

# SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by  
UK REACH Regulations SI 2019/758



## TBPB

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: 14.08.2023  |
| 4.0     | 24.02.2025     | 600000000000 | Date of first issue: 21.02.2023 |

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

### 1.1 Product identifier

Trade name : TBPB

REACH Registration Number : 01-2119513317-46-0003

Substance name : tert-Butyl perbenzoate

EC-No. : 210-382-2

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

Use of the Sub-  
stance/Mixture : polymerisation initiators

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

Company : United Initiators GmbH  
Dr.-Gustav-Adolph-Str. 3  
82049 Pullach

Telephone : +49 / 89 / 74422 – 0

E-mail address of person  
responsible for the SDS : contact@united-in.com

### 1.4 Emergency telephone number

+44 1235 239670

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK  
SI 2019/720, and UK SI 2020/1567)**

|   |  |
|---|--|
| Organic peroxides, Type C                     | H242: Heating may cause a fire.            |
| Acute toxicity, Category 4                    | H332: Harmful if inhaled.                  |
| Skin irritation, Category 2                   | H315: Causes skin irritation.              |
| Skin sensitisation, Category 1                | H317: May cause an allergic skin reaction. |
| Short-term (acute) aquatic hazard, Category 1 | H400: Very toxic to aquatic life.          |

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Long-term (chronic) aquatic hazard, Category 3

H412: Harmful to aquatic life with long lasting effects.

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

Hazard pictograms



Signal word

: Danger

Hazard statements

|      |   |
|------|---|
| H242 | Heating may cause a fire.                             |
| H315 | Causes skin irritation.                               |
| H317 | May cause an allergic skin reaction.                  |
| H332 | Harmful if inhaled.                                   |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statements

**Prevention:**

|      |  |
|------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P234 | Keep only in original packaging.   |
| P273 | Avoid release to the environment.  |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection.                  |

**Response:**

|             |   |
|-------------|---|
| P370 + P378 | In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish. |
| P391        | Collect spillage.   |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                |                          |
|----------------|--------------------------|
| Substance name | : tert-Butyl perbenzoate |
| EC-No.         | : 210-382-2              |

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Chemical nature : Organic Peroxide  
liquid

### Components

| Chemical name          | CAS-No.<br>EC-No.     | Concentration (% w/w) |
|------------------------|-----------------------|-----------------------|
| tert-Butyl perbenzoate | 614-45-9<br>210-382-2 | <= 100                |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Take off contaminated clothing and shoes immediately.  
Call a physician immediately.  
Never give anything by mouth to an unconscious person.  
If unconscious, place in recovery position and seek medical advice.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.  
Symptoms of poisoning may appear several hours later.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- If inhaled : Administer oxygen if breathing is difficult or cyanosis is observed.  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
Call a physician or poison control centre immediately.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.
- In case of skin contact : If symptoms persist, call a physician.  
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash contaminated clothing before re-use.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.

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If eye irritation persists, consult a specialist.

If swallowed : Call a physician immediately.  
Rinse mouth thoroughly with water.  
Keep respiratory tract clear.  
If symptoms persist, call a physician.

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

Symptoms : sensitising effects

Risks : Causes skin irritation.  
May cause an allergic skin reaction.  
Harmful if inhaled.

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

Treatment : Treat symptomatically and supportively.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Water spray jet  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

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

Specific hazards during fire-fighting : Risk of explosion if heated under confinement.  
Possible emission of gaseous decomposition products may lead to a dangerous pressure build-up.  
Avoid confinement.  
Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.  
The product burns violently.  
Flash back possible over considerable distance.  
Do not allow run-off from fire fighting to enter drains or water courses.  
Vapours may form explosive mixtures with air.  
The product will float on water and can be reignited on surface water.  
Cool closed containers exposed to fire with water spray.

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### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
- Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.  
Remove undamaged containers from fire area if it is safe to do so.  
Use water spray to cool unopened containers.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use a water spray to cool fully closed containers.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

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

- Personal precautions : Follow safe handling advice and personal protective equipment recommendations.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Never return spills in original containers for re-use.  
Treat recovered material as described in the section "Disposal considerations".

### 6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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

- Methods for cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.  
Clear spills immediately.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
To clean the floor and all objects contaminated by this material, use plenty of water.  
Soak up with inert absorbent material.

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Isolate waste and do not reuse.  
Non-sparking tools should be used.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- |   |   |  |
|---|---|--|
| Technical measures                              | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.  |
| Advice on safe handling                         | : | Open drum carefully as content may be under pressure.<br>Protect from contamination.<br>Do not swallow.<br>Do not breathe vapours/dust.<br>Avoid exposure - obtain special instructions before use.<br>Avoid contact with skin and eyes.<br>Avoid formation of aerosol.<br>Take precautionary measures against static discharges.<br>Never return any product to the container from which it was originally removed.<br>Provide sufficient air exchange and/or exhaust in work rooms.<br>Avoid confinement.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Wash thoroughly after handling.<br>For personal protection see section 8.<br>Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. |
| Advice on protection against fire and explosion | : | Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material.   |
| Hygiene measures                                | : | Avoid contact with skin, eyes and clothing. Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.   |

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

Requirements for storage areas and containers : Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in cool place. Keep in a well-ventilated place. Contamination may result in dangerous pressure increases - closed containers may rupture. Observe label precautions. Store in accordance with the particular national regulations. Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Advice on common storage : Keep away from combustible materials.  
Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : 10 - 40 °C

Further information on storage stability : Stable under recommended storage conditions.

### 7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

#### Derived No Effect Level (DNEL):

| Substance name         | End Use | Exposure routes | Potential health effects   | Value                  |
|------------------------|---------|-----------------|----------------------------|------------------------|
| tert-Butyl perbenzoate | Workers | Inhalation      | Long-term systemic effects | 24.7 mg/m <sup>3</sup> |
|                        | Workers | Skin contact    | Long-term systemic effects | 17.5 mg/kg bw/day      |

#### Predicted No Effect Concentration (PNEC):

| Substance name         | Environmental Compartment | Value                        |
|------------------------|---------------------------|------------------------------|
| tert-Butyl perbenzoate | Fresh water               | 0.01 mg/l                    |
|                        | Marine water              | 1.01 µg/l                    |
|                        | Sewage treatment plant    | 0.6 mg/l                     |
|                        | Fresh water sediment      | 0.28 mg/kg dry weight (d.w.) |

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|  |                 |                               |
|--|-----------------|-------------------------------|
|  | Marine sediment | 0.028 mg/kg dry weight (d.w.) |
|  | Soil            | 0.049 mg/kg dry weight (d.w.) |

### 8.2 Exposure controls

#### Engineering measures

Minimize workplace exposure concentrations.

#### Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to the workstation location.  
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
Tightly fitting safety goggles  
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

Hand protection  
Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.40 mm

Remarks : The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Wear as appropriate:  
Flame retardant antistatic protective clothing.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter



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Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|  |  |
|--|--|
| Appearance                                       | : liquid   |
| Colour   | : light yellow   |
| Odour  | : ester-like   |
| Odour Threshold                                  | : No data available  |
| pH   | : not determined substance/mixture is non-soluble (in water) |
| Melting point/freezing point                     | : ca. 10 °C  |
| Initial boiling point and boiling range          | : Decomposition: Decomposes below the boiling point.         |
| Flash point                                      | : 100 °C<br>Method: ISO 3679, closed cup                     |
| Evaporation rate                                 | : No data available  |
| Flammability (solid, gas)                        | : Not applicable   |
| Upper explosion limit / Upper flammability limit | : Upper explosion limit not determined                       |
| Lower explosion limit / Lower flammability limit | : Lower explosion limit not determined                       |
| Vapour pressure                                  | : 0.003 hPa (20 °C)  |
| Relative vapour density                          | : No data available  |
| Relative density                                 | : not determined   |
| Density  | : 1.04 g/cm <sup>3</sup> (20 °C)                             |
| Solubility(ies)<br>Water solubility              | : insoluble  |

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Solubility in other solvents : completely miscible  
Solvent: Alcohol

completely miscible  
Solvent: Phthalates

Partition coefficient: n-octanol/water : log Pow: 3.0 (25 °C)

Auto-ignition temperature : not determined  
Decomposition

Viscosity  
Viscosity, dynamic : 8 mPa.s (20 °C)

Viscosity, kinematic : not determined

Explosive properties : Not explosive  
In use, may form flammable/explosive vapour-air mixture.

Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Organic peroxide

### 9.2 Other information

Self-Accelerating decomposition temperature (SADT) : 60 °C  
Method: UN-Test H.4  
SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.

Flammability (liquids) : Organic peroxide, Flammable liquid

Self-heating substances : The substance or mixture is not classified as self heating.

Refractive index : 1.499 at 20 °C

Self-ignition : The substance or mixture is not classified as pyrophoric.

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.  
Heating may cause a fire or explosion.

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### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.  
Contact with incompatible substances can cause decomposition at or below SADT.  
Heat, flames and sparks.  
Avoid confinement.

### 10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

### 10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Harmful if inhaled.

#### Product:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg  
Method: OECD Test Guideline 423  
GLP: yes  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 1.01 - 4.9 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
GLP: yes  
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes  
Assessment: The substance or mixture has no acute dermal toxicity

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### Components:

#### **tert-Butyl perbenzoate:**

|                           |   |
|---------------------------|---|
| Acute oral toxicity       | : LD50 (Rat, female): > 2,000 mg/kg<br>Method: OECD Test Guideline 423<br>GLP: yes<br>Assessment: The substance or mixture has no acute oral toxicity   |
| Acute inhalation toxicity | : LC50 (Rat, male and female): > 1.01 - 4.9 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist<br>Method: OECD Test Guideline 436<br>GLP: yes<br>Assessment: The component/mixture is moderately toxic after short term inhalation. |
| Acute dermal toxicity     | : LD50 (Rat, male and female): > 2,000 mg/kg<br>Method: OECD Test Guideline 402<br>GLP: yes<br>Assessment: The substance or mixture has no acute dermal toxicity  |

### **Skin corrosion/irritation**

Causes skin irritation.

#### Product:

|         |                           |
|---------|---------------------------|
| Species | : Rabbit                  |
| Method  | : OECD Test Guideline 404 |
| Result  | : Skin irritation         |

|         |   |
|---------|---|
| Remarks | : May cause skin irritation in susceptible persons. |
|---------|---|

### Components:

#### **tert-Butyl perbenzoate:**

|         |                           |
|---------|---------------------------|
| Species | : Rabbit                  |
| Method  | : OECD Test Guideline 404 |
| Result  | : Skin irritation         |

### **Serious eye damage/eye irritation**

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

#### Product:

|         |                           |
|---------|---------------------------|
| Species | : Rabbit                  |
| Method  | : OECD Test Guideline 405 |
| Result  | : No eye irritation       |

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Remarks : Vapours may cause irritation to the eyes, respiratory system and the skin.

### Components:

#### **tert-Butyl perbenzoate:**

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : No eye irritation

#### **Respiratory or skin sensitisation**

##### **Skin sensitisation**

May cause an allergic skin reaction.

##### **Respiratory sensitisation**

Not classified due to lack of data.

### Product:

Species : Mouse  
Method : OECD Test Guideline 429  
Result : May cause sensitisation by skin contact.

Remarks : Causes sensitisation.

### Components:

#### **tert-Butyl perbenzoate:**

Species : Mouse  
Method : OECD Test Guideline 429  
Result : May cause sensitisation by skin contact.

#### **Germ cell mutagenicity**

Not classified due to lack of data.

### Product:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: positive

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: positive

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test

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Species: Mouse (male and female)  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

### Components:

#### **tert-Butyl perbenzoate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: positive

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: positive

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

### **Carcinogenicity**

Not classified due to lack of data.

### Product:

Remarks : No data available

### Components:

#### **tert-Butyl perbenzoate:**

Remarks : No data available

### **Reproductive toxicity**

Not classified due to lack of data.

### Product:

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 0 100, 300, 750, 1000 milligram per kilogram  
General Toxicity - Parent: NOAEL: 300 mg/kg bw/day  
General Toxicity F1: NOAEL: 300 mg/kg bw/day  
Method: OECD Test Guideline 421  
GLP: yes

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### Components:

#### **tert-Butyl perbenzoate:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 0 100, 300, 750, 1000 milligram per kilogram  
General Toxicity - Parent: NOAEL: 300 mg/kg bw/day  
General Toxicity F1: NOAEL: 300 mg/kg bw/day  
Method: OECD Test Guideline 421  
GLP: yes

#### **STOT - single exposure**

Not classified due to lack of data.

### Product:

Remarks : Not classified due to data which are conclusive although insufficient for classification.

### Components:

#### **tert-Butyl perbenzoate:**

Remarks : Not classified due to data which are conclusive although insufficient for classification.

#### **STOT - repeated exposure**

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

### Product:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Components:

#### **tert-Butyl perbenzoate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### **Repeated dose toxicity**

### Product:

Species : Rat, male and female  
NOAEL : 30 mg/kg  
Application Route : Oral  
Exposure time : 90 d

### Components:

#### **tert-Butyl perbenzoate:**

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Species : Rat, male and female  
NOAEL : 30 mg/kg  
Application Route : Oral  
Exposure time : 90 d

### Aspiration toxicity

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

#### Product:

No aspiration toxicity classification

#### Components:

##### **tert-Butyl perbenzoate:**

No aspiration toxicity classification

### Further information

#### Product:

Remarks : No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.6 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

NOEC (Danio rerio (zebra fish)): 0.72 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 11 mg/l  
aquatic invertebrates Exposure time: 48 h  
Test Type: Immobilization  
Method: OECD Test Guideline 202  
GLP: yes

NOEC (Daphnia magna (Water flea)): 7.7 mg/l  
Exposure time: 48 h  
Test Type: Immobilization  
Method: OECD Test Guideline 202



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GLP: yes

Toxicity to algae/aquatic plants : EC10 (Pseudokirchneriella subcapitata (green algae)): 0.44 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

EC50 (Pseudokirchneriella subcapitata (green algae)): 0.8 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.72 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 0.49 mg/l  
End point: reproduction rate  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): 43 mg/l  
Exposure time: 0.5 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209  
GLP: yes

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

### Components:

#### tert-Butyl perbenzoate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.6 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

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NOEC (Danio rerio (zebra fish)): 0.72 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 11 mg/l  
aquatic invertebrates  
Exposure time: 48 h  
Test Type: Immobilization  
Method: OECD Test Guideline 202  
GLP: yes

NOEC (Daphnia magna (Water flea)): 7.7 mg/l  
Exposure time: 48 h  
Test Type: Immobilization  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic : EC10 (Pseudokirchneriella subcapitata (green algae)): 0.44  
plants  
mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

EC50 (Pseudokirchneriella subcapitata (green algae)): 0.8  
mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.72  
mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

M-Factor (Acute aquatic tox- : 1  
icity)

Toxicity to microorganisms : EC50 (activated sludge): 43 mg/l  
Exposure time: 0.5 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209  
GLP: yes

Toxicity to daphnia and other : EC10: 0.49 mg/l  
aquatic invertebrates (Chron- End point: reproduction rate

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ic toxicity)

Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301D

#### Components:

##### **tert-Butyl perbenzoate:**

Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301D

### 12.3 Bioaccumulative potential

#### Components:

##### **tert-Butyl perbenzoate:**

Partition coefficient: n-octanol/water : log Pow: 3 (25 °C)

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

#### Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation

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(EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life.  
Harmful to aquatic life with long lasting effects.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of wastes in an approved waste disposal facility.  
The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Dispose of in accordance with local regulations.  
Clean container with water.  
Dispose of contents/ container to an approved waste disposal plant.  
Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

## SECTION 14: Transport information

### 14.1 UN number

ADR : UN 3103  
RID : UN 3103  
IMDG : UN 3103  
IATA : UN 3103

### 14.2 UN proper shipping name

ADR : ORGANIC PEROXIDE TYPE C, LIQUID  
(tert-BUTYL PEROXYBENZOATE)  
RID : ORGANIC PEROXIDE TYPE C, LIQUID  
(tert-BUTYL PEROXYBENZOATE)  
IMDG : ORGANIC PEROXIDE TYPE C, LIQUID  
(tert-BUTYL PEROXYBENZOATE)  
IATA : Organic peroxide type C, liquid

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(tert-Butyl peroxybenzoate)

### 14.3 Transport hazard class(es)

|             | Class | Subsidiary risks |
|-------------|-------|------------------|
| <b>ADR</b>  | : 5.2 |                  |
| <b>RID</b>  | : 5.2 |                  |
| <b>IMDG</b> | : 5.2 |                  |
| <b>IATA</b> | : 5.2 | HEAT             |

### 14.4 Packing group

|  |  |
|--|--|
| <b>ADR</b>                               |  |
| Packing group                            | : Not assigned by regulation             |
| Classification Code                      | : P1                                     |
| Labels                                   | : 5.2                                    |
| Tunnel restriction code                  | : (D)                                    |
| <b>RID</b>                               |  |
| Packing group                            | : Not assigned by regulation             |
| Classification Code                      | : P1                                     |
| Hazard Identification Number             | : 539                                    |
| Labels                                   | : 5.2                                    |
| <b>IMDG</b>                              |  |
| Packing group                            | : Not assigned by regulation             |
| Labels                                   | : 5.2                                    |
| EmS Code                                 | : F-J, S-R                               |
| <b>IATA (Cargo)</b>                      |  |
| Packing instruction (cargo aircraft)     | : 570                                    |
| Packing group                            | : Not assigned by regulation             |
| Labels                                   | : Organic Peroxides, Keep Away From Heat |
| <b>IATA (Passenger)</b>                  |  |
| Packing instruction (passenger aircraft) | : 570                                    |
| Packing group                            | : Not assigned by regulation             |
| Labels                                   | : Organic Peroxides, Keep Away From Heat |

### 14.5 Environmental hazards

|                           |       |
|---------------------------|-------|
| <b>ADR</b>                |       |
| Environmentally hazardous | : yes |
| <b>RID</b>                |       |
| Environmentally hazardous | : yes |
| <b>IMDG</b>               |       |
| Marine pollutant          | : yes |

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### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

|   |     |   |
|---|-----|---|
| UK REACH List of restrictions (Annex 17)  | :   | Conditions of restriction for the following entries should be considered:<br>Number on list 3 |
| UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation                             | :   | Not applicable  |
| The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) | :   | Not applicable  |
| Regulation (EC) on substances that deplete the ozone layer  | :   | Not applicable  |
| UK REACH List of substances subject to authorisation (Annex XIV)  | :   | Not applicable  |
| GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation                           | :   | Not applicable  |
| Control of Major Accident Hazards Regulations 2015 (COMAH)  | P6b | SELF-REACTIVE SUBSTANCES<br>AND MIXTURES and ORGANIC<br>PEROXIDES                             |
|   | E1  | ENVIRONMENTAL HAZARDS   |

#### Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

#### The components of this product are reported in the following inventories:

|           |   |   |
|-----------|---|---|
| TCSI (TW) | : | On the inventory, or in compliance with the inventory |
| TSCA (US) | : | All substances listed as active on the TSCA inventory |

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|            |  |
|------------|--|
| AIIC (AU)  | : On the inventory, or in compliance with the inventory  |
| DSL (CA)   | : All components of this product are on the Canadian DSL |
| ENCS (JP)  | : On the inventory, or in compliance with the inventory  |
| ISHL (JP)  | : On the inventory, or in compliance with the inventory  |
| KECI (KR)  | : On the inventory, or in compliance with the inventory  |
| PICCS (PH) | : On the inventory, or in compliance with the inventory  |
| IECSC (CN) | : On the inventory, or in compliance with the inventory  |
| TECI (TH)  | : On the inventory, or in compliance with the inventory  |

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.  
For further information see eSDS.

## SECTION 16: Other information

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative)

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tative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Other information : This safety datasheet only contains information relating to safety and does not replace any product information or product specification.  
These safety instructions also apply to empty packaging which may still contain product residues.  
The hazards on the label also apply to residues in the container.

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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.

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