

## tert-Butanol

19460-5L

Version 1.6

Revision Date 01.07.2021

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

#### 1.1. Product identifier

Product name : tert-Butanol

SDS-number : 000000020546

Type of product : Substance

Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

Chemical name : 2-methylpropan-2-ol; tert-butyl alcohol

Index-No. : 603-005-00-1

REACH Registration Number : no data available

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

Use of the Substance/Mixture : Laboratory chemicals

Uses advised against : none

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

Company	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	: (49) 5137-999 0	
For further information, please contact:	: PMTEU Product Stewardship: SafetyDataSheet@Honeywell.com	

#### 1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)  
+1-303-389-1414 (Medical)

Country based Poison Control Center : see chapter 15.1

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### SECTION 2: Hazards identification



#### 2.1. Classification of the substance or mixture

##### REGULATION (EC) No 1272/2008

Flammable liquids Category 2  
H225 Highly flammable liquid and vapour.  
Acute toxicity Category 4 - Inhalation  
H332 Harmful if inhaled.  
Eye irritation Category 2  
H319 Causes serious eye irritation.  
Specific target organ toxicity - single exposure Category 3 - Central nervous system  
H336 May cause drowsiness or dizziness.  
Specific target organ toxicity - single exposure Category 3 - Respiratory system  
H335 May cause respiratory irritation.

#### 2.2. Label elements

##### REGULATION (EC) No 1272/2008

Hazard pictograms	:	 												
Signal word	:	Danger												
Hazard statements	:	<table><tr><td>H225</td><td>Highly flammable liquid and vapour.</td></tr><tr><td>H319</td><td>Causes serious eye irritation.</td></tr><tr><td>H332</td><td>Harmful if inhaled.</td></tr><tr><td>H335</td><td>May cause respiratory irritation.</td></tr><tr><td>H336</td><td>May cause drowsiness or dizziness.</td></tr></table>	H225	Highly flammable liquid and vapour.	H319	Causes serious eye irritation.	H332	Harmful if inhaled.	H335	May cause respiratory irritation.	H336	May cause drowsiness or dizziness.		
H225	Highly flammable liquid and vapour.													
H319	Causes serious eye irritation.													
H332	Harmful if inhaled.													
H335	May cause respiratory irritation.													
H336	May cause drowsiness or dizziness.													
Precautionary statements	:	<table><tr><td>P260</td><td>Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.</td></tr><tr><td>P280</td><td>Wear protective gloves/protective clothing/eye protection/face protection.</td></tr><tr><td>P284</td><td>Wear respiratory protection.</td></tr><tr><td>P304 + P340</td><td>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</td></tr><tr><td>P305 + P351 + P338</td><td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td></tr><tr><td>P308 + P313</td><td>IF exposed or concerned: Get medical advice/ attention.</td></tr></table>	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.	P280	Wear protective gloves/protective clothing/eye protection/face protection.	P284	Wear respiratory protection.	P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.													
P280	Wear protective gloves/protective clothing/eye protection/face protection.													
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### 2.3. Other hazards

Vapours may form explosive mixtures with air. Results of PBT and vPvB assessment, see chapter 12.5.

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
2-methylpropan-2-ol; tert-butyl alcohol	75-65-0 603-005-00-1 200-889-7	Flam. Liq. 2; H225 Acute Tox. 4; H332; Inhalation Eye Irrit. 2; H319 STOT SE 3; H336; Central nervous system STOT SE 3; H335; Respiratory system	100 %	

### 3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.  
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:*

First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

#### *Inhalation:*

If inhaled, remove to fresh air. Consult a physician.

#### *Skin contact:*

After contact with skin, wash immediately with plenty of water. Call a physician if irritation develops or persists.

#### *Eye contact:*

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Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

*Ingestion:*

When swallowed, allow water to be drunk. Call a physician immediately.

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

No data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

*Suitable extinguishing media:*

Water spray  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder

*Extinguishing media which shall not be used for safety reasons:*

High volume water jet

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

Vapours are heavier than air and may spread along floors.

Flash back possible over considerable distance.

In case of fire hazardous decomposition products may be produced such as:  
carbon oxides (CO, CO<sub>2</sub>).

### 5.3. Advice for firefighters

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

Do not use a solid water stream as it may scatter and spread fire. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## SECTION 6: Accidental release measures

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

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Use personal protective equipment. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate personnel to safe areas.

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment.

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

Soak up with inert absorbent material.  
Pick for disposal in tightly closed containers

### 6.4. Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### *Advice on safe handling:*

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Exhaust ventilation at the object is necessary.

#### *Advice on protection against fire and explosion:*

Vapours may form explosive mixture with air. Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge. Normal measures for preventive fire protection.

#### *Hygiene measures:*

Separate rooms are required for washing, showering and changing clothes. Take off all contaminated clothing immediately. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke. Avoid contact with the skin and the eyes.

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

#### *Requirements for storage areas and containers:*

Store in original container. Keep container tightly closed in a dry and well-ventilated place. Store in area designed for storage of flammable liquids. Protect from physical damage. Recommended storage temperature: room temperature. (Ambient temperature:  $> 0 < 35^{\circ}\text{C}$ )

### 7.3. Specific end use(s)

no additional data available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
2-methylpropan-2-ol; tert-butyl alcohol	EH40 WEL			Listed
2-methylpropan-2-ol; tert-butyl alcohol	EH40 WEL TWA	308 mg/m3 100 ppm		
2-methylpropan-2-ol; tert-butyl alcohol	EH40 WEL STEL	462 mg/m3 150 ppm		

TWA - Time weighted average

STEL - Short term exposure limit

#### DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
2-methylpropan-2-ol; tert-butyl alcohol	Workers / Acute systemic effects		240 mg/m3	Inhalation	
2-methylpropan-2-ol; tert-butyl alcohol	Workers / Long-term systemic effects		139 mg/kg	Skin contact	
2-methylpropan-2-ol; tert-butyl alcohol	Workers / Long-term systemic effects		49 mg/m3	Inhalation	

Component	Environmental compartment / Value	Remarks
2-methylpropan-2-ol; tert-butyl alcohol	Fresh water: 6,64 mg/l	
2-methylpropan-2-ol; tert-butyl alcohol	Marine water: 0,664 mg/l	
2-methylpropan-2-ol; tert-butyl alcohol	Fresh water sediment: 5,8 mg/kg	

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2-methylpropan-2-ol; tert-butyl alcohol	Soil: 1 mg/kg	
2-methylpropan-2-ol; tert-butyl alcohol	Sewage treatment plant: 690 mg/l	
2-methylpropan-2-ol; tert-butyl alcohol	Oral: 88,7 mg/kg	
2-methylpropan-2-ol; tert-butyl alcohol	Water: 9,33 mg/l	

### 8.2. Exposure controls

#### Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Ensure that eyewash stations and safety showers are close to the workstation location.

#### Engineering measures

Use with local exhaust ventilation.

Prevent vapour buildup by providing adequate ventilation during and after use.

#### Personal protective equipment

##### *Respiratory protection:*

In the case of vapour formation use a respirator with an approved filter.

##### *Hand protection:*

Glove material: Nitrile rubber

Break through time: > 480 min

Glove thickness: 0,4 mm

Camatril® 730

Gloves must be inspected prior to use.

Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions ( e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

##### *Eye protection:*

Safety goggles

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*Skin and body protection:*  
Protective suit

### Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: characteristic
molecular weight	: 74,12 g/mol
Melting point/freezing point	: ca. 25 °C at 1.013,25 hPa
Boiling point/boiling range	: 81 - 83 °C at 1.013 hPa
Flammability	: highly flammable
Upper explosion limit	: 8 %(V)
Lower explosion limit	: 2,4 %(V)
Flash point	: 15 °C at 1.013,25 hPa Method: closed cup
Auto-ignition temperature	: 470 °C Method: DIN 51794
pH	: No data available
Viscosity, kinematic	: 5,72 mm <sup>2</sup> /s at 25 °C Method: OECD Test Guideline 114
Viscosity, kinematic	: 2,23 mm <sup>2</sup> /s at 45 °C



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Method: OECD Test Guideline 114

Water solubility : completely miscible

Partition coefficient: n-octanol/water : log Pow 0,32  
at: 20 °C  
Method: OECD Test Guideline 107

Vapour pressure : ca. 54 hPa  
at 25 °C

Density : 0,79 g/cm<sup>3</sup>  
at 20 °C

Relative vapour density : No data available

### 9.2 Other Information

Evaporation rate : No data available

Viscosity, dynamic : No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

No decomposition if used as directed.

### 10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### 10.4. Conditions to avoid

Heat, flames and sparks.

### 10.5. Incompatible materials

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Strong oxidizing agents  
Strong acids  
Alkali metals

### 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

*Acute oral toxicity:*

LD50

Species: Rat

Value: 3.046 mg/kg

Method: OPPTS 870.1100

*Acute dermal toxicity:*

LD50

Species: Rabbit

Value: > 2.000 mg/kg

Method: OPPTS 870.1200

*Acute inhalation toxicity:*

Classification based on Annex VI of regulation 1272/2008/EC.

*Skin irritation:*

Species: Rabbit

Result: slight irritation

*Eye irritation:*

Species: Rabbit

Result: Irritating to eyes.

*Respiratory or skin sensitisation:*

Species: Guinea pig

Result: Not a skin sensitizer.

Method: OECD Test Guideline 406

*Carcinogenicity:*

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

*Germ cell mutagenicity:*

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

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### *Reproductive toxicity:*

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

### *Aspiration hazard:*

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

### 11.2. Information on other hazards

Endocrine disrupting properties

No data available

### *Other information:*

Solvent removes skin oil from the skin.

Solvent vapours have a narcotic effect if inhaled in high concentrations.

## SECTION 12: Ecological information

### 12.1. Toxicity

#### *Toxicity to fish:*

LC50

Species: Pimephales promelas (fathead minnow)

Value: 6.410 mg/l

Exposure time: 96 h

NOEC

Species: Clarias Gariepinus

Value: 332 mg/l

Exposure time: 120 h

#### *Toxicity to aquatic plants:*

EC50

Species: Desmodesmus subspicatus (green algae)

Value: > 1.000 mg/l

Exposure time: 72 h

EC50

Species: Pseudokirchneriella subcapitata (green algae)

Value: > 976 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

#### *Toxicity to Microorganisms:*

EC10

Species: Pseudomonas putida

Value: 6.900 mg/l

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Exposure time: 16 h  
Method: DIN 38412

*Toxicity to aquatic invertebrates:*

EC50

Species: Daphnia magna (Water flea)

Value: 933 mg/l

Exposure time: 48 h

*Chronic toxicity to aquatic invertebrates:*

NOEC

Species: Daphnia magna (Water flea)

Value: 100 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

### 12.2. Persistence and degradability

*Biodegradability:*

Inherently biodegradable.

### 12.3. Bioaccumulative potential

No data available

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

No data available

### 12.6. Endocrine disrupting properties

No data available

### 12.7. Other adverse effects

Should not be released into the environment.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

*Product:*

Dispose according to legal requirements.

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### *Packaging:*

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

### *Further information:*

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

For personal protection see section 8.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID:1120

IMDG:1120

IATA:1120

### 14.2 UN proper shipping name

ADR/RID:BUTANOLS

IMDG:BUTANOLS

IATA:Butanols

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

### 14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

### 14.6 Special precautions for user

No data available

### 14.7 Maritime transport in bulk according to IMO instruments

No data available

## SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC SEVESO III Listed in Regulation : P5c: FLAMMABLE LIQUIDS	<b>Quantity:</b> 5.000.000 kg <b>Quantity:</b> 50.000.000 kg	

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Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).
Regulation (EC) No. 1907/2006, Annex XIV		Not listed
Regulation (EC) No. 1907/2006, Annex XVII		Not listed

**Poison Control Center**

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+359)29154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	808250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation); +46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

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	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240
	Munich : 089/19240
Latvia	+37167042473

### Other inventory information

US. Toxic Substances Control Act  
On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act  
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)  
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List  
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)  
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)  
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)  
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand  
On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

### Text of H-statements referred to under heading 3

2-methylpropan-2-ol; tert- : H225 Highly flammable liquid and vapour.

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butyl alcohol	H332	Harmful if inhaled.
	H319	Causes serious eye irritation.
	H336	May cause drowsiness or dizziness.
	H335	May cause respiratory irritation.

### Further information

All directives and regulations refer to amended versions.  
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

#### Abbreviations:

EC European Community  
CAS Chemical Abstracts Service  
DNEL Derived no effect level  
PNEC Predicted no effect level  
vPvB Very persistent and very bioaccumulative substance  
PBT Persistent, bioaccumulative und toxic substance

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. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.

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