tort-Butyl Perbenzoate
CAS No 614-45-9

MATERIAL SAFETY DATA SHEET
SDS/MSDS

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

1.1 Product identifiers
Product name : tert-Butyl Perbenzoate
CAS-No. : 614-45-9

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi-10002
INDIA
Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number
Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Organic peroxides (Type C), H242
Skin irritation (Category 2), H315
Skin sensitisation (Category 1), H317
Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word : Danger
Hazard statement(s)
H242 : Heating may cause a fire.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H400 : Very toxic to aquatic life.
Precautionary statement(s)
P220 Keep/Store away from clothing/ combustible materials.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P410 Protect from sunlight.
P420 Store away from other materials.
P411 + P235 Store at temperatures not exceeding 38 °C/ 100 °F. Keep cool.

Supplemental Hazard none

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
Synonyms : tert-Butyl perbenzoate

Formula : C_{11}H_{14}O_{3}
Molecular weight : 194.23 g/mol
CAS-No. : 614-45-9
EC-No. : 210-382-2

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component Classification Concentration
tert-Butyl perbenzoate Org. Perox. C; Skin Irrit. 2; <= 100 %
CAS-No. 614-45-9
EC-No. 210-382-2 Skin Sens. 1; Aquatic Acute 1;
H242, H315, H317, H400
M-Factor - Aquatic Acute: 1

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in original container. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place. Recommended storage temperature 2 - 8 °C Storage class (TRGS 510): Organic Peroxides, Liquid

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: clear, liquid
   Colour: light yellow

b) Odour
   Pungent, unpleasant

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: 9 - 11 °C - OECD Test Guideline 102

f) Initial boiling point and boiling range
   75 - 76 °C at 0.3 hPa - lit.

g) Flash point
   93.4 °C - closed cup

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   No data available

k) Vapour pressure
   3.36 mmHg at 50 °C

l) Vapour density
   6.71 - (Air = 1.0)

m) Relative density
   1.021 g/mL at 25 °C

n) Water solubility
   1.18 g/l - soluble

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

p) Auto-ignition temperature
   No data available

q) Decomposition temperature
   60 °C -

r) Viscosity
   No data available

s) Explosive properties
   No data available

t) Oxidizing properties
   No data available

9.2 Other safety information

Relative vapour density
   6.71 - (Air = 1.0)
SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Reacts violently with: Strong acids, Bases, Reducing agents, Oxidizing agents, Amines

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.
- Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 2,000 mg/kg(tert-Butyl perbenzoate)
LD50 Dermal - Rabbit - > 2,000 mg/kg(tert-Butyl perbenzoate)

Skin corrosion/irritation
Skin - Rabbit(tert-Butyl perbenzoate)
Result: Skin irritation - 5 d

Serious eye damage/eye irritation
Eyes - Rabbit(tert-Butyl perbenzoate)
Result: No eye irritation

Respiratory or skin sensitisation
- Mouse(tert-Butyl perbenzoate)
Result: May cause sensitisation by skin contact.

Germ cell mutagenicity
Hamster(tert-Butyl perbenzoate)
ovary
Result: negative
(tert-Butyl perbenzoate)
Mouse - male and female
Result: negative

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available(tert-Butyl perbenzoate)

Specific target organ toxicity - single exposure
No data available(tert-Butyl perbenzoate)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available(tert-Butyl perbenzoate)
Additional Information
RTECS: SD9450000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (tert-Butyl perbenzoate)

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Organism</th>
<th>LC50/EC50</th>
<th>Time</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>semi-static test</td>
<td>Danio rerio</td>
<td>1.6 mg/l</td>
<td>96 h</td>
<td>tert-Butyl perbenzoate</td>
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<tr>
<td>(OECD Test Guideline 203)</td>
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<td></td>
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</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Organism</th>
<th>EC50</th>
<th>Time</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test</td>
<td>Daphnia magna</td>
<td>11 mg/l</td>
<td>48 h</td>
<td>tert-Butyl perbenzoate</td>
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<tr>
<td>(OECD Test Guideline 202)</td>
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</tbody>
</table>

Toxicity to algae

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Organism</th>
<th>EC50</th>
<th>Time</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test</td>
<td>Pseudokirchneriella subcapitata</td>
<td>0.8 mg/l</td>
<td>72 h</td>
<td>tert-Butyl perbenzoate</td>
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<tr>
<td>(OECD Test Guideline 201)</td>
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</tr>
</tbody>
</table>

12.2 Persistence and degradability

Biodegradability

- Exposure time: 28 d (tert-Butyl perbenzoate)
- Result: 70% - Readily biodegradable

(OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available (tert-Butyl perbenzoate)

12.5 Results of PBT and vPvB 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

Very toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3103
IMDG: 3103
IATA: 3103

14.2 UN proper shipping name

ADR/RID: ORGANIC PEROXIDE TYPE C, LIQUID (tert-BUTYL PEROXYBENZOATE)
IMDG: ORGANIC PEROXIDE TYPE C, LIQUID (tert-BUTYL PEROXYBENZOATE)
IATA: Organic peroxide type C, liquid (tert-Butyl peroxybenzoate)
14.3 Transport hazard class(es)  
ADR/RID: 5.2  
IMDG: 5.2  
IATA: 5.2 (HEAT)

14.4 Packaging group  
ADR/RID:  
IMDG:  
IATA:  

14.5 Environmental hazards  
ADR/RID: no  
IMDG Marine pollutant: no  
IATA: no

14.6 Special precautions for user  
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment  
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H242 Heating may cause a fire.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.

Further information  
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.