

## Chemical Safety Data Sheet MSDS / SDS

## TERT-BUTANOL-D10

Revision Date:2026-05-31 Revision Number:1

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

## Product identifier

Product name : TERT-BUTANOL-D10  
CBnumber : CB4381389  
CAS : 53001-22-2  
EINECS Number : 258-288-0  
Synonyms : TERT-BUTANOL-D10,2-(methyl-d3)propan-1,1,1,3,3,3-d6-2-ol-d

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

## Hazard statements

H335 May cause respiratory irritation

H332 Harmful if inhaled

H319 Causes serious eye irritation

H225 Highly Flammable liquid and vapour

## SECTION 3: Composition/information on ingredients

## Substance

|              |                                                              |
|--------------|--------------------------------------------------------------|
| Product name | : TERT-BUTANOL-D10                                           |
| Synonyms     | : TERT-BUTANOL-D10,2-(methyl-d3)propan-1,1,1,3,3,3-d6-2-ol-d |
| CAS          | : 53001-22-2                                                 |
| EC number    | : 258-288-0                                                  |
| MF           | : C4D10O                                                     |
| MW           | : 84.18                                                      |

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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) and/or in section 11

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

No data available

### 4.4 Notes to physician

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO2) Foam Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

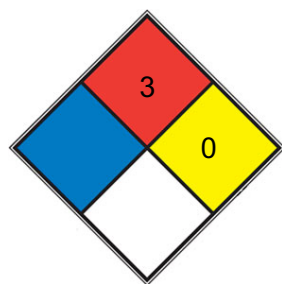
Forms explosive mixtures with air at ambient temperatures.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



■ HEALTH

Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature

■ FIRE 3 conditions . Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))

■ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

□ SPEC.

□ HAZ.

## SECTION 6: Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®).

Dispose of properly. Clean up affected area.

## 6.4 Reference to other sections

For disposal see section 13.

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# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

For precautions see section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

### Storage class

Storage class (TRGS 510): 3: Flammable liquids

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# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

### Ingredients with workplace control parameters

|                                                                                 |                                                                                                                 |                                                                                    |                                                                                      |                                                                                        |                                                                                                                                 |                                                                                                                                        |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| ['Component',<br>'CAS-No.',<br>'Value',<br>'Control<br>parameters',<br>'Basis'] | ['tert-Butanol-d10',<br>'53001-22- 2',<br>'TWA', '100 ppm',<br>'USA. ACGIH<br>Threshold Limit<br>Values (TLV)'] | ['Remarks',<br>'Not<br>classifiable<br>as a human<br>carcinogen',<br>'None, None'] | ['TWA', '100<br>ppm300 mg/m3',<br>'USA. NIOSH<br>Recommended<br>Exposure<br>Limits'] | ['ST', '150<br>ppm450<br>mg/m3', 'USA.<br>NIOSH<br>Recommended<br>Exposure<br>Limits'] | ['TWA', '100 ppm300<br>mg/m3', 'USA.<br>Occupational Exposure<br>Limits (OSHA) - Table Z-<br>1 Limits for Air<br>Contaminants'] | ['STEL', '150 ppm450<br>mg/m3', 'California<br>permissible exposure<br>limits for chemical<br>contaminants (Title 8,<br>Article 107)'] |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

PEL 100 ppm300 California permissible exposure mg/m3 limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Appropriate engineering controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Chloroprene

Minimum layer thickness: 0.65 mm

Break through time: 240 min

Material tested: KCL 720 Camapren®

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|                                                 |                                         |
|-------------------------------------------------|-----------------------------------------|
| a) Physical state                               | liquid                                  |
| b) Color                                        | Colourless                              |
| c) Odor                                         | No data available                       |
| d) Melting point/freezing point                 | No data available                       |
| e) Initial boiling point and boiling range      | 82 °C - lit.                            |
| f) Flammability (solid, gas)                    | No data available                       |
| g) Upper/lower flammability or explosive limits | No data available                       |
| h) Flash point                                  | 11 °C - closed cup                      |
| i) Autoignition temperature                     | No data available                       |
| j) Decomposition temperature                    | No data available                       |
| k) pH                                           | No data available                       |
| l) Viscosity                                    | Viscosity, kinematic: No data available |

|                                          |                                           |
|------------------------------------------|-------------------------------------------|
|                                          | Viscosity, dynamic: No data available     |
| m) Water solubility                      | No data available                         |
| n) Partition coefficient n-octanol/water | No data available                         |
| o) Vapor pressure                        | No data available                         |
| p) Density                               | 0.893 g/cm <sup>3</sup> at 25 °C - lit.   |
| Relative density                         | 0.893 g/mL at 25 °C(lit.)                 |
| q) Relative vapor density                | No data available                         |
| r) Particle characteristics              | No data available                         |
| s) Explosive properties                  | No data available                         |
| t) Oxidizing properties                  | none                                      |
| Solubility                               | Chloroform (Soluble), Methanol (Slightly) |

## 9.2 Other safety information

No data available

# SECTION 10: Stability and reactivity

## 10.1 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Stable

## 10.2 Possibility of hazardous reactions

Violent reactions possible with:

Alkali metals

Alkaline earth metals

Strong acids

Aluminum

Strong oxidizing agents

## 10.3 Conditions to avoid

Warming.

## 10.4 Incompatible materials

No data available

## 10.5 Hazardous decomposition products

In the event of fire: see section 5

# SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - male and female - 3,046 mg/kg (US-EPA)

Remarks: The value is given in analogy to the following substances: tert-Butanol

Acute toxicity estimate Inhalation - 4 h - 11.1 mg/l - vapor (Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

The value is given in analogy to the following substances: tert-Butanol

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg (US-EPA)

Remarks: The value is given in analogy to the following substances: tert-Butanol

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 24 h (Draize Test)

Remarks: The value is given in analogy to the following substances: tert-Butanol

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

Eyes - Rabbit

Result: Causes serious eye irritation.

(US-EPA)

Remarks: The value is given in analogy to the following substances: tert-Butanol

#### **Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative (OECD Test Guideline 406)

Remarks: The value is given in analogy to the following substances: tert-Butanol

#### **Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Remarks: The value is given in analogy to the following substances: tert-ButanolTest Type:

Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Remarks: The value is given in analogy to the following substances: tert-ButanolTest Type:

Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: The value is given in analogy to the following substances: tert-ButanolTest Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 479

Result: negative

Remarks: The value is given in analogy to the following substances: tert-Butanol

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Remarks: The value is given in analogy to the following substances: tert-Butanol

#### **Carcinogenicity**

Classified based on available data. For more details, see section 2

#### **Reproductive toxicity**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Respiratory system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

The value is given in analogy to the following substances: tert-Butanol

Inhalation - May cause drowsiness or dizziness. - Nervous system

Remarks: The value is given in analogy to the following substances: tert-Butanol

#### **Specific target organ toxicity - repeated exposure**

Classified based on available data. For more details, see section 2

#### **Aspiration hazard**

Classified based on available data. For more details, see section 2

### **11.2 Additional Information**

drying, cracking of the skin, Skin irritation

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - > 961 mg/l - 96 h (OECD Test Guideline 203)

Remarks: The value is given in analogy to the following substances: tert-Butanol

Toxicity to daphnia static test EC50 - Daphnia magna (Water flea) - 933 mg/l - 48 h and other aquatic (Directive 67/548/EEC, Annex V, C.2.)  
invertebrates Remarks: The value is given in analogy to the following substances: tert-Butanol

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 976 mg/l - 72 h (OECD Test Guideline 201)

Remarks: The value is given in analogy to the following substances: tert-Butanol

Toxicity to bacteria static test EC50 - Pseudomonas putida - > 10,000 mg/l - 16 h (DIN 38 412 Part 8)

Remarks: The value is given in analogy to the following substances: tert-Butanol static test EC10 - Pseudomonas putida - 6,900 mg/l - 16 h  
(DIN 38 412 Part 8)

Remarks: The value is given in analogy to the following substances: tert-Butanol

Toxicity to daphnia semi-static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - and other aquatic 21 d invertebrates(Chronic (OECD

Test Guideline 211) toxicity) Remarks: The value is given in analogy to the following substances: tert-Butanol semi-static test NOEC - Daphnia  
magna (Water flea) - 100 mg/l - 21 d (OECD Test Guideline 211)

Remarks: The value is given in analogy to the following substances: tert-Butanol

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 56 d

Result: 66 % - Inherently biodegradable.

Remarks: (ECHA)

The value is given in analogy to the following substances: tert-

Butanol

## 12.3 Bioaccumulative potential

No data available

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Endocrine disrupting properties

No data available

## 12.7 Other adverse effects

No data available

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# SECTION 13: Disposal considerations

## 13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

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# SECTION 14: Transport information

## 14.1 UN number

ADR/RID: 1120

IMDG: 1120

IATA-DGR: 1120

## 14.2 UN proper shipping name

ADR/RID: BUTANOLS

IMDG: BUTANOLS

IATA-DGR: Butanols

## 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA-DGR: 3

#### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA-DGR: II

#### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

#### 14.6 Special precautions for user

Based on chemical properties, choose appropriate tools and conditions of transport.

Transporting tools shall be equipped with appropriate and sufficient firefighting equipment and emergency leaking installations. If transporting by road, please go along the specified route.

#### 14.7 Incompatible materials

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## SECTION 15: Regulatory information

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

National regulatory information

Law on the Prevention and Control of Occupational Diseases

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

Measures on the Environmental Administration of New Chemical Substances Registration

Registration/Notification number : B1A222212752

Downstream users need to comply with the conditions of safe use of the chemical, understand the environmental and health hazard and risk management measures identified on the SDS as well as the local/national regulations concerning the chemical.

Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

LD50: Lethal Dose 50%

LC50: Lethal Concentration 50%

EC50: Effective Concentration 50%

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

IMDG: International Maritime Dangerous Goods Code

IATA: International Air Transport Association

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

DOT: US Department of Transportation

NFPA: National Fire Protection Association

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.