal-high-build coating (bulding)
Decopaint-directives	II2e	One-component-coating, underbody protection coating (vehicle repair)

Product for which no legal provisions for harmonisation of the EU exist.
For the use and application of the product the respective national provisions at the place of use apply, in Germany for example the building codes of the federal states and the corresponding national specifications.

Base materials/Ancillary materials

Brantho-Korrux 3 in 1 / Power Coat 3 in 1 comprise the following substances:

Name	Value	Unit
Binders	20-40	%
Organic pigments	0.5-2	%
Inorganic fillers/pigments	25-50	%
additives	15-35	%

This product/article/at least one partial article contains substances listed in *the candidate list* of substances of very high concern (SVHC) for authorisation (date: 27.06.2018) exceeding 0.1 percentage by mass: **NO**

This product/article/at least one partial article contains other Carcinogenic, mutagenic, reprotoxic (CMR)substances in categories 1A or 1B which are not on *the candidate list*, exceeding 0.1 percentage by mass: **NO**

Biocide products were added to this construction product or it has been treated with biocide products: **NO**

Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)

Reference service life

The RSL is dependent on the application scenario which has not been defined in this EPD. Paint in its original form is a semi-

finished product. Therefore, no RSL is declared. Further information about resistances (after proper processing) can be found in the technical data sheet.

LCA: Calculation rules

Declared Unit
The declared unit for calculation is 1 kg of Brantho-Korrux 3 in 1 / Power Coat 3 paint ready to be applied excluding packaging. It is packaged in a tin can (0.097 kg).

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	kg
Gross density (mean value)	1.4	kg/ltr.
Gross density (mean value)	1400	kg/m^3
Dry layer thickness	60	µm
Productiveness	6,4	m²/kg

This EPD declares an average composition for all products under study. As an estimate of the robustness of the LCA values, the weighted average composition of the declared Brantho-Korrux 3 in 1 / Powercoat 3 in 1 product is calculated relative to the production volume shares of a total of 19 variants in scope produced at the Branth production site located in Glinde, Germany. The production process remains the same for all variants in scope. The weighted average is representative of the environemntal impacts of the 19 variants covered in scope.

System boundary
The type of EPD according to *EN15804* is cradle to gate with options, modules C1–C4, and module D.
The following modules are declared: A1–A3, C, D and additional module A5.

Production stage - Modules A1-A3
The product stage includes:

- Raw material supply (A1)
- Transport to the manufacturer (A2)
- Manufacturing (A3), including provision of energy. Packaging is also considered in this module.

Construction stage - Module A5
The construction stage considers packaging treatment (recycling) of metal paint cans.

The treatment and potential benefits for avoided primary production (for the net scrap amount only) are declared in module D. The solvent emissions to air when the paint is applied are also declared in this module.

End-of-Life (EoL) stage - Modules C1-C4

- EoL module C1: Manual dismantling/ deconstruction (without environmental burdens).
- EoL module C2: Truck transport to waste treatment with a distance of 530 km (can be adapted on building level, if relevant)
- EoL module C4: considers disposal emissions only without benefits (100% scenario). The disposal scenario (EU region) assumes that the coating is on a e.g., metal surface during disposal and is thermally disposed off when the metal is recycled (melting). No benefits are considered. Only the resulting emissions are taken into account. Module C3 is declared as 0.

Reuse, recovery or recycling potential beyond system boundary - Module D
Loads and benefits beyond the system boundary would be declared in this module, if relevant.

Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Germany

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. Background dataset : *Sphera LCA FE (GaBi ts) software, CUP 2023.1*

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon
The calculation of the biogenic carbon content in the declared product is based on the assumption of the biogenic carbon content in the materials composition (based on the mapped Sphera LCA FE dataset).
No biogenic carbon content exists in the packaging material.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	0.0339	kg C
Biogenic carbon content in accompanying packaging	-	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

The following technical scenario information is used to calculate the declared modules.
The values refer to the declared unit of 1 kg of Brantho-Korrux 3 in 1 / Powercoat 3 in 1.

Installation into the building (A5)

Name	Value	Unit
Tin packaging sent to recycling	0.097	kg
Solvent emissions to air (during application)	0.266	kg

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End of life (C1-C4)
Module C1: Manual dismantling (no environmental loads).
Module C2: An average transport distance of 530 km is assumed by truck.
Module C4: Considers disposal emissions only without benefits. The disposal scenario (EU region) assumes that the coating is on a e.g., metal surface during disposal and is thermally disposed off when the metal is recycled (melting/incineration). No benefits are awarded for incineration due to energy substitution, but only the resulting emissions are taken into account. A conservative approach of End of Life with cut off is considered, so no energy benefits are applied.

Name	Value	Unit
Thermal utilization without energy recovery	0.734	kg

Reuse, recovery and/or recycling potentials (D), relevant

scenario information

This module considers the benefits of packaging treatment (metal recycling) only

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LCA: Results

The following tables display the environmentally relevant results according to *EN 15804* for 1 kg of Brantho-Korrux 3 in 1 / Powercoat 3 in 1.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the 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	MND	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg Brantho-Korrux/Powercoat 3 in 1

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	1.95E+00	1.39E-01	0	2.89E-02	0	1.98E+00	-1.32E-01
GWP-fossil	kg CO_2 eq	2.33E+00	1.39E-01	0	2.85E-02	0	1.86E+00	-1.32E-01
GWP-biogenic	kg CO_2 eq	-3.81E-01	0	0	8.43E-05	0	1.25E-01	6.72E-05
GWP-luluc	kg CO_2 eq	8.63E-04	0	0	2.64E-04	0	3.97E-05	-2.72E-06
ODP	kg CFC11 eq	7.32E-12	0	0	3.71E-15	0	6.29E-13	-2.88E-16
AP	mol H^+ eq	7.02E-03	0	0	2.82E-05	0	3.13E-04	-2.83E-04
EP-freshwater	kg P eq	1.15E-05	0	0	1.04E-07	0	1.59E-07	-2.39E-08
EP-marine	kg N eq	1.48E-03	0	0	8.02E-06	0	6.99E-05	-4.97E-05
EP-terrestrial	mol N eq	1.6E-02	0	0	1.01E-04	0	1.46E-03	-4.37E-04
POCP	kg NMVOC eq	1.01E-02	1.29E-01	0	2.35E-05	0	1.93E-04	-2.02E-04
ADPE	kg Sb eq	9.96E-06	0	0	1.88E-09	0	4.93E-09	-3.28E-07
ADPF	MJ	4.78E+01	0	0	3.89E-01	0	9.42E-01	-1.21E+00
WDP	m^3 world eq deprived	4.88E-01	0	0	3.45E-04	0	1.73E-01	-2.45E-02

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg Brantho-Korrux/Powercoat 3 in 1

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	2.98E+00	0	0	2.83E-02	0	2.29E+00	7.62E-02
PERM	MJ	1.98E+00	0	0	0	0	-1.98E+00	0
PERT	MJ	4.96E+00	0	0	2.83E-02	0	3.1E-01	7.62E-02
PENRE	MJ	1.98E+01	0	0	3.9E-01	0	2.9E+01	-1.21E+00
PENRM	MJ	2.8E+01	0	0	0	0	-2.8E+01	0
PENRT	MJ	4.79E+01	0	0	3.9E-01	0	9.43E-01	-1.21E+00
SM	kg	2.1E-02	0	0	0	0	0	7.6E-02
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m^3	1.72E-02	0	0	3.1E-05	0	4.16E-03	-5.53E-04

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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg Brantho-Korrux/Powercoat 3 in 1

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
HWD	kg	3.83E-09	0	0	1.21E-12	0	3.25E-14	-9.34E-12
NHWD	kg	8.17E-01	0	0	5.95E-05	0	1.85E-01	1.83E-02
RWD	kg	8.55E-04	0	0	7.3E-07	0	3.17E-05	1.5E-07
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	9.7E-02	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0

EET	MJ	0	0	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 kg Brantho-Korrux/Powercoat 3 in 1

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
PM	Disease incidence	6.62E-08	0	0	2.14E-10	0	3.58E-09	-4E-09
IR	kBq U235 eq	9.77E-02	0	0	1.09E-04	0	3.35E-03	2.96E-03
ETP-fw	CTUe	2.6E+01	3.21E-01	0	2.76E-01	0	3.04E-01	-7.45E-02
HTP-c	CTUh	1.08E-09	0	0	5.65E-12	0	2.89E-11	-5.38E-11
HTP-nc	CTUh	7.38E-08	1.97E-09	0	2.97E-10	0	2.54E-09	-1.78E-09
SQP	SQP	8.85E+00	0	0	1.62E-01	0	2.8E-01	1.46E-02

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. 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 or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

References

Standards

DIN EN ISO 12944
Paints and varnishes - Corrosion protection of steel structures by protective paint systems

DIN EN ISO 14001
Environmental management systems - Requirements with guidance for use (ISO 14001:2015); German and English version EN ISO 14001:2015

DIN EN ISO 14025
EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

DIN EN 15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

DIN 4102-1
Fire behaviour of building materials and building components - Part 1: Building materials; concepts, requirements and tests 1998

DIN 55928-5 P221159697 MPA - NRW
Binders for paints and varnishes - Refined soya bean oil - Requirements and methods of test: Approval for steel-constructions and -equipment (Ü-mark)

DIN EN 71-3
Safety of toys - Part 3: Migration of certain elements; German version EN 71-3:2019+A1:2021

DIN EN ISO 9001
Quality management systems - Requirements (ISO 9001:2015); German and English version EN ISO 9001:2015

Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

Decopaint-directives
Limitation of emissions / /EU Directive 2004/2

EMAS
Eco-Management and Audit Scheme: www.emas.de

Emissions Dans L'Air Interieur / Indoor air pollution classification
VOC Regulation for construction products and furnishing and equipment materials: https://www.eco-institut.de/de/portfolio/emissions-dans-lair-interieur/

GISBAU
Gefahrstoff-Informationssystem der BG BAU (Hazardous substance information system of the BG BAU): www.bgbau.de/themen/sicherheit-und-gesundheit/gefahrstoffe/gisbau

NORSOK standards
www.standard.no/en/sectors/petroleum/norsok-standards/

REACH
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

ROHS 2011/65/EU Regulation (EC) No 65/2011 and No 863/2015 of the European Parliament and of the Council of 8th june 2011 and 31st march 2015 concerning the restriction of the use of certain hazardous substances in electrical and electronic equipment

Further References

IBU 2021
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PCR - Part A: Calculation rules for the Life Cycle Assessment and Requirements on the BackgroundReport, version 1.3, Institut Bauen und Umwelt e.V., 2021.

PCR Part B
PCR – Part B: Requirements of the EPD for Coatings with organic binders, v5, Institut Bauen und Umwelt e.V., www.bau-umwelt.com, 2023

Sphera LCA FE (GaBi ts)
GaBi ts dataset documentation for the software-system and databases, LBP, University of Stuttgart and thinkstep,Leinfelden-Echterdingen, 2023 (https://www.gabi┐software.com/support/gabi).

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