

Material Safety Data Sheet

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Version 1.12

According to 91/155/EEC

1 - Product and Company Information

Product Name	TERT-BUTYL HYDROPEROXIDE, T-HYDROSOLUTION, 70 WT. % IN WATER
Product Number	458139
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number	
T-BUTYL HYDROPEROXIDE	75-91-2	200-915-7	None	
Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
TERT-BUTYL HYDROPEROXIDE	>= 70	75-91-2	None	None
WATER	<= 30	7732-18-5	231-791-2	None
Formula	C4H10O2			
Molecular Weight	90.12 AMU			
Synonyms	terc. Butylhydroperoxid (Czech) * Cadox TBH * 1,1-Dimethylethyl hydroperoxide * Hydroperoxide, tert-butyl * Hydroperoxide, 1,1-dimethylethyl- (9CI) * Hydroperoxyde de butyle tertiaire (French) * Perbutyl H * TBHP-70 * Trigonox A-75 (Czech) * Trigonox A-W70			

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Contact with combustible material may cause fire. Flammable.
Harmful in contact with skin and if swallowed. Toxic by
inhalation. Causes burns. May cause sensitization by inhalation
and skin contact. Risk of explosion if heated under confinement.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give
artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for
at least 15 minutes. Remove contaminated clothing and shoes.
Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

5 - Fire Fighting Measures

EXPLOSION DATA

Sensitivity to Mechanical Impact: May be shock-sensitive.

CONDITIONS OF FLAMMABILITY

Vigorously supports combustion.

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Combustible liquid. Contact with other material may cause fire. Emits toxic fumes under fire conditions. May accelerate combustion.

Explosion Hazards: Container explosion may occur under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

ENVIRONMENTAL PRECAUTION(S)

Do not allow material to enter drains or water courses. Avoid contaminating water supply.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place. Keep away from heat and open flame.

Unsuitable: Do not store near, nor allow contact with, clothing and other combustible material.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

9 - Physical and Chemical Properties

Appearance	Color: Colorless Form: Clear liquid	
Property	Value	At Temperature or Pressure
pH	4.3	
BP/BP Range	96.2 °C	
MP/MP Range	-3 °C	760 mmHg
Flash Point	43 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 5.75 % Upper: 10.15 %	
Vapor Pressure	62 mmHg	45 °C
SG/Density	0.9 g/cm3	
Partition Coefficient	N/A	
Viscosity	4.4 Pas	
Vapor Density	2.07 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Soluble.	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Protect from light. Protect from heat.

Materials to Avoid: Acids, Strong reducing agents, Organic materials, Finely powdered metals, Strong acids, Strong bases, Sulfur.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

11 - Toxicological Information

RTECS NUMBER: EQ4900000

ACUTE TOXICITY

LD50
Oral
Rat
370 mg/kg
Remarks: Behavioral:Irritability. Gastrointestinal:Alteration in gastric secretion. Blood: Hemorrhage.

LC50
Inhalation
Rat
500 ppm
4H
Remarks: Lungs, Thorax, or Respiration:Dyspnea.

LD50
Skin
Rat
790 mg/kg

LD50
Intraperitoneal
Rat
87 MG/KG
Remarks: Behavioral:Muscle weakness. Behavioral:Ataxia.

LD50
Oral
Mouse
320 mg/kg
Remarks: Behavioral:Irritability. Gastrointestinal:Alteration in gastric secretion. Blood: Hemorrhage.

LC50
Inhalation
Mouse
350 ppm
4H
Remarks: Lungs, Thorax, or Respiration:Dyspnea.

LD50
Intraperitoneal
Mouse
246 MG/KG

LD50
Skin
Rabbit
460 UL/KG
Remarks: Lungs, Thorax, or Respiration:Cyanosis. Liver:Other changes. Kidney, Ureter, Bladder:Other changes in urine composition.

IRRITATION DATA

Skin
Rabbit
500 mg

Skin
Rabbit
500 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
7 mg

Eyes
Rabbit
100 mg
24H
Remarks: Moderate irritation effect

Eyes
Rabbit
150 mg
1M
Remarks: Rinsed

Eyes
Rabbit
0.07 ml
Remarks: Severe irritation effect

SENSITIZATION

Respiratory: May cause allergic respiratory reaction.
Skin: May cause allergic skin reaction.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.
Skin Absorption: Harmful if absorbed through skin. Readily absorbed through skin.
Eye Contact: Causes burns.
Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Toxic if inhaled.
Ingestion: Harmful if swallowed.

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Rat
107 MG/M3/10W
Inhalation
Cytogenetic analysis

Mouse
107 MG/M3/10W
Inhalation
Cytogenetic analysis

Mouse
17 MG/M3/10W
Inhalation
Dominant lethal test

Mouse
1500 UMOL/KG
Intraperitoneal
5D
Dominant lethal test

Hamster
500 UMOL/L
Cell Type: lung
DNA damage

Hamster
150 UMOL/L
Cell Type: lung
Cytogenetic analysis

Hamster
34 UMOL/L
Cell Type: lung
SLN

12 - Ecological Information

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14 - Transport Information

RID/ADR

UN#: 3109
Class: 5.2
Proper Shipping Name: Organic peroxide type F, liquid

IMDG

UN#: 3109
Class: 5.2
PG: II
Subrisk: 8
Proper Shipping Name: Organic peroxide type F, liquid
Marine Pollutant: No
Severe Marine Pollutant: No
Technical Name: Required

IATA

UN#: 3109

Class: 5.2
Subrisk: 8
Proper Shipping Name: Organic peroxide type F, liquid
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: O T

Oxidizing. Toxic.

R-PHRASES: 8 10 21/22 23 34 42/43 44

Contact with combustible material may cause fire. Flammable.

Harmful in contact with skin and if swallowed. Toxic by inhalation. Causes burns. May cause sensitization by inhalation and skin contact. Risk of explosion if heated under confinement.

S-PHRASES: 3 7 14 16 26 36/37/39 45

Keep in a cool place. Keep container tightly closed. Keep away from combustible material. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16 - Other Information

WARRANTY

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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