# MAKROLON 6557 010180

Version 5.0 Revision Date 14.02.2024 Print Date 18.02.2024

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

### 1.1 Product identifier

**MAKROLON 6557 010180**

**Material number:** 86565145

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

**Use:**
Production of moulded plastic articles

### 1.3 Details of the supplier of the safety data sheet

Covestro Deutschland AG
COV Global Product Safety
51365 Leverkusen

Tel.: +49 214 6009 8134
Email: ProductSafetyEMLA@covestro.com

### 1.4 Emergency telephone number

+1-703-527-3887 (Chemtrec)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

No classification in accordance with the Regulation (EC) No. 1272/2008.

### 2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 Appendix II (special regulations for the labeling and packaging of certain substances and mixtures)

**Supplementary hazardous characteristics and labeling elements:**
EUH212 Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

### 2.3 Other hazards

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

## SECTION 3: Composition/information on ingredients

**Type of product:** Mixture

### 3.2 Mixtures

Polycarbonate

**Hazardous components**

titanium dioxide
Concentration [wt.-%]: >= 2,5 - < 3

EC-No.: 236-675-5
REACH Registration Number: 01-2119489379-17-xxxx
CAS-No.: 13463-67-7
Classification (1272/2008/CE): Carc. 2 Inhalative H351

**vPvB substance**

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Concentration [wt.-%]: >= 0,1 - < 0,3
CAS-No.: 3147-75-9
No classification in accordance with the Regulation (EC) No. 1272/2008.

**REACH-Candidate List of Substances of Very High Concern for Authorisation (Article 59).**

Potassium perfluorobutanesulphonate
Concentration [wt.-%]: >= 0,1 - < 0,3
EC-No.: 249-616-3
REACH Registration Number: 01-2120757935-39-0006
CAS-No.: 29420-49-3
Classification (1272/2008/CE): Eye Dam. 1 H318

Additional information on classification/labeling:

The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter <= 10 µm.

Because the substance(s) listed here is/are embedded into the polymer matrix, no exposure is expected if the product is properly handled.

**Candidate List of Substances of Very High Concern for Authorisation**
This product contains substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 59).

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
CAS-No.: 3147-75-9

Potassium perfluorobutanesulphonate
CAS-No.: 29420-49-3

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**In case of skin contact:** CONTACT WITH THE HOT MELT: Cool immediately with plenty of water. Do not remove product crusts which may have formed neither forcibly nor by applying any solvents to the skin involved. To obtain treatment for possible burns, and appropriate skin care, seek medical advice immediately.

The following information refers to the handling of the product at room temperature. In case of skin contact wash affected areas thoroughly with soap and plenty of water.

### 4.2 Most important symptoms and effects, both acute and delayed

**Notes to physician:** No information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Therapeutic measures:** No information available.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media:** sprayed water jet, extinguishing powder, Carbon dioxide (CO2), Foam, Dry chemical

### 5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

### 5.3 Advice for fire-fighters

Firemen must wear self-contained breathing apparatus.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Granules - slip hazard!

### 6.2 Environment related measures

Do not flush into surface water or sanitary sewer system.

### 6.3 Methods and material for containment and cleaning up

Use mechanical handling equipment. Avoid dust formation.

### 6.4 Reference to other sections

For further disposal measures see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Under recommended processing conditions small amounts of residues of monomers and residual solvent may be emitted. Provided good ventilation and/or local exhaust systems are used, the Workplace Exposure Limit(s) stated in section 8 should not be exceeded.

In case of mechanical processing, dust must be removed by effective exhaust ventilation.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Change contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required.

Storage class (TRGS 510) : 11: Combustible Solids

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Components with workplace control parameters**

| Substance | CAS-No. | Basis | Type | Value | Ceiling Limit Value | Remarks |
|---|---|---|---|---|---|---|
| titanium dioxide | 13463-67-7 | TRGS 900 | | 1,25 mg/m3 | | |
| titanium dioxide | 13463-67-7 | TRGS 900 | | 10 mg/m3 | 2 | |

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures. In our experience the provision of effective fresh-air and exhaust ventilation equipment at the points where vapors may be generated will ensure compliance with the tolerance limits quoted below.

| Substance | CAS-No. | Basis | Type | Value | Ceiling Limit Value | Remarks |
|---|---|---|---|---|---|---|
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | EU ELV | TWA | 2 ppm 8 mg/m3 | | Indicative |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | EU ELV | | | | Dermal absorption possible |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | EU ELV | STEL | 4 ppm 16 mg/m3 | | Indicative |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | TRGS 900 | | | | Listed. |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | TRGS 900 | | | | Dermal absorption possible |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | TRGS 900 | | 2 ppm 8 mg/m3 | 2 | |
| phenol; carbolic acid; monohydroxybenzene; phenylalcohol | 108-95-2 | TRGS 900 | STEL CL | | | Category II: substances with a resorptive effect. |
| chlorobenzene | 108-90-7 | TRGS 900 | | | | Listed. |
| chlorobenzene | 108-90-7 | TRGS 900 | | 5 ppm 23 mg/m3 | 2 | Y |
| chlorobenzene | 108-90-7 | EU ELV | TWA | 5 ppm 23 mg/m3 | | Indicative |
| chlorobenzene | 108-90-7 | EU ELV | STEL | 15 ppm 70 mg/m3 | | Indicative |
| chlorobenzene | 108-90-7 | TRGS 900 | STEL CL | | | Category II: substances with a resorptive effect. |
| 4-tert-butylphenol | 98-54-4 | TRGS 900 | | | | Listed. |
| 4-tert-butylphenol | 98-54-4 | TRGS 900 | | 0,08 ppm 0,5 mg/m3 | 2 | |
| 4-tert-butylphenol | 98-54-4 | TRGS 900 | | | | Dermal absorption possible |
| 4-tert-butylphenol | 98-54-4 | TRGS 900 | STEL CL | | | Category II: substances with a resorptive effect. |
| bisphenol A; 4,4'-isopropylidenediphenol | 80-05-7 | TRGS 900 | | | | Listed. |
| bisphenol A; 4,4'-isopropylidenediphenol | 80-05-7 | TRGS 900 | STEL CL | | | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. |
| bisphenol A; 4,4'-isopropylidenediphenol | 80-05-7 | TRGS 900 | | 5 mg/m3 | 1 | Y |
| bisphenol A; 4,4'-isopropylidenediphenol | 80-05-7 | EU ELV | TWA | 2 mg/m3 | | Indicative |

| | | | | | | |
|---|---|---|---|---|---|---|
| General limiting value of dust | | TRGS 900 | | 10 mg/m3 | 2 | inhalable fraction |
| General limiting value of dust | | TRGS 900 | | 3 mg/m3 | 2 | alveolar fraction |
| General limiting value of dust | | TRGS 900 | STEL CL | | | Category II: substances with a resorptive effect. |

**8.2 Exposure controls**

**Respiratory protection**
In case of dust formation use respiratory equipment with filter type particle filter P1 according to EN 143.

**Hand protection**
Suitable materials for safety gloves; EN 374:
Polyvinyl chloride - PVC (>= 0.5 mm)
Contaminated and/or damaged gloves must be changed.

**Eye protection**
Wear eye/face protection.

**Skin and body protection**
Wear suitable protective clothing.

## SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| Physical state: | solid at 20 °C at 1.013 hPa |
| Appearance: | granular |
| Colour: | white |
| Odour: | odourless |
| Odour Threshold: | not established |
| pH: | not applicable |
| Softening point: | 130 - 160 °C |
| Boiling point/boiling range: | not established |
| Flash point: | not established |
| Evaporation rate: | not established |
| Flammability: | not established |
| Burning number: | not established |
| Upper/lower flammability or explosive limits: | not applicable |
| Vapour pressure: | not applicable |
| Relative vapour density: | not established |
| Density: | ca. 1,2 - 1,4 g/cm³ |
| Bulk density: | 600 - 700 kg/m³ |
| Miscibility with water: | not established |
| Water solubility: | practically insoluble |
| Surface tension: | not established |
| Partition coefficient (n−octanol/water): | not established |
| Auto-ignition temperature: | not applicable |
| Ignition temperature: | > 450 °C |
| Decomposition temperature: | >= 380 °C |
| Heat of combustion: | not established |
| Viscosity, dynamic: | not applicable |
| Viscosity, kinematic: | not established |
| Particle characteristics | |
| Particle size: | not established |

### 9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the product information sheet or the technical information sheet for specification data.

| | |
|---|---|
| Explosive properties: | not established |
| Dust explosion class: | not established |
| Oxidising properties: | not established |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This information is not available.

### 10.2 Chemical stability

Fumes evolved by overheating during improperly processing or by burning may be injurious to health.

### 10.3 Possibility of hazardous reactions

No hazardous reactions observed.

### 10.4 Conditions to avoid

This information is not available.

### 10.5 Incompatible materials

This information is not available.

### 10.6 Hazardous decomposition products

Caused by smouldering and incomplete combustion toxic fumes mainly consisting of CO and CO2 may be developed.

Under recommended processing conditions small amounts of emissions may occur.

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures.

phenol; carbolic acid; monohydroxybenzene; phenylalcohol
Index-No. 604-001-00-2
CAS-No.: 108-95-2
Classification (1272/2008/CE): Acute Tox. 3 Oral H301 Acute Tox. 3 Inhalative H331 Acute Tox. 3 Dermal H311 Skin Corr. 1B H314 Eye Dam. 1 H318 Muta. 2 H341 STOT RE 2 H373 Aquatic Chronic 2 H411

chlorobenzene
Index-No. 602-033-00-1
CAS-No.: 108-90-7
Classification (1272/2008/CE): Flam. Liq. 3 H226 Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315 Aquatic Chronic 2 H411

4-tert-butylphenol
Index-No. 604-090-00-8
CAS-No.: 98-54-4
Classification (1272/2008/CE): Skin Irrit. 2 H315 Eye Dam. 1 H318 Repr. 2 H361f Aquatic Chronic 1 H410

bisphenol A; 4,4'-isopropylidenediphenol
Index-No. 604-030-00-0
CAS-No.: 80-05-7
Classification (1272/2008/CE): Eye Dam. 1 H318 Skin Sens. 1 H317 Repr. 1B H360F STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic Chronic 1 H410

## SECTION 11: Toxicological information

Toxicological studies on the product are not yet available.

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Acute toxicity, oral**
titanium dioxide
LD50 rat, male/female: > 5.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Method: OECD Test Guideline 420

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
LD50 rat, male: > 5.000 mg/kg
Method: OECD Test Guideline 401

Potassium perfluorobutanesulphonate
LD50 rat, male/female: > 2.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Method: OECD Test Guideline 401

**Acute toxicity, dermal**
titanium dioxide
Study scientifically not justified.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
LD50 rabbit, male: > 5.000 mg/kg
Method: OECD Test Guideline 402

Potassium perfluorobutanesulphonate
LD50 rat, male/female: > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Method: OECD Test Guideline 402

**Acute toxicity, inhalation**
titanium dioxide
LC50 rat, male/female: > 6,82 mg/l, 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Method: OECD Test Guideline 403

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
LC50 rat: > 20 mg/l, 4 h
Test atmosphere: dust/mist

Potassium perfluorobutanesulphonate
Assessment: No data available, supplier information

**Primary skin irritation**
titanium dioxide
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Potassium perfluorobutanesulphonate
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

**Primary mucosae irritation**

titanium dioxide
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Species: rabbit
Result: non-irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

Potassium perfluorobutanesulphonate
Species: rabbit
Result: severe irritant
Classification: Causes serious eye damage.
Method: OECD Test Guideline 405

**Sensitisation**
titanium dioxide
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 429

Respiratory sensitization
Species: Human experience
Result: negative
Classification: Does not cause respiratory sensitization.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Respiratory sensitization
No data available.

Potassium perfluorobutanesulphonate
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Respiratory sensitization
No data available.

**Subacute, subchronic and prolonged toxicity**
titanium dioxide
NOAEL: 962 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 67 - 258 - 962 mg/kg bw/day
Exposure duration: 92 Days
Frequency of treatment: daily
Method: OECD Test Guideline 408

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
NOAEL: >= 3000 ppm
Application Route: Oral
Species: rat, male/female
Dose Levels: 100 - 300 - 1000 - 3000 ppm
Exposure duration: 104 w
Frequency of treatment: daily

Method: OECD Test Guideline 452
Studies of a comparable product.

Potassium perfluorobutanesulphonate
NOAEL: 900 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 900 mg/kg bw/day
Exposure duration: 28 d
Frequency of treatment: daily
Method: OECD Test Guideline 407

NOAEL: 200 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 60 - 200 - 600 mg/kg bw/day
Exposure duration: 90 d
Frequency of treatment: daily
Method: OECD Test Guideline 408

**Carcinogenicity**
titanium dioxide
NOAEL (Toxicity): 7.500 mg/kg body weight/day
Species: Mouse, male/female
Application Route: Oral
Dose Levels: 0 - 3750 - 7500 mg/kg body weight/day
Exposure duration: 103 week(s)
Frequency of treatment: daily
Result: no increase in tumors observed

NOAEL (Toxicity): 2.500 mg/kg body weight/day
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 1250 - 2500 mg/kg body weight/day
Exposure duration: 103 week(s)
Frequency of treatment: daily
Result: no increase in tumors observed

NOAEL (Toxicity): 5 mg/m³
Species: rat, male/female
Application Route: Inhalative
Dose Levels: 0 - 5 mg/m³
Exposure duration: 24 month(s)
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Result: no increase in tumors observed

NOAEL (Toxicity): 10 mg/m³
Species: Mouse, female
Application Route: Inhalative
Dose Levels: 0 - 10 mg/m³
Exposure duration: 13,5 month(s)
Frequency of treatment: 5 times/week
Result: no increase in tumors observed

LOAEL (Toxicity): 10 mg/m³
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 10 mg/m³
Exposure duration: 24 month(s)
Frequency of treatment: 5 times/week
Result: positive
Increase in the incidence of tumors.

NOAEL (Toxicity): 50,68 mg/m³
LOAEL (Toxicity): 250,1 mg/m³
Species: rat, male/female
Application Route: Inhalative

Dose Levels: 0 - 10,55 - 50,68 - 250,1 mg/m³
Exposure duration: 24 month(s)
Frequency of treatment: 6 hours/day, 5 days/week
Result: positive
Increase in the incidence of tumors.

NOAEL (Toxicity): 5 mg/m³
Species: rat, male/female
Application Route: Inhalative
Dose Levels: 0 - 5 mg/m³
Exposure duration: 24 month(s)
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Result: no increase in tumors observed

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
No data available.

Potassium perfluorobutanesulphonate
no data available

**Reproductive toxicity/Fertility**
titanium dioxide
No data available.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
NOAEL - Parents: >= 300 mg/kg
NOAEL (offspring): >= 300 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female
Application Route: Oral
Frequency of treatment: daily
Control group: yes
Method: OECD Test Guideline 422
Studies of a comparable product.

Potassium perfluorobutanesulphonate
NOAEL (parents, generelly toxicity): 1000 mg/kg body weight/day
NOAEL (parents, fertility): 1000 mg/kg body weight/day
NOAEL (offspring): 300 mg/kg body weight/day
Test type: Two-generation study
Species: rat, male/female
Application Route: Oral
Frequency of treatment: daily

**Reproductive toxicity/Developmental Toxicity/Teratogenicity**
titanium dioxide
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): 1.000 mg/kg
NOAEL (developmental toxicity): 1000 mg/kg body weight/day
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg body weight/day
Frequency of treatment: daily
Method: OECD Test Guideline 414

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
NOAEL (teratogenicity): >= 1.000 mg/kg
NOAEL (maternal): 1.000 mg/kg
NOAEL (developmental toxicity): >= 1000 mg/kg body weight/day
Species: rat, female
Application Route: Oral
Dose Levels: 150 - 500 - 1000 mg/kg body weight/day
Frequency of treatment: Daily from day 6 to day 15 of the gestation
Control group: yes
Method: OECD Test Guideline 414
Studies of a comparable product.

Potassium perfluorobutanesulphonate
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): 300 mg/kg
NOAEL (developmental toxicity): 300 mg/kg body weight/day
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg body weight/day
Frequency of treatment: Daily from day 6 to day 20 of the gestation
Method: OECD Test Guideline 414

**Genotoxicity in vitro**
titanium dioxide
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Potassium perfluorobutanesulphonate
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

**Genotoxicity in vivo**
titanium dioxide
Test type: In vivo micronucleus test
Species: rat, male/female
Application Route: intratracheal
Result: negative

Potassium perfluorobutanesulphonate
Test type: In vivo micronucleus test
Species: rat, male/female
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474

**STOT evaluation – one-time exposure**
titanium dioxide
Based on available data, the classification criteria are not met.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Based on available data, the classification criteria are not met.

Potassium perfluorobutanesulphonate
Based on available data, the classification criteria are not met.

**STOT evaluation – repeated exposure**
titanium dioxide
Based on available data, the classification criteria are not met.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Based on available data, the classification criteria are not met.

Potassium perfluorobutanesulphonate
Based on available data, the classification criteria are not met.

**Aspiration toxicity**

titanium dioxide
Based on available data, the classification criteria are not met.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Based on available data, the classification criteria are not met.

Potassium perfluorobutanesulphonate
Based on available data, the classification criteria are not met.

**CMR Assessment**
titanium dioxide
Carcinogenicity: Suspected of causing cancer (Carc. 2).
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

Potassium perfluorobutanesulphonate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

**Toxicology Assessment**
titanium dioxide
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.

Potassium perfluorobutanesulphonate
Acute effects: Causes serious eye damage.
Sensitization: Based on available data, the classification criteria are not met.

**11.2 Information on other hazards**

**Endocrine disrupting properties**
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Other information**
According to our experience and information the product has no harmful effects on health if properly handled.

## SECTION 12: Ecological information

Ecotoxicological studies of the product are not available.

Do not allow to escape into waterways, wastewater or soil.

**12.1 Toxicity**

**Acute Fish toxicity**
titanium dioxide
LC50 > 100 mg/l
Species: Carassius auratus (goldfish)
Exposure duration: 96 h
Method: OECD Test Guideline 203

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
LC50 > 100 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
No toxic effects in the water-soluble range.

Potassium perfluorobutanesulphonate
LC50 1.938 mg/l
Species: Pimephales promelas (fathead minnow)
Exposure duration: 96 h
Method: OECD Test Guideline 203

**Chronic Fish toxicity**
titanium dioxide
NOEC > 100 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 8 d
Method: OECD Test Guideline 212

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
No data available.

Potassium perfluorobutanesulphonate
NOEC > 3.000 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 144 h

**Acute toxicity for daphnia**
titanium dioxide
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

Potassium perfluorobutanesulphonate
EC50 372 mg/l
Species: Mysidopsis bahia (new name: Americamysis bahia)
Exposure duration: 96 h

**Chronic toxicity to daphnia**
titanium dioxide
NOEC > 1 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 28 d

Potassium perfluorobutanesulphonate
NOEC 502 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

**Acute toxicity for algae**
titanium dioxide
EC50 > 10.000 mg/l
Species: Skeletonema costatum (marine diatom)
Exposure duration: 72 h

> 2 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
EC50 > 100 mg/l
Species: scenedesmus subspicatus
Exposure duration: 72 h

NOEC > 100 mg/l
Species: scenedesmus subspicatus
Exposure duration: 72 h

Potassium perfluorobutanesulphonate
ErC50 5.661 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 96 h
Method: OECD Test Guideline 201

**Acute bacterial toxicity**
titanium dioxide
NOEC > 1.000 mg/l
Species: activated sludge
Exposure duration: 3 h

Method: OECD Test Guideline 209

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
IC50 > 100 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

Potassium perfluorobutanesulphonate
EC50 > 10.000 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

**Toxicity to soil dwelling organisms**
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
NOEC >= 1.000 mg/kg
Species: Eisenia fetida (earthworms)
Exposure duration: 56 d
Method: OECD Test Guideline 222

**Ecotoxicology Assessment**
titanium dioxide
Short-term (acute) aquatic hazard: Based on available data, the classification criteria are not met.
Long-term (chronic) aquatic hazard: Based on available data, the classification criteria are not met.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Impact on Sewage Treatment: May be separated mechanically in waste water plants.

**12.2 Persistence and degradability**

**Biodegradability**
titanium dioxide
The methods for determining the biological degradability are not applicable to inorganic substances.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 B

Potassium perfluorobutanesulphonate
Biodegradation: 14 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 E

**Adsorbed organic bound halogens (AOX)**
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole

Product does not contain any organic halogens.

**12.3 Bioaccumulative potential**

**Bioaccumulation**
titanium dioxide
Accumulation in aquatic organisms is unlikely.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Bioconcentration factor (BCF): 461
Species: Oncorhynchus mykiss (rainbow trout)
Exposure duration: 28 d

Potassium perfluorobutanesulphonate
Bioconcentration factor (BCF): < 1
Species: Lepomis macrochirus (Bluegill sunfish)
Exposure duration: 28 d

**Partition coefficient (n−octanol/water)**
Potassium perfluorobutanesulphonate

log Pow: -1,8 at: 23 °C

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

**12.6 Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7 Other adverse effects**

The product is practically insoluble in water. In view of its consistency and insolubility in water, no ecological problems are to be expected if the product is properly handled. The product is not readily biodegradable.

## SECTION 13: Disposal considerations

Dispose in accordance with applicable international, national and local laws, ordinances and statutes.

For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

**13.1 Waste treatment methods**

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

The product is suitable for mechanical recycling. After appropriate treatment it can be remelted and reprocessed into new moulded articles. Mechanical recycling is only possible if the material has been selectively retrieved and carefully segregated according to type.

## SECTION 14: Transport information

**ADR/RID**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | Not dangerous goods |
| 14.2 UN proper shipping name | : | Not dangerous goods |
| 14.3 Transport hazard class(es) | : | Not dangerous goods |
| 14.4 Packing group | : | Not dangerous goods |
| 14.5 Environmental hazards | : | Not dangerous goods |

**ADN**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | Not dangerous goods |
| 14.2 UN proper shipping name | : | Not dangerous goods |
| 14.3 Transport hazard class(es) | : | Not dangerous goods |
| 14.4 Packing group | : | Not dangerous goods |
| 14.5 Environmental hazards | : | Not dangerous goods |

Dangerous goods classification for inland waterways tanker by request only.

**IATA**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | Not dangerous goods |
| 14.2 UN proper shipping name | : | Not dangerous goods |
| 14.3 Transport hazard class(es) | : | Not dangerous goods |
| 14.4 Packing group | : | Not dangerous goods |
| 14.5 Environmental hazards | : | Not dangerous goods |

**IMDG**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | Not dangerous goods |

| | | |
|---|---|---|
| 14.2 UN proper shipping name | : | Not dangerous goods |
| 14.3 Transport hazard class(es) | : | Not dangerous goods |
| 14.4 Packing group | : | Not dangerous goods |
| 14.5 Environmental hazards | : | Not dangerous goods |

**14.6 Special precautions for user**

See section 6 - 8.

Additional information : Not dangerous cargo. Keep dry.

**14.7 Maritime transport in bulk according to IMO instruments**

Product is not transported by us in bulk.

## SECTION 15: Regulatory information

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

**Candidate List of Substances of Very High Concern for Authorisation**
This product contains substances identified as SVHC according to REACH Regulation (EC) no. 1907/2006, Article 59. Please refer to section 3.

**Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.**
not applicable

**TA Luft List (Germany)**
Type: 5.2.5 Organic Substances
portion Class 1: 0,24 %

Fraction of other substances: 96,59 %

**Water contaminating class (Germany)**
nw not water endangering
Identification number according to AwSV: 766

**15.2 Chemical Safety Assessment**

A Chemical Safety Assessment has not been conducted for this substance / mixture resp. its components.

## SECTION 16: Other information

**Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.**

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H341 | Suspected of causing genetic defects. |
| H351 | Suspected of causing cancer if inhaled. |
| H360F | May damage fertility. |
| H361f | Suspected of damaging fertility. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |

**Abbreviations and acronyms**

| | |
|---|---|
| ADN | Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure |
| ADR | Accord européen relatif au transport international des marchandises Dangereuses par Route |
| ANSI | American National Standards Institute |
| ASTM | American Society of Testing and Materials (US) |
| ATE | Acute Toxic Estimate |
| AwSv | Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen |
| BCF | Bioconcentration Factor |
| CAS | Chemical Abstract Service |
| CLP | Regulation on Classification, Labelling and Packaging of Substances and Mixtures |
| CMR | Cancerogenic Mutagenic Reprotoxic |
| DIN | Deutsches Institut für Normung |
| DNEL | Derived No-Effect Level |
| EC… | Effect Concentration ... % |
| EWC | European Waste Catalogue |
| IATA | International Air Transport Association |
| IBC | Intermediate Bulk Container |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| IUPAC | International Union of Pure and Applied Chemistry |
| LOAEL | Lowest Observable Adverse Effect Level |
| LC… | Lethal Concentration, ...% |
| LD… | Lethal Dose, ...% |
| MARPOL | International Convention for the Prevention of Pollution From Ships |
| NOAEL | No Observed Adverse Effect Level |
| NOEL/NOEC | No Observed Effect Level/Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| PBT | persistent, bioaccumulative, toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire de marchandises Dangereuses |
| STOT | Specific Target Organ Toxicity |
| TRGS | Technische Regeln für Gefahrstoffe |
| vPvB | very Persistent, very Bioaccumulative |
| WGK | Wassergefährdungsklasse |

Relevant changes since the last version are highlighted in the margin. This version replaces all previous versions.

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.