Base Load Power Hub (BLPH)

PAINTING PROCEDURE

Document Number: 1724000372-MAT-PRO-00015

Document Class: 2

03	07/10/2024	Accepted for Construction (AFC)	DA	DA	AD
02	06/07/2024	Accepted for Construction (AFC)	DA	DA	AD
01	01/06/2024	Issue for Review (IFR)	DA	DA	AD
00	04/04/2024	Issue for Review (IFR)	DA	DA	AD
Rev.	Date	Description	Prepared	Reviewed	Approved

3W power | a company of AEG POWER SOLUTIONS

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)
02	Accepted for Construction (AFC)
03	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Table of contents

Description — Sheet

COVER 1

REVISION / CHANGE LOG 2

HOLDS LIST 2

TABLE OF CONTENTS 3

PAINTING SPECIFICATION AND PROCEDURE 4

5815 - TECHNICAL AND SAFETY DATASHEET 11

5903 - TECHNICAL AND SAFETY DATASHEET 25

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Base Load Power Hub (BLPH)

AC UPS PAS - TAG: UP-200F3

AC UPS F&G - TAG: UP-200F4

DC UPS - TAG: UP-200F1

PAINTING SPECIFICATION AND PROCEDURE

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

AEG

POWER
SOLUTIONS

Painting Specification and Procedure

Double layer Surface Coating

AEG Power Solutions GmbH, Warstein-Belecke
Department: **PS AE**
Revision: **02**
Editor: **06.09.2021 / Schrewe**
Release: **06.09.2021 / Röthig-Ewald**

Document No. **8000068155 BAL, en**



EN

Revision

Status	Change	Date	Name
00	Created CN30011589	28.03.2019	Schenuit
01	CN30013288	22.07.2021	Schrewe
02	CN30013367	06.09.2021	Röthig-Ewald

AEG Power Solutions GmbH
Emil-Siepmann-Straße 32
59581 Warstein
Germany

☎ +49 2902 763 100
Fax: +49 2902 763 645

E-Mail: service.de@aegps.com
Internet: http://www.aegps.com

© Copyright 2021 AEG Power Solutions GmbH, Warstein-Belecke, Germany. All rights reserved.

This document must not be reproduced, either in whole or in part, without the express permission of AEG Power Solutions GmbH.

AEG is a registered trademark used under license from AB Electrolux.

INHALTSVERZEICHNIS

1. COLOR STRUCTURE 4
1.1 Pre-treatment 4
1.2 Varnish Zinc Primer 4
1.3 Varnish coat (Coarse Texture Powder –Polyester) 4
2. SPECIFICATION 5
2.1 Properties of the coating 5
3 TESTS FOR SHEET METAL 6
4. REPAIR OF PAINT DAMAGE 6

1. COLOR STRUCTURE

1.1 Pre-treatment

- degreasing
- iron phosphating
- rinse
- drying

1.2 Varnish Zinc Primer

Processing and Oven Temperature	**According to technical data sheet of manufacturer**
Type:	**Brillux EP 5815**
Nominal dry film thickness (NDFT)**	**70 µm**

**NDFT = nominal dry film thickness

1.3 Varnish coat (Coarse Texture Powder –Polyester)

Processing and Oven Temperature	**According to technical data sheet of manufacturer**
Colour	**Defined by customer order**
Cover varnish - nominal dry film thickness (NDFT)**	**80 µm**
Total - nominal dry film thickness (NDFT)**	**150 µm**
• Surfaces (doors, walls etc.) *DFT	150 µm (+150 µm / -30 µm) 120 µm … 300 µm
• At edges and outside corners *DFT	120 µm … 450 µm

*DFT = dry film thickness

**NDFT = nominal dry film thickness

2. SPECIFICATION

2.1 Properties of the coating

General characteristics

- Overcoat ability (wet on powder) possible

Mechanical characteristics

- Gross hatch Gt 0 C according to DIN EN ISO 2409
- Erichsen cupping test ≥3 mm according to DIN EN ISO 1520

Chemical characteristics

- H_2O-storage ok.
- H_2SO_4-storage ok.
- Solvent resistance moderate

Varnish coat incl. Zinc Primer

• Corrosivity category acc. to DIN 55633-1:2021	C1, C2	C3	C4	C5
• Protection duration range acc. to DIN 55633-1:2021	VH > 25Y	H 15-25Y	M 7-15Y	L 7Y

3 TESTS FOR SHEET METAL

(AEG PS proposals for process monitoring)

Inspection of the varnish quality

- Sheet metal approx. 100 mm x 70 mm x 1 mm
- Layer thickness min. 120 – 300 µm

Grid test according to DIN EN ISO 2409

- Test results: Gt 0
- Test frequency: 1 x a day

Depth test according to DIN EN ISO 1520

- Test results: Coating may not show chippings
- Test frequency: 1 x a day

The supplier can carry out equivalent tests to ensure process safety.

4. REPAIR OF PAINT DAMAGE

A standard acrylic paint spray can be used to repair minor defects on powder-coated parts.

If necessary, follow the manufacturer’s instructions.

Repair with a paint roller or brush is also possible.

Base Load Power Hub (BLPH)

AC UPS PAS - TAG: UP-200F3

AC UPS F&G - TAG: UP-200F4

DC UPS - TAG: UP-200F1

5815 - TECHNICAL AND SAFETY DATASHEET

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Technical Data Sheet

Zinc Priming Powder EP 5815



Zinc epoxy primer for ultimate corrosion protection for use on sand-blasted steel and passivated aluminum

Field of application

In combination with weather-resistant powder coating systems for all areas where long-term corrosion protection with immaculate aesthetics is required, e.g., structural sections/elements, construction and agricultural machinery, vehicle components, steel cylinders, etc. Single layers are not suitable for exterior use.

Properties

- excellent corrosion protection properties
- very good protective effect against filiform corrosion on suitably passivated aluminum
- high chemical resistance
- very good mechanical values
- after pre-treatment suitable for sand-blasted steel as well as passivated aluminium
- once fully cured, the paint film is physiologically safe

Approvals/permits

Test certificate in accordance with DIN EN ISO 129446 part 6, corrosivity category C5 high; tested in two-layer build-up with Brillux Universal Polyester Powder 5940 or 5910 (Institut für Korrosionsschutz Dresden GmbH).

Technical Data

Basis	Epoxy resin
Color	Dark gray
Degree of gloss	Glossy
Density	2.64 to 2.70 g/cm³ (in accordance with DIN ISO 8130-2)
Theoretical coverage	approx. 370 m²/kg (with 1 µm dry film thickness)
Grain distribution	< 28 % < 10 µm 54 % < 32 µm > 94 % < 90 µm (laser measuring)

Technical Data

Cross-hatch test	Gt 0 C (in accordance with DIN EN ISO 2409)
Erichsen cupping	≥ 6 mm (in accordance with DIN EN ISO 1520)
Buchholz hardness	≥ 90 (in accordance with DIN EN ISO 2815)
Pencil hardness	2 H (Wolff Wilborn type 291)
Salt spray test	Corrosion at the scribe ≤ 1 mm (in accordance with DIN EN ISO 4628-8), on SA $2^1/_2$ sand-blasted steel[1)] > 1.440 h (in accordance with DIN EN ISO 9227-NSS)
Condensation water test	Degree of blistering 0 (S0) (in accordance with DIN EN ISO 4628-2) on SA $2^1/_2$ sand-blasted steel[1)] > 1.000 h (in accordance with DIN EN ISO 6270-2)
Impact test	reverse: ≥ 60 ip direct: ≥ 60 ip (in accordance with ASTM D 2794-69)
Labeling	See current safety data sheet.

[1)] In conjunction with a suitable top coat

Coating suggestion

Substrates[2)]	**Prime coat[3)]**	**Top coat[4)]**
Steel Sand-blasted (degree of cleanliness min. SA 2 ½ in accordance with DIN EN ISO 12944, part 4) **Aluminium** Suitably passivated	Zinc Primer Powder EP 5815 (Dark gray) 60-80 µm	Industrial Polyester Powder 5900, 5901, 5902 approx. 60 µm
		Industrial Polyester Powder 5903, 5905 approx. 80 µm
		Industrial Polyester Powder 5904. approx. 60 µm
		Universal Polyester Powder 5940, 5941, 5910, 5911 approx. 60 µm

[2)] Generally, the substrate shall be free from grease, oil, separating and drawing agents as well as corrosion products and other impurities and pretreated according to the corrosion protection requirements.

[3)] When using a directly heated gas oven, the intercoat adhesion on the top coat can be reduced due to pressurized combustion products. The adhesion must therefore be tested in a representative pretest.

[4)] depending on color

Process

Compatibility	Different batches or powder coat qualities cannot always be mixed/ are not always compatible to one another. Surface defects such as gloss reduction, specks, crater, orange peel effect, etc., may result from incompatibility. To be sure, appropriate tests shall be carried out before application.
Application temperature	15 to 25 °C
Humidity	< 75 % relative humidity

Application

Generally, make sure the substrate is grounded properly. The fluidizing, conveying and dosing air must be free from oil and condensation water. In order to obtain a uniform coating quality, a constant fresh/ recovered powder ratio should be maintained. The recovery powder portion in the circulation system should normally be less than 35 %.

Corona application

Using appropriate coating programs depending on the parts' geometry and application situation (if applicable, using the current flow restriction). For application systems without current flow restriction:
Voltage:
70 to 100 kV (for the first coating)
40 to 50 kV (for overcoating)

Tribo application

possible

Curing conditions

Curing of the prime coating before application of the final coating:

Duration	Object temperature
15 to 30 min.	at 170 °C
10 to 20 min.	at 180 °C
7 to 12 min.	at 200 °C

Alternatively, complete curing can take place after application of the final coating, if the primer was gelated beforehand (110–130 °C object temperature, with a holding time of 8–10 min.). The curing must then be carried out in accordance with the specifications for the top coat, but at least applied in accordance with the stoving conditions of the primer.

Container sizes

20 kg, 500 kg (25 polyethylene bags of 20 kg each)
Further container sizes available on request.

Shelf life

6 months after receipt.
Store in a sealed container in a dry place and at room temperature (at most 25 °C). Protect from heat sources and direct sunlight.

Minimum shelf life

Refer to label

Remark

This Technical Data Sheet is based on intense development work and many years of practical experience. The contents do not constitute any contractual relationship. The user/buyer is not released from his/her obligation to test our products for suitability for the intended application. In addition, our General Terms and Conditions shall apply.

As soon as a new edition of this Technical Data Sheet is issued, the previous specifications become invalid. If you need the current version, please contact your Brillux consultant, Version 8.

Brillux GmbH & Co. KG Industrielack
Otto-Hahn-Straße 14
59423 Unna
Tel. +49 2303 8805-0
Fax +49 2303 8805-119
info@brillux-industrielack.de
www.brillux-industrielack.de

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Zink-Grundierpulver EP 5815, Dunkelgrau (5815.-.7100)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Powder coating. Intended purpose see technical data sheet.

Relevant identified uses

Products Category [PC]

Coatings and paints, thinners, paint removers

Remark

The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

Brillux GmbH & Co. KG, Industrielack
www.brillux-industrielack.de

Street : Otto-Hahn-Straße 14

Postal code/city : D-59423 Unna

Telephone : +49 2303 8805-0

Telefax : +49 2303 8805-119

Information contact : E-mail address of the competent person for safety data sheets: sdb@brillux-industrielack.de

1.4 Emergency telephone number

Giftinformationszentrum-Nord (poisons centre), consultation in german and english
Telephone: +49 551 19 24 0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Eye Irrit. 2 ; H319 - Serious eye damage/eye irritation : Category 2 ; Causes serious eye irritation.

Skin Sens. 1 ; H317 - Skin sensitisation : Category 1 ; May cause an allergic skin reaction.

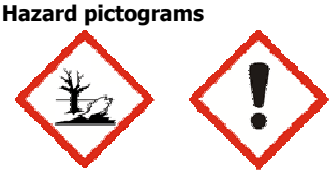
Aquatic Acute 1 ; H400 - Hazardous to the aquatic environment : Acute 1 ; Very toxic to aquatic life.

Aquatic Chronic 1 ; H410 - Hazardous to the aquatic environment : Chronic 1 ; Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



Environment (GHS09) · Exclamation mark (GHS07)

Signal word

Warning

Hazard components for labelling

1-o-tolylbiguanide ; CAS No. : 93-69-6

Hazard statements

H317 May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

ZINC POWDER - ZINC DUST (STABILIZED) ; REACH No. : 01-2119467174-37 ; EC No. : 231-175-3; CAS No. : 7440-66-6

Weight fraction : ≥ 60 - < 65 %

Classification 1272/2008 [CLP] : Aquatic Acute 1 ; H400 Aquatic Chronic 1 ; H410

Aluminium dihydrogen triphosphate ; REACH No. : 01-2119970565-28 ; EC No. : 237-714-9; CAS No. : 13939-25-8

Weight fraction : ≥ 1 - < 5 %

Classification 1272/2008 [CLP] : Eye Irrit. 2 ; H319

1-o-tolylbiguanide ; REACH No. : 01-2119976311-39 ; EC No. : 202-268-6; CAS No. : 93-69-6

Weight fraction : ≥ 1 - < 3 %

Classification 1272/2008 [CLP] : Eye Dam. 1 ; H318 Skin Sens. 1 ; H317 Aquatic Chronic 3 ; H412

Additional information

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Change contaminated, saturated clothing. If unconscious place in recovery position and seek medical advice.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

In case of skin contact

Wash immediately with: Water and soap Do not wash with: Solvents/Thinner

After eye contact

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

Induce vomiting if patient is conscious, seek medical advice. Rinse out mouth and give plenty of water to drink. Administer activated charcoal. No direct artificial respiration to be given by first aider.

4.2 Most important symptoms and effects, both acute and delayed

Fever; Nausea; Vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguishing powder, alcohol resistant foam, carbon dioxide (CO_2), water spray. The fire fighting for manuell and self-acting powder coating systems conformable BGI 764 the extingshent agent CO_2 can be used by movable tool and fight fire extingquishing system. For using other extingshent agent than CO_2 the effectiveness must be proved.

Unsuitable extinguishing media

Full water jet, inert gas with high pressure.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO_2) and pyrolysis products, toxic. Nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO_2), zinc oxide fume and pyrolysis products, toxic.

5.3 Advice for firefighters

Special protective equipment for firefighters

Use suitable breathing apparatus.

5.4 Additional information

Burning produces heavy smoke. Use water spray jet to protect personnel and to cool endangered containers. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. See protective measures under point 7 and 8. Avoid dust formation. Do not inhale product dusts.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For cleaning up

Contain and collect spillage with a vacuum cleaner (conducting type) and place in container for disposal according to local regulations. (See section 13). Use approved industrial vacuum cleaner for removal. Treat the recovered material as prescribed in the section on waste disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Avoid: Generation/formation of dust, dust deposits, inhalation of dust/particles. Only use the material in places where open light, fire and other flammable sources can be kept away. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Measures to prevent fire

Dust can form an explosive mixture with air. Take precautionary measures against static discharges. Wear anti-static footwear and clothing Use only antistatically equipped (spark-free) tools.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Floors should be impervious and easy to clean.

Hints on joint storage

Storage class (TRGS 510) : 11

Do not store together with

Strong acid, strong alkali, oxidising agent, food and feedingstuffs.

Further information on storage conditions

Do not store at temperatures above : 25 °C

Protect against : Humidity.

7.3 Specific end use(s)

Powder coating. Intended purpose see technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

GENERAL LIMIT VALUE FOR DUST

Limit value type (country of origin) :	TRGS 900 (D)
Parameter :	A: respirable fraction
Limit value :	1,25 mg/m^3
Peak limitation :	2(II)
Version :	29.03.2019
Limit value type (country of origin) :	TRGS 900 (D)
Parameter :	E: inhalable fraction
Limit value :	10 mg/m^3
Peak limitation :	2(II)
Version :	29.03.2019

DNEL-/PNEC-values

PNEC

ZINC POWDER - ZINC DUST (STABILIZED) ; CAS No. : 7440-66-6

Limit value type :	PNEC (Aquatic, freshwater)
Exposure route :	Water (Including sewage plant)
Limit value :	0,0206 mg/l
Limit value type :	PNEC (Aquatic, marine water)
Exposure route :	Water (Including sewage plant)
Limit value :	0,0061 mg/l
Limit value type :	PNEC (Sediment, freshwater)
Exposure route :	Soil
Limit value :	117,8 mg/kg
Limit value type :	PNEC (Sediment, marine water)
Exposure route :	Soil
Limit value :	56,5 mg/kg
Limit value type :	PNEC soil
Exposure route :	Soil
Limit value :	35,6 mg/kg
Limit value type :	PNEC (Sewage treatment plant)
Exposure route :	Water (Including sewage plant)
Limit value :	0,052 mg/l

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Suitable eye protection

Dust protection eye glasses

Remark

Note DGUV-Rule 112-192.

Skin protection

Hand protection

Suitable gloves type : Disposable gloves. Gloves with long cuffs

Required properties : dust-tight. antistatic.

Remark : After washing hands replace lost skin fat by fat containing skin creams. Note DGUV-Rule 112-195. Note TRGS 401.

Body protection

Personel should wear protective clothings and all parts of the body should be washed after contact. Care should be taken in the selection of protective clothing to ensure that inflammation and irritation of the skin at neck and wrists through contact with the powder is avoided.

Recommended material : Natural fibres (e.g. cotton), heat-resistant synthetic fibres.

Remark : Note DGUV-Rule 112-189. Note TRGS 401.

Respiratory protection

Respiratory protection necessary at: insufficient exhaust

Suitable respiratory protection apparatus

Use breathing filter P2 (particle).
European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

Remark

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Note TRGS 402.

General information

Used working clothes should not be worn outside the work area.

Other protection measures

Technical measures and the application of suitable work processes have priority over personal protection equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Powder (1-150 µm)

Colour : According to product identification.

Odour

Poor, characteristic.

Safety characteristics

Melting point/freezing point :		>	50	°C
Initial boiling point and boiling range :	(1013 hPa)		not applicable	
Decomposition temperature :		>	250	°C
Flash point :			not applicable	
Auto-ignition temperature :		>	450	°C
Lower explosion limit :		approx.	50 - 70	g/m³
Upper explosion limit :			No data available	
Vapour pressure :	(50 °C)		not applicable	
Density :	(20 °C)		2,6 - 2,8	g/cm³
Water solubility :	(20 °C)		practically insoluble	
pH :			No data available	
log P O/W :			not relevant	
Cinematic viscosity :	(40 °C)		not applicable	
Solid content :			100	Wt %
Odour threshold :			not relevant	
Relative vapour density :	(20 °C)		not applicable	

Vapourisation rate :	not applicable
Flammable solids :	Not highly flammable.
Oxidising solids :	Not oxidising.

9.2 Other information

The physical specifications are approximate values and refer to the used safety relevant component(s).

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (see section 7).

10.3 Possibility of hazardous reactions

Reacts with water.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

Exothermic reaction with: Alkali (lye). Acid Oxidizing agent. Water.

10.6 Hazardous decomposition products

After contact with water: Hydrogen

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Parameter :	ATEmix calculated
Exposure route :	Oral
Effective dose :	not relevant
Parameter :	LD50 (ZINC POWDER - ZINC DUST (STABILIZED) ; CAS No. : 7440-66-6)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg
Parameter :	LD50 (Aluminium dihydrogen triphosphate ; CAS No. : 13939-25-8)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg
Parameter :	LD50 (1-o-tolylbiguanide ; CAS No. : 93-69-6)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg

Acute dermal toxicity

Parameter :	ATEmix calculated
Exposure route :	Dermal
Effective dose :	not relevant

Acute inhalation toxicity

Parameter :	ATEmix calculated
Exposure route :	Inhalation (dust/mist)
Effective dose :	not relevant
Parameter :	LC50 (ZINC POWDER - ZINC DUST (STABILIZED) ; CAS No. : 7440-66-6)
Exposure route :	Inhalation
Species :	Rat

Effective dose : 5,41 mg/l
Exposure time : 4 h

Practical experience/human evidence

Inhalation of zinc oxide fumes can cause fever, muscle pains, shivering and nausea. In general these troubles last only 24 hours without any after-effect (zinc fever).

11.3 Symptoms related to the physical, chemical and toxicological characteristics

In case of skin contact

Powder coatings can cause localised skin irritation in folds of the skin or in contact with tight clothing.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter : LC50 (1-o-tolylbiguanide ; CAS No. : 93-69-6)
Species : Oncorhynchus mykiss (Rainbow trout)
Effective dose : 150 mg/l
Exposure time : 96 h
Method : OECD 203

Acute (short-term) toxicity to crustacea

Parameter : EC50 (1-o-tolylbiguanide ; CAS No. : 93-69-6)
Species : Daphnia magna (Big water flea)
Effective dose : 15 mg/l
Exposure time : 48 h
Method : OECD 202

Acute (short-term) toxicity to aquatic algae and cyanobacteria

Parameter : EC50 (1-o-tolylbiguanide ; CAS No. : 93-69-6)
Species : Desmodesmus subspicatus
Effective dose : 26 mg/l
Exposure time : 72 h
Method : OECD 201

Toxicity to microorganisms

Parameter : EL50 (Aluminium dihydrogen triphosphate ; CAS No. : 13939-25-8)
Species : Mysidopsis bahia
Effective dose : 0,1 mg/l
Exposure time : 4 h

12.2 Persistence and degradability

Abiotic degradation

Mechanical separation in a suitable sewage plant is possible.

Biodegradation

In accordance with the required stability the product is poorly biodegradable.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Other adverse effects

No information available.

12.7 Additional ecotoxicological information

Additional information

Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Dispose of waste according to applicable legislation.

Directive 2008/98/EC (Waste Framework Directive)

Before intended use

Waste codes/waste designations according to EWC/AVV

08 02 01 (Waste coating powders)

Other disposal recommendations

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

13.2 Additional information

Note sections 7 and 8.

SECTION 14: Transport information

14.1 UN number

UN 3077

14.2 UN proper shipping name

Land transport (ADR/RID)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC POWDER)

Sea transport (IMDG)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC POWDER)

Air transport (ICAO-TI / IATA-DGR)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC POWDER)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) :	9
Classification code :	M7
Hazard identification number (Kemler No.) :	90
Tunnel restriction code :	-
Special provisions :	LQ 5 kg · E 1 · ADR : - (SP 375 <= 5 l/kg)
Hazard label(s) :	9 / N

Sea transport (IMDG)

Class(es) :	9
EmS-No. :	F-A / S-F
Special provisions :	LQ 5 kg · E 1 · IMDG : - (SP 2.10.2.7 <= 5 l/kg)
Hazard label(s) :	9 / N

Air transport (ICAO-TI / IATA-DGR)

Class(es) :	9
Special provisions :	E 1 · IATA : - (SP A197 <= 5 l/kg)
Hazard label(s) :	9 / N

14.4 Packing group

III

14.5 Environmental hazards

Land transport (ADR/RID) : Yes

Sea transport (IMDG) : Yes (P)

Air transport (ICAO-TI / IATA-DGR) : Yes

14.6 Special precautions for user

None

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Authorisations and/or restrictions on use

Restrictions of occupation

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National regulations

Water hazard class (WGK)

Classification according to AwSV - Class : 2 (Obviously hazardous to water)

Other regulations, restrictions and prohibition regulations

Note TRGS 001. Note TRGS 400.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

15. Restrictions on use

16.2 Abbreviations and acronyms

AwSV: Ordinance on plants for the handling of substances hazardous to water. BGR(I): Rule (Information) from the german employers liability insurance association. DGUV: German Statutory Accident Insurance. EWC: European Waste Catalogue. TRGS: German Technical Rule for Hazardous Substances. VCI: German chemical industry association.

16.3 Key literature references and sources for data

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Calculation method.

16.5 Relevant H- and EUH-phrases (Number and full text)

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.6 Training advice

None

16.7 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Base Load Power Hub (BLPH)

AC UPS PAS - TAG: UP-200F3

AC UPS F&G - TAG: UP-200F4

DC UPS - TAG: UP-200F1

5903 - TECHNICAL AND SAFETY DATASHEET

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Technical Data Sheet

Industrial Polyester Powder 5903

Coarse-texture coating powder for both interior and exterior use, silk-gloss to gloss



Field of application

Interior and exterior coatings meeting the highest qualitative and optical demands, e.g. construction machines, fence systems, fire-proof doors, fire extinguishers, garden furniture, sound insulation walls, hospital beds, lamps, cash boxes, safes, vending machines etc.

Properties

- good weather resistance
- high gloss and color stability
- good corrosion protection
- high degree of surface hardness
- good to very good mechanical values
- covers uneven areas and substrate defects
- very good adhesion on all common metallic substrates
- after corresponding pre-treatment suitable for all common metal substrate as well as partly glass
- once fully cured the paint film is physiologically safe

Technical Data

Basis	Polyester resin
Color	All common color systems
Degree of gloss	Silk gloss to gloss
Density	1.30 to 1.85 g/cm³ [1)] (in accordance with DIN ISO 8130-2)
Theoretical coverage	approx. 635 m²/kg [1)] (with 1 µm dry film thickness)
Grain distribution	< 11 % < 10 µm 35 to 50 % < 32 µm > 85 % < 90 µm (laser measuring)
Cross-hatch test	Gt 0 (in accordance with DIN EN ISO 2409)
Erichsen cupping	≥ 3 mm (in accordance with DIN EN ISO 1520)

[1)] depending on color

Brillux Industrielack

Technical Data

Salt spray test	Delamination at the scribe ≤ 2 mm (in accordance with DIN EN ISO 4628-8), On zinc-phosphated steel > 1.000 h (in accordance with DIN EN ISO 9227-NSS)
Condensation water test	Degree of blistering 0 (S0) (in accordance with DIN EN ISO 4628-2) On zinc-phosphated steel > 1.000 h (in accordance with DIN EN ISO 6270-2)
Accelerated weathering QUV-B/SE	after 200 h: residual gloss ≥ 50 % of initial gloss (according to DIN EN ISO 16474-3)[2)]
Impact test	reverse: ≥ 10 ip direct: ≥ 20 ip (in accordance with ASTM D 2794-69)
Labeling	See current safety data sheet.

[2)] The measured degree of gloss of structure powder paint depends on texturing. Therefore a visual assessment is necessary.

Coating suggestion

Substrates[3)]	**Prime coat**	**Top coat[4)]**
Aluminium preferably yellow- or green-chromated (according to DIN EN 12487) or chromium-free no-rinse pretreatment **Steel** preferably iron or zinc-phosphated **Cast iron** **Galvanized steel** **etc.**	Corro Protect EP 5816 (light-gray) 60 to 80 µm	Industrial Polyester Powder 5903 70 to 100 µm [5)]

[3)] Generally, the substrate shall be free from grease, oil, separating and drawing agents as well as corrosion products and other impurities (that especially applies to the use of directly fired gasovens) and pretreated according to the corrosion protection requirements.

[4)] Or single layer, provided that substrate has been pre-treated accordingly.

[5)] Depending on color

Process

Compatibility	Different batches or powder coat qualities cannot always be mixed/ are not always compatible to one another. Surface defects such as gloss reduction, specks, crater, orange peel effect etc. may result from incompatibility. To be sure, appropriate tests shall be carried out before application.
Application temperature	15 to 25 °C
Humidity	< 75 % relative humidity

Application

Generally, make sure the substrate is grounded properly. The fluidizing, conveying and dosing air must be free from oil and condensation water. In order to obtain a uniform coating quality, a constant fresh/ recovered powder ratio should be maintained. The recovery powder portion in the circulation system should normally be less than 35 %. Please note our Technical Information “Textured coating powders – Important information on use of textured coating powders”. When processing metallic powder coats, special processing instructions must be followed. Also refer to "Processing Instructions for Brillux Metallic - Powder Coats".

Corona application

Using appropriate coating programs depending on the parts' geometry and application situation (if applicable, using the current flow restriction).
For application systems without current flow restriction:
Voltage:
70 to 100 KV (for the first coating)
40 to 50 KV (for overcoating)

Tribo application

possible

Curing conditions

Duration	Object temperature
15 to 35 min.	at 170 °C
10 to 25 min.	at 180 °C
8 to 20 min.	at 190 °C
5 to 15 min.	at 200 °C

Container sizes

20 kg, 500 kg (25 polyethylene bags of 20 kg each)
Further container sizes available on request.

Shelf life

24 months for solid colors, 12 month for clearcoat, glazes and effect colors after receipt of the goods in the original sealed container.
Store in a sealed container in a dry place and at room temperature (at most 25 °C). Protect from heat sources and direct sunlight. Always keep the containers tightly sealed.

Minimum shelf life

Refer to label

Remark

This Technical Data Sheet is based on intense development work and many years of practical experience. The contents do not constitute any contractual relationship. The user/buyer is not released from his/her obligation to test our products for suitability for the intended application. In addition, our General Terms and Conditions shall apply.
As soon as a new edition of this Technical Data Sheet is issued, the previous specifications become invalid. If you need the current version, please contact your Brillux consultant, Version 7.

Brillux GmbH & Co. KG Industrielack
Otto-Hahn-Straße 14
59423 Unna
Tel. +49 2303 8805-0
Fax +49 2303 8805-119
info@brillux-industrielack.de
www.brillux-industrielack.de

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Industrie-Polyesterpulver 5903,
pigmentiert (SORTE 5903 FARBIG)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Powder coating. Intended purpose see technical data sheet.

Relevant identified uses

Product Categories [PC]

PC9 - Coatings and paints, fillers, putties, thinners

Remark

The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

Brillux GmbH & Co. KG, Industrielack
www.brillux-industrielack.de

Street : Otto-Hahn-Straße 14

Postal code/city : D-59423 Unna

Telephone : +49 2303 8805-0

Telefax : +49 2303 8805-119

Information contact : E-mail address of the competent person for safety data sheets: sdb@brillux-industrielack.de

1.4 Emergency telephone number

Giftinformationszentrum-Nord (poisons centre), consultation in german and english
Telephone: +49 551 19 24 0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Aquatic Chronic 3 ; H412 - Hazardous to the aquatic environment : Chronic 3 ; Harmful to aquatic life with long lasting effects.

Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



Corrosion (GHS05)

Signal word

Danger

Hazard components for labelling

Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate

Hazard statements

H318 Causes serious eye damage.

H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P310	Immediately call a POISON CENTER or a doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Special rules for supplemental label elements for certain mixtures

EUH205	Contains epoxy constituents. May produce an allergic reaction.
EUH208	Contains Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate.May produce an allergic reaction.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate ; REACH registration No. : 01-2120065788-39 ; EC No. : 940-592-6

Weight fraction :	≥ 3 - < 5 %
Classification 1272/2008 [CLP] :	STOT RE 2 ; H373 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Skin Irrit. 2 ; H315 Skin Sens. 1 ; H317 Aquatic Chronic 2 ; H411

Additional information

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Change contaminated, saturated clothing. If unconscious place in recovery position and seek medical advice.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

In case of skin contact

Wash immediately with: Water and soap Do not wash with: Solvents/Thinner

After eye contact

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting. No direct artificial respiration to be given by first aider.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguishing powder, alcohol resistant foam, carbon dioxide (CO_2), water spray. The fire fighting for manuell and self-acting powder coating systems conformable BGI 764 the extingshent agent CO_2 can be used by movable tool and fight fire extingquishing system. For using other extingshent agent than CO_2 the effectiveness must be proved.

Unsuitable extinguishing media

Full water jet, inert gas with high pressure.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO_2) and pyrolysis products, toxic.

5.3 Advice for firefighters

Special protective equipment for firefighters

Use suitable breathing apparatus.

5.4 Additional information

Burning produces heavy smoke. Use water spray jet to protect personnel and to cool endangered containers. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. See protective measures under point 7 and 8. Avoid dust formation. Do not inhale product dusts.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For cleaning up

Take up dust-free and set down dust-free. Use approved industrial vacuum cleaner for removal. (Vacuum cleaner construction B1, appropriate to suck up combustible dust). Treat the recovered material as prescribed in the section on waste disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Avoid: Generation/formation of dust, dust deposits, inhalation of dust/particles. Only use the material in places where open light, fire and other flammable sources can be kept away. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Measures to prevent fire

Dust can form an explosive mixture with air. Take precautionary measures against static discharges. Wear anti-static footwear and clothing Use only antistatically equipped (spark-free) tools.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Floors should be impervious, resistant to liquids and easy to clean.

Hints on joint storage

Storage class (TRGS 510) : 11

Do not store together with
Strong acid, strong alkali, oxidising agent, food and feedingstuffs.

Further information on storage conditions

Do not store at temperatures above : 25 °C
Protect against : Humidity.

7.3 Specific end use(s)

Powder coating. Intended purpose see technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

GENERAL LIMIT VALUE FOR DUST

Limit value type (country of origin) :	TRGS 900 (D)
Parameter :	A: respirable fraction
Limit value :	1,25 mg/m^3
Peak limitation :	2(II)
Version :	17.10.2017
Limit value type (country of origin) :	TRGS 900 (D)
Parameter :	E: inhalable fraction
Limit value :	10 mg/m^3
Peak limitation :	2(II)
Version :	17.10.2017

DNEL/DMEL and PNEC values

DNEL/DMEL

Limit value type :	DNEL/DMEL (Industrial) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	0,25 mg/kg
Limit value type :	DNEL/DMEL (Industrial) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	0,88 mg/m^3

PNEC

Limit value type :	PNEC (Aquatic, freshwater) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Limit value :	0,00272 mg/l
Limit value type :	PNEC Intermittierende Einleitung (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Limit value :	0,0272 mg/l
Limit value type :	PNEC (Soil) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Limit value :	0,00721 mg/kg
Limit value type :	PNEC (Sewage treatment plant) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Limit value :	32 mg/l

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Suitable eye protection
Dust protection eye glasses

Remark
Note DGUV-Rule 112-192.

Skin protection

Hand protection

Suitable gloves type : Disposable gloves. Gloves with long cuffs

Required properties : dust-tight.

Remark : After washing hands replace lost skin fat by fat containing skin creams. Note DGUV-Rule 112-195. Note TRGS 401.

Body protection

Personel should wear protective clothings and all parts of the body should be washed after contact. Care should be taken in the selection of protective clothing to ensure that inflammation and irritation of the skin at neck and wrists through contact with the powder is avoided.

Recommended material : Natural fibres (e.g. cotton), heat-resistant synthetic fibres.

Remark : Note DGUV-Rule 112-189. Note TRGS 401.

Respiratory protection

Respiratory protection necessary at: insufficient exhaust

Suitable respiratory protection apparatus

Use breathing filter P2 (particle).
European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

Remark

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Note TRGS 402.

General health and safety measures

Used working clothes should not be worn outside the work area.

Occupational exposure controls

Technical measures to prevent exposure

Technical measures and the application of suitable work processes have priority over personal protection equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Powder (1-150 µm)

Colour : According to product identification.

Odour

Poor, characteristic.

Safety relevant basis data

Melting point/melting range :		>	50	°C
Initial boiling point and boiling range :	(1013 hPa)		not applicable	
Decomposition temperature :			No data available	
Flash point :			not applicable	
Ignition temperature :		>	450	°C
Lower explosion limit :		approx.	50 - 70	g/m³
Upper explosion limit :			No data available	
Vapour pressure :	(50 °C)		not applicable	
Density :	(23 °C)		1,2 - 1,9	g/cm³
Water solubility :	(20 °C)		insoluble	
pH :			No data available	
log P O/W :			not relevant	
Viscosity :	(23 °C)		not applicable	

Cinematic viscosity :	(40 °C)	not applicable	
Solid content :		100	Wt %
Odour threshold :		not relevant	
Relative vapour density :	(20 °C)	not applicable	
Vapourisation rate :		not applicable	
Flammable solids :	Not highly flammable.		
Oxidising solids :	Not oxidising.		

9.2 Other information

The physical specifications are approximate values and refer to the used safety relevant component(s).

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (see section 7).

10.3 Possibility of hazardous reactions

No information available.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

Does not decompose when used for intended uses.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity

Parameter :	ATEmix calculated
Exposure route :	Oral
Effective dose :	11364 mg/kg
Parameter :	LD50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Oral
Species :	Rat
Effective dose :	300 - 2000 mg/kg

Acute dermal toxicity

Parameter :	ATEmix calculated
Exposure route :	Dermal
Effective dose :	not relevant
Parameter :	LD50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Dermal
Species :	Rat
Effective dose :	> 2000 mg/kg

Acute inhalation toxicity

Parameter :	ATEmix calculated
Exposure route :	Inhalative (dust, mist)
Effective dose :	not relevant

Sensitisation

According to information given by the manufacturer the ingredient "Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate" are not sensitising in a concentration of less than 5.5 %.

In case of skin contact

Practical experience/human evidence

Once sensitized on epoxy constituents, a severe allergic reaction may occur when subsequently exposed to very low levels.

Repeated dose toxicity (subacute, subchronic, chronic)

Subacute oral toxicity

Parameter :	NOAEL(C) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Oral
Species :	Rat
Effective dose :	75 mg/kg
Parameter :	NOEL(C) (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Exposure route :	Oral
Species :	Rat
Effective dose :	75 mg/kg

11.3 Symptoms related to the physical, chemical and toxicological characteristics

In case of skin contact

Powder coatings can cause localised skin irritation in folds of the skin or in contact with tight clothing.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter :	LC50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose :	8,8 mg/l
Exposure time :	96 h
Method :	OECD 203

Acute (short-term) daphnia toxicity

Parameter :	EC50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose :	81 mg/l
Exposure time :	48 h
Method :	OECD 202

Acute (short-term) algae toxicity

Parameter :	EC50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose :	2,72 mg/l
Exposure time :	72 h
Parameter :	ErC50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose :	2,94 mg/l
Exposure time :	72 h
Method :	OECD 201

Chronic (long-term) algae toxicity

Parameter :	NOEC (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose :	0,368 mg/l
Exposure time :	72 h
Parameter :	NOEC (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl)

benzene-1,2,4-tricarboxylate)

Effective dose : 0,327 mg/l
Exposure time : 72 h
Method : OECD 201

Bacteria toxicity

Parameter : EC50 (Reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate)
Effective dose : > 1000 mg/l
Exposure time : 3 h

12.2 Persistence and degradability

Abiotic degradation

Mechanical separation in a suitable sewage plant is possible.

Biodegradation

In accordance with the required stability the product is poorly biodegradable.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Other adverse effects

No information available.

12.7 Additional ecotoxicological information

Additional information

Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Dispose according to legislation.

Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

EWC-Code: 08 02 01.

Waste treatment options

Appropriate disposal / Package

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

13.2 Additional information

Note sections 7 and 8.

SECTION 14: Transport information

14.1 UN number

No dangerous good in sense of these transport regulations.

14.2 UN proper shipping name

No dangerous good in sense of these transport regulations.

14.3 Transport hazard class(es)

No dangerous good in sense of these transport regulations.

14.4 Packing group

No dangerous good in sense of these transport regulations.

14.5 Environmental hazards

No dangerous good in sense of these transport regulations.

14.6 Special precautions for user

None

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Other regulations (EU)

Restrictions of occupation

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National regulations

Water hazard class (WGK)

Class : 1 (Slightly hazardous to water) Classification according to AwSV

Other regulations, restrictions and prohibition regulations

Note TRGS 001. Note TRGS 400.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

02. Classification of the substance or mixture · 02. Label elements · 02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] - Hazard components for labelling · 02. Special rules for supplemental label elements for certain mixtures · 15. Water hazard class (WGK)

16.2 Abbreviations and acronyms

TRGS: German Technical Rule for Hazardous Substances. BGR(I): Rule (Information) from the german employers liability insurance association. DGUV: German Statutory Accident Insurance. AwSV: Ordinance on plants for the handling of substances hazardous to water. VCI: German chemical industry association. EWC: European Waste Catalogue.

16.3 Key literature references and sources for data

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Calculation method.

16.5 Relevant H- and EUH-phrases (Number and full text)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

16.6 Training advice

None

16.7 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.