# **ENVIRONMENTAL PRODUCT DECLARATION**

as per ISO 14025 and EN 15804+A1

Owner of the Declaration TIGER Coatings GmbH & Co. KG

Programme holder Institut Bauen und Umwelt e.V. (IBU)

Publisher Institut Bauen und Umwelt e.V. (IBU)

Declaration number EPD-TIG-20200056-IAD1-EN

Issue date 22.06.2021 Valid to 21.06.2026

TIGER Drylac® Series 75
TIGER Coatings GmbH & Co. KG



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# 1. General Information

# TIGER Coatings GmbH & Co. KG

# Programme holder

IBU – Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany

#### **Declaration number**

EPD-TIG-20200056-IAD1-EN

# This declaration is based on the product category rules:

Coatings with organic binders, 01.2019 (PCR checked and approved by the SVR)

### Issue date

22.06.2021

#### Valid to

21.06.2026

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

Dr. Alexander Röder (Managing Director Institut Bauen und Umwelt e.V.))

Stonk Harls

# TIGER Drylac® Series 75

## Owner of the declaration

TIGER Coatings GmbH & Co. KG Negrellistraße 36 4600 Wels Austria

#### Declared product / declared unit

1 kg TIGER Drylac<sup>®</sup> Series 75 with a raw density between 1.3 – 1.9 g/cm<sup>3</sup>.

#### Scope:

This EPD is based on a declared unit of 1 kg TIGER Drylac $^{\odot}$  Series 75 with a raw density between 1,4 – 1,8 g/cm $^{3}$  produced at the TIGER sites

- TIGER Coatings GmbH u Co.KG located in Wels, Austria (TCA),
- TIGER Drylac U.S.A., Inc. located in St. Charles, USA (TDU) and
- TIGER Drylac Vietnam Co., Ltd. located in Binh Duong, Vietnam (TDV).

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+A1*. 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 14025:2010* 

internally

x externally



Dr.-Ing. Wolfram Trinius (Independent verifier)

# 2. Product

# 2.1 Information about the enterprise

TIGER Coatings was founded in 1930 from a paint shop and today is an internationally active family business with 8 production sites worldwide, 3 research & development centres and a sales network in about 50 countries. The sixth-largest powder coating manufacturer in the world, headquartered in Wels, Austria, generated sales of EUR 300 million in 2019 with about 1,260 employees.

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The high-quality coating solutions from TIGER – powder coating and digital inks for industrial printing systems – guarantee long-term value retention and are used, for example, on facades, car wheels, furniture, refrigerators or machines. With its brands, TIGER-Drylac®, TIGITAL® 3D-Set, TIGER continues to drive innovation and offers completely new thermoset materials for SLS 3D printing.

# 2.2 Product description/Product definition

This Environmental Product Declaration declares a thermosetting powder coating for exterior architectural application with hyper durable weatherability.

TIGER Drylac® Series 75 is a highly weather-resistant duroplastic powder coating in a smooth matte finish based on Fluoropolymer, the corresponding hardener, and UV-light resistant pigments.

For the use and application of the product, the respective national provisions at the place of use apply by way of example, in Germany, these are the building codes of the federal states and the corresponding national specifications.



# 2.3 Application

TIGER Drylac® Series 75 is typically used for the powder coating of curtain walls and window frames on pretreated aluminium. Due to the very high weather resistance, the main application is in the field of high-quality building objects.

### 2.4 Technical Data

The powder coating TIGER Drylac® Series 75 applied with a film thickness between 50 – 65µm and cured according to our technical data sheet on a suitable pretreated aluminium part has the following characteristics (according to AAMA 2605\*):

#### Constructional data

Name	Value	Unit
Density ISO 8130-2	1300 - 1900	kg/m³
Solids content	100	%
Gloss* ASTM D523	30 - 50	GU
Dry adhesion* ASTM D3359	no removal of film	-
impact resistance* AAMA 2605, ASTM D3359	no removal of film	-
Dry film hardness* ASTM D3363	min F scratch hardness	-
Salt spray resistance* ASTM G85, Annex A5	2000h, dmax<=2m m	-
Humidity resistance* ASTM D2247	4000h, not greater than Few & No. 8	-
Outdoor weathering Florida* ASTM G7/G7M	10 years, RG >= 50%	-
Curing time	from 15	min
Curing temperature	from 180	°C
Theortical spreading rate in accordance to the layer thickness (µm) and densitiy (g/cm3)	10.5 - 15.4	m2/kg

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision (no CE-marking).

### 2.5 Delivery status

TIGER Drylac<sup>®</sup> Series 75 is supplied as milled powder. The powder coating is packed in cardboard boxes lined with PE bags (content 20 kg).

# 2.6 Base materials/Ancillary materials

This Environmental Product Declaration refers to the composition of the powder coating TIGER Drylac® Series 75.

Name	Value	Unit	
Binder (resin and hardener)	69 - 88	%	
Additives	4.75 – 5.05	%	
Pigments (colored and effect)	0.9 - 30	%	
Extender	0 - 15	%	

1) TIGER Drylac® Series 75 contains substances listed in the "Candidate list of Substances of Very High

Concern for Authorisation (SVHC)" (date: 23.09.2020) exceeding 0.1 percentage by mass: yes.

Substance	CAS	Harzardous properties	Content [%]		
epsilon- caprolactam	105- 60-2	H302-H312- H332-H315- H319-H335	0.33- 0.52		
tricobalt tetraoxide	1308- 06-1	H334-H412	0-0.37		
2-(4,6-bis(2,4-dimethylphe-nyl)-1,3,5-tria-zin-2-yl)-5-(3-((2-ethyl-hexyl)oxy)-2-hydroxypro-poxy)-phenol		H413	0-1		
aluminium powder (stabilized)	7429- 90-5	H228	0-10		
trizinc bis (orthophosphate)	7779- 90-0	H400-H410	0-1		

- 2) TIGER Drylac® Series 75 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
- 3) Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) *Ordinance on Biocide Products* No. 528/2012): no

No additives, namely fire retardants, softeners and/or biocides are intentionally added to TIGER Drylac<sup>®</sup> Series 75.

## 2.7 Manufacture

The production process of TIGER Drylac® Series 75 is the same in the three locations.

Quality management systems:

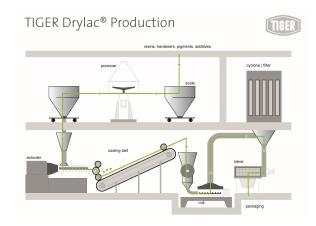
TCA: IATF 16949, ISO 9001, ISO 14001

TDU: ISO 9001, ISO 14001 TDV: ISO 9001, ISO 14001

The powder coating is produced in the following order:

- 1. Weighing the raw materials
- 2. Premixing
- 3. Extrusion (plastification and homogenization)
- 4. Cooling and crushing
- 5. Grinding and sieving
- 6. Packing and Labeling
- 7. Metallic effects require an additional bonding process





# 2.8 Environment and health during manufacturing

Through the environmental management system according to *ISO 14001*, the environmentally relevant aspects are regularly evaluated. Since powder coating does not contain solvents no volatile organic compounds (VOCs) are produced during the production process. Dust emissions are prevented by filter technology and do not enter the environment. The cleaning of the plants is carried out with minimal amount of water, solvents and chemicals. Contamination of the ground can be excluded due to the paved surfaces.

The energy consumption of the plants is recorded in a monitoring system and projects for reduction are implemented continuously. Noise-generating units (equipment, tools...) are used, if necessary, in a noise-insulating/canceling form/model or suitable sound absorbing measures are taken so that official regulated limits by i.e. Occupationhal Safety and Health Adsministration (OSHA) are met or the values are below the regulated limit.

The use of hazardous working materials is avoided as far as possible.

Waste generated during production is collected separately and disposed via a central waste collection point. Here the principle applies: avoidance, reduction, reuse, disposal in accordance with the law by demonstrably authorized companies. In the course of the environmental management system, key figures are continuously monitored and projects for waste avoidance and reduction are implemented on an ongoing basis.

# 2.9 Product processing/Installation

In its corresponding formulation, the powder coating under review can be processed on all coating systems available on the market using corona (electrostatic) charging.

Guidelines to be considered:

VDE provisions and the corresponding European standards: *EN 12981*.

During curing of TIGER Drylac® Series 75 small doses of caprolactam are released, which may cause minor smoke and odor. Provide sufficient ventilation and observe maximum allowable concentration guidelines.

The overspray can be recovered and re-used using corresponding plant technology.

# 2.10 Packaging

The powder coating under review is packed either in cardboard boxes lined with PE bags or big bags. The used materials for packaging are recyclable or thermally utilized. The various containers are transported on wooden pallets which can be re-used.

# 2.11 Condition of use

TIGER Drylac® Series 75 is typically used as coating on aluminium for facades and window frames in a cured state. The coating represents an irreversible thermosetting cross-linking of polymer chains which are insoluble in water and therefore have a constant composition during use.

Any changes in gloss and colour during the service life correspond to the tolerance ranges of American Architectural Manufacturers Association (*AAMA*) 2605. TIGER Drylac® Series 75 is tested to this quality standard.

# 2.12 Environment and health during use

If the powder coating is processed properly according to the manufacturer's instructions and taking into account the applicable safety instructions, negative effects on humans and the environment are not to be expected according to the present state of knowledge.

#### 2.13 Reference service life

If TIGER Drylac® Series 75 is processed properly and the care/maintenance of the surface - coated with the powder coating under review - is according to TIGER Coatings recommendation's, the service life of the powder coating corresponds to the service life of the building.

Any decrease in gloss, change of colour and/or effect will appear evenly over each surface side, provided the coating has been exposed to equal levels of environmental effects and of sunlight. These changes are a result of UV radiation and humidity and are within the tolerances prescribed by *AAMA 2605*.

# 2.14 Extraordinary effects

### Fire

In line with *EN 13501-1*, powder-coated construction products are "non-homogeneous construction products".

The powder coating and/or coating manufactured is defined as a "non-substantial component" of the construction product. Reaction to fire must be examined individually and classified in a fire class by the manufacturer of the manufactured product.

TIGER Drylac® Series 75 was tested by TÜV SÜD the Classification of Reaction to Fire in accordance with *EN 13501-1* (coated aluminium panels, coating thickness 65 μm (approx. 102 g/m²)). Respective test report dated 2017-10-04 shows the Reaction to fire classification: **A2-s1**, **d0**. In accordance with the above mentioned, this is to be understood as a non-binding indication.

# Fire protection

p						
Name	Value					
Building material class	A2					
Burning droplets	d0					
Smoke gas development	s1					



#### Water

Fully cured TIGER Drylac® Series 75 films are insoluble in water and therefore a hazard to water in case of e.g. flooding is not expected.

#### **Mechanical destruction**

If TIGER Drylac® Series 75 is processed properly, the adhesion to the substrate is very good so that in case of unforeseeable mechanical destruction of a coated component a negative impact to the environment is not to be expected.

#### 2.15 Re-use phase

The re-use of cured powder coatings is not possible. Cross-linked powder coatings can be chemically or thermally removed from the substrate and can then be passed on to approved facilities for thermal recycling.

#### 2.16 Disposal

TCA:

EWC (European Waste Code): 08 01 12 The EWC to be applied is to be specified by the waste producer. Possible disposal methods for powder coating waste are:

- 1. Material utilization, e.g. in composite materials
- 2. Thermal utilization in approved systems.

# TDV:

According to the *decree No.38/2015/ND-CP* on management of waste and discarded materials pursuant to the Socialist Republic of Vietnam's Law on Government organization (December 25, 2001) and the Law on Environment protection (June 23, 2014).

#### TDU:

Resource Conservation and Recovery Act (*RCRA*) Code of Federal Regulations 40CFR Part 239-259 -Solid wastes.

#### 2.17 Further information

More detailed information on TIGER Drylac<sup>®</sup> Series 75 can be found at:

Website: https://www.tiger-coatings.com

Product data sheet: TIGER PDS Series 75 | 1181 en

Product-specific technical data sheets and safety data sheets can be obtained from the manufacturer.

# 3. LCA: Calculation rules

#### 3.1 Declared Unit

The environmental product declaration refers to a declared unit of 1 kg TIGER Drylac® Series 75 with a raw density between 1,4 – 1,8 g/cm³.

# **Declared unit**

Name	Value	Unit
Declared unit	1	kg
Conversion factor to 1 kg	1	-

It represents a weighted average of the three TIGER production sites:

- TIGER Coatings GmbH u Co.KG located in Wels (Austria),
- TIGER Drylac U.S.A., Inc. located in St. Charles (USA) and
- TIGER Drylac Vietnam Co., Ltd. located in Binh Duong (Vietnam).

# 3.2 System boundary

The life cycle assessment of average TIGER Drylac<sup>®</sup> Series 75 refers to a cradle-to-gate analysis:

# Module A1-A3 | Production stage

The production stage includes the upstream burdens of raw material supply, their transport and the manufacturing at the TIGER production plants. The main inputs include the binding agents, pigments and other additives. This EPD refers to a weighted average of the three production sites in Austria, USA and Vietnam.

The end of life of the product is not part of this analysis. The product under study is physically integrated with other products during its installation and thus cannot be physically separated at end of life. As a result, the end of life of the product is determined by the coated structure (e.g. facades, metallic surfaces, etc.). When applied to metallic parts, the

product most likely is part of the metal recycling process at its end of life.

### 3.3 Estimates and assumptions

All assumptions are verified through detailed documentation and correspond to the best possible representation of reality based on the available data. Regional applicability of the used background data refers to average data under European or German conditions taken from the *GaBi* database. German data were used for the Austrian market whenever European or regionalised average data were not available.

## 3.4 Cut-off criteria

All inputs and outputs for which data are available are included in the LCA model. Data gaps are filled with conservative assumptions from average data (when available) or with generic data and are documented accordingly. Only data with a contribution of less than 1 % were cut off. Ignoring such data is justified based on the insignificance of the expected effect. Processes, materials or emissions known to have a significant contribution to the environmental effects of the products under examination have not been neglected. It is assumed that the data have been completely recorded and that the overall total of ignored input flows does not amount to more than 5 % of the total energy and mass flows.

# 3.5 Background data

Secondary data are used to depict the background system in the LCA model. These data originate from the *GaBi* 10 (2020.2) database. Where necessary, additional data were specifically modelled.

# 3.6 Data quality

Data collection is based on product-specific questionnaires. It follows an iterative process clarifying questions via e-mail, telephone calls or in personal



meetings. Intensive discussions between TIGER Coatings GmbH u Co KG and Daxner & Merl results in an accurate mapping of product-related material and energy flows. This leads to a high quality of foreground data collected. Data collection relies on a consistent process according to *ISO 14044*. The technological, geographical and time-related representativeness of the database was kept in mind when selecting background data. Whenever specific data were missing, either generic datasets or representative average data were used instead. The implemented *GaBi* background datasets refer to the latest versions available (not more than ten years old) and are carefully chosen.

# 3.7 Period under review

Foreground data were collected based on annual quantities in 2018.

## 3.8 Allocation

The representation of the upstream supply chain of precursor materials is based on the *GaBi*-database. Handling of multi-functionality situations, therefore, is

covered in the referring process documentation. For the substances modelled by Daxner & Merl, no allocation was applied.

Allocation of primary data is based on the controlling systems of the production sites The allocation of electricity input to the declared product is based on overall production quantities (tonnes) in line with the monitoring for the energy and environmental management system of the company.

The production process does not include any coproducts. Off-spec powder from the production is either stored at TIGER for internal use or incinerated in an external waste incineration plant.

### 3.9 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.

The GaBi background database (GaBi 10; 2020.2) was used to calculate the LCA.

# 4. LCA: Scenarios and additional technical information

# Production stage (A1-A3)

The analysed product contains 0,23 % of biogenic carbon equalling 0,008 kg carbon dioxide sequestered from the atmosphere per kilogram of product. As the information module in which the biogenic carbon is reemitted is not declared, no storage of biogenic carbon in the product is considered in the declared results for module A1-A3.

# Installation into the building (A5)

The End-of-Life of product packaging is not declared in module A5. The carbon content of the paper boards used as packaging material is calculated as carbon neutral in module A1-A3.

Name	Value	Unit
Packaging (polyethylene)	0,01	kg/kg
Packaging (cardboard)	0,05	kg/kg



# 5. LCA: Results

The following table contains the LCA results for a declared unit of 1 kg TIGER Drylac® Series 75.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED; MNR = MODULE NOT RELEVANT)																
PROE	OUCT S	TAGE	ON PR	TRUCTI OCESS AGE		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	А3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	C3	C4	D
X	Χ	Х	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	MND	MND	MND
RESU	LTS	OF TH	IE LC/	۱ - EN	VIRON	MENT	AL IN	IPACT	accor	ding t	o EN 1	15804+	·A1: 1	kg Dry	/lac Se	eries 75
		Pa	rameter				Unit	A1-A3								
			arming po				CO <sub>2</sub> -Eq.									
Deple				spheric oz nd and wa	one layer		SO <sub>2</sub> -Eq.									
			cation pot		шы	[kg (	PO <sub>4</sub> )3-E	Eq.] 4.30E-3								
Formation	n poten		oospheric xidants	ozone ph	otochemi	al [kg e	ethene-E	Eq.] 8.33E-3								
Abio	tic deple			on-fossil re	esources	[ko	g Sb-Eq.]		1.48E-3						_	
Ak	oiotic dep	oletion po	tential for	fossil reso	ources		[MJ]	2.81E+2 ESCRIBE RESOURCE USE according to EN 15804+A1: 1 kg								
		OF THes 75		A - IND	ICATO	RS T	O DES	CRIBI	E RES	OURC	E USE	acco	rding 1	to EN	15804-	+A1: 1 kg
Diyla	0011	03 70		meter				Unit					A1-A3			
	Ren	ewable p	orimary er	nergy as e	energy can	ier		[MJ]	Л 1.58E+1							
Re	Renewable primary energy resources as material utilization			n	[MJ]	MJ 8.90E-1										
	Total use of renewable primary energy resources				[MJ]											
	Non-renewable primary energy as energy carrier  Non-renewable primary energy as material utilization			+	[MJ]											
	Total use of non-renewable primary energy resources				[MJ]											
Use of secondary material						[kg]										
Use of renewable secondary fuels Use of non-renewable secondary fuels					[MJ]											
	Use of net fresh water						[m³]					1.39E-2				
	RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 kg Drylac Series 75															
1 Kg L	Jrylac	Serie		meter				Unit					A1-A3			

Parameter	Unit	A1-A3
Hazardous waste disposed	[kg]	7.85E-6
Non-hazardous waste disposed	[kg]	1.80E+0
Radioactive waste disposed	[kg]	3.02E-3
Components for re-use	[kg]	0.00E+0
Materials for recycling	[kg]	0.00E+0
Materials for energy recovery	[kg]	0.00E+0
Exported electrical energy	[MJ]	0.00E+0
Exported thermal energy	[MJ]	0.00E+0

# 6. LCA: Interpretation

The environmental impact of TIGER Drylac® Series 75 is dominated by the upstream supply chain of the precursor materials in the recipe (module A1) in all declared indicators.

In addition, long-distance transports of single substances (module A2) also contribute to acidification and eutrophication potential in the production phase.

The manufacturing of the powder coating itself represents a minor driver in the environmental profile

of the product (<5 %).

TIGER Drylac<sup>®</sup> Series 75 contains a low share of renewable materials with a biogenic carbon content <0,5 %. Thus, the storage of biogenic carbon in the product is not included in the results for module A1-A3.

The powder coating is physically integrated with other products during its installation and thus cannot be physically separated at end of life.



# 7. Requisite evidence

TIGER® Drylac Series 75 is used for outdoor architectural applications and as a preliminary product of curtain walls, doors and window frames on pretreated aluminium, evidence in terms of consumer protection inside buildings is not relevant for powder coating under review.

# 8. References

#### **Standards**

#### **AAMA 2605**

AAMA 2605, American Architectural Manufacturers Association. An FDIA Voluntary Specification; Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix).

#### **ASTM D523**

ASTM D523, American Society for Testing and Materials. Standard Test Method for Specular Gloss.

# **ASTM D3359**

ASTM D3359, American Society for Testing and Materials. Standard Test Methods for Rating Adhesion by Tape Test.

#### **ASTM D3363**

ASTM D3363,American Society for Testing and Materials. Standard Test Method for Film Hardness by Pencil Test.

## **ASTM G85**

ASTM G85, Annex A5, American Society for Testing and Materials. Standard Practice for Modified Salt Spray (Fog) Testing, dilute electrolyte cyclic fog dry test.

### **ASTM D2247**

ASTM D2247, American Society for Testing and Materials. Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity.

# ASTM G7/G7M

ASTM G7/G7M, American Society for Testing and Materials. Standard Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials.

# EN 12981

DIN EN 12981, Coatings Plants - Spray Booths for Application of Organic Powder Coating Material - Safety Requirements.

## EN 13501-1

EN 13501-1:2010, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests.

## EN 15804

EN 15804:2012-04+A1 2013, Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products.

#### **IATF 16949**

IATF 16949:2016, International Automotive Task Force.

#### ISO 8130-2

EN ISO 8130-2, Determination of density by gas comparison pyknometer (referee method).

#### ISO 9001

ISO 9001:2015, Quality Management System.

#### ISO 14001

ISO 14001:2015, Environment Management System.

#### ISO 14025

DIN EN ISO 14025:2011-10, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

#### ISO 14044

ISO 14044:2006-07, Environmental management - Life cycle assessment - Requirements and guidelines.

## **Further References**

### Candidate list

List of substances of very high concern (SVHC) for authorisation (ECHA Candidate List), 25.06.2020, published under Article 59(10) of REACH. Helsinki: European Chemicals Agency.

## Decree No.38/2015/ND-CP

Decree No.38/2015/ND-CP, 2015, on management of waste and discarded materials.

### **EWC**

European Waste Code (EWC), No. 08 01 12: waste paint and varnish other than those mentioned in 08 01 11, according to the current version of Commission Decision 2000/532/EC of 3 May 2000.

### GaB

GaBi 10, Software-System and Database for Life Cycle Engineering. DB v8.7 2020.2. Stuttgart, Echterdingen: thinkstep AG, 1992-2020. Available at: http://documentation.gabi-software.com.

# **IBU 2016**

Institut Bauen und Umwelt e.V.: General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V. Version 1., Berlin: Institut Bauen und Umwelt e.V., 2016. www.ibu-epd.com.

# **Ordinance on Biocide Products**

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.

# PCR part A

Product category rules for building-related products and services. Part: Calculation rules for the life cycle assessment and requirements on the project report, Version 1.8. Berlin: Institut Bauen und Umwelt e.V. (Hrsg.), 2019.

# PCR: Coatings with organic binders

Product category rules for building-related products and services. Teil B: Requirements on the EPD for Coatings with organic binders, Version 1.7. Berlin: Institut Bauen und Umwelt e.V. (Hrsg.), 04.01.2019.

# **RCRA**

Resource Conservation and Recovery Act (RCRA) Code of Federal Regulations 40CFR Part 239-259 – Solid wastes.



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