MAKROLON 6267X 010180

Version 3.0 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 6267X 010180

Material number: 86073900

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:

Contains:
triphenylphosphine
EUH208 May produce an allergic reaction.
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

triphenylphosphine
Concentration [wt.-%]: >= 0,1 - < 0,3
EC-No.: 210-036-0
REACH Registration Number: 01-2119475464-32
CAS-No.: 603-35-0
Classification (1272/2008/CE): Acute Tox. 4 Oral H302 Skin Sens. 1B H317 STOT RE 1 Inhalative H372 (Nervous system)
ATE (oral): 700 mg/kg

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.

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

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	
titanium dioxide	13463-67-7	TRGS 900		1,25 mg/m3		
titanium dioxide	13463-67-7	TRGS 900		10 mg/m3	2	
triphenylphosphine	603-35-0	TRGS 900				Listed.
triphenylphosphine	603-35-0	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
triphenylphosphine	603-35-0	TRGS 900		5 mg/m3	2	Y

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.

Derived No Effect Level (DNEL)

triphenylphosphine

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term systemic effects	5 mg/m3	
Workers	Inhalation	Acute systemic effects	10 mg/m3	
Workers	Inhalation	Long-term local effects	5 mg/m3	
Workers	Inhalation	Acute local effects	10 mg/m3	
Workers	Dermal	Long-term systemic effects	0,5 mg/kg bw/day	
Workers	Dermal	Acute systemic effects	1 mg/kg bw/day	
Consumers	Inhalation	Long-term systemic effects	1 mg/m3	
Consumers	Inhalation	Acute systemic effects	5 mg/m3	
Consumers	Inhalation	Long-term local effects	1 mg/m3	
Consumers	Inhalation	Acute local effects	5 mg/m3	
Consumers	Dermal	Long-term systemic effects	0,1 mg/kg bw/day	
Consumers	Dermal	Acute systemic effects	0,5 mg/kg bw/day	
Consumers	Oral	Long-term systemic effects	0,1 mg/kg bw/day	
Consumers	Oral	Acute systemic effects	0,5 mg/kg bw/day	

Predicted No Effect Concentration (PNEC)

triphenylphosphine

Compartment	Value	Remarks
Fresh water	0,165 mg/l	
Fresh water sediment	5540 mg/kg	
Marine water	0,165 mg/l	
Marine sediment	5540 mg/kg	

Sewage treatment plant	100 mg/l	
Air		No hazard identified
Soil	1100 mg/kg dry weight	
Oral		no data available
Intermittent use/release	0,165 mg/l	

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

triphenylphosphine
LD50 rat: ca. 700 mg/kg

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

Acute toxicity, dermal
titanium dioxide
Study scientifically not justified.

triphenylphosphine
LD50 rabbit: > 4.000 mg/kg

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
LD50 rabbit, male: > 5.000 mg/kg
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

triphenylphosphine
LC50 rat: 12,5 mg/l, 4 h
Test atmosphere: dust/mist

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

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

triphenylphosphine
Species: rabbit
Result: slight irritant
Classification: No skin irritation

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
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

triphenylphosphine
Species: rabbit
Result: slight irritant
Classification: No eye irritation

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
Species: rabbit
Result: non-irritant
Classification: No eye irritation
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.

triphenylphosphine
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)

Respiratory sensitization
No data available.

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.

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

triphenylphosphine
NOAEL: 6 mg/kg
LOAEL (Lowest observable adverse effect level): 60 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 6 - 60 - 120 mg/kg/day
Method: OECD Test Guideline 408

NOAEL: 10 mg/m³ air

Application Route: inhalation (dust/mist/fume)
Species: Dog, male/female
Target Organs: Nervous system
Subacute toxicity

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.

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

triphenylphosphine
No data available.

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

Reproductive toxicity/Fertility
titanium dioxide
No data available.

triphenylphosphine
NOAEL (parents, fertility): 120 mg/kg body weight/day
Species: rat, male/female
Application Route: Oral
Method: OECD Test Guideline 408

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.

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

triphenylphosphine
NOAEL (teratogenicity): 90 mg/kg
NOAEL (maternal): 30 mg/kg
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 10 - 30 - 90 mg/kg body weight/day
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.

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

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

Test type: Chromosome aberration test in vitro
Metabolic activation: without
Result: negative

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

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

triphenylphosphine
Test type: In vivo micronucleus test
Species: Mouse, male/female
Application Route: intraperitoneal
Result: negative

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

triphenylphosphine
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.

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

triphenylphosphine
Route of exposure: Inhalative
Target Organs: Nervous system
Causes damage to organs through prolonged or repeated exposure.

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

Aspiration toxicity

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

triphenylphosphine
No data available.

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
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.

triphenylphosphine
Carcinogenicity: No data available.
Mutagenicity: In vitro an in vivo tests did not show mutagenic effects. Based on available data, the classification criteria are not met.
Teratogenicity: Did not show teratogenic effects in animal experiments. Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: No toxicity to reproduction 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.

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.

triphenylphosphine
Acute effects: Harmful if swallowed. Causes serious eye damage.
Sensitization: May cause an allergic skin reaction.

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

triphenylphosphine
LC50 > 10.000 mg/l
Species: Leuciscus idus (Golden orfe)
Exposure duration: 96 h

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.

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.

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

triphenylphosphine
EC50 > 5 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
No toxic effects in the water-soluble range.

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

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

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

triphenylphosphine
ErC50 > 5 mg/l
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
No toxic effects in the water-soluble range.

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

Acute bacterial toxicity
titanium dioxide
NOEC > 1.000 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

triphenylphosphine
EC50 > 10.000 mg/l
Species: Pseudomonas putida
Exposure duration: 0,5 h
Method: DIN 38412

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole
IC50 > 100 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.

triphenylphosphine
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.

triphenylphosphine
Biodegradation: < 20 %, 28 d, i.e. not readily degradable
Ecotoxicological reports on a comparable product

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

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.

triphenylphosphine
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

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

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: 96,76 %

Type: 5.2.7.1.1 Carcinogenic substance
portion Class 2: < 0,01 %

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

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for:
triphenylphosphine

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.
H302	Harmful 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.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
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.