

According to Regulation (EC) No 1907/2006

# 2-Methyl-2-butanol

Version number: 3.0  
Issued: 2023-11-03  
Replaces SDS: 2022-06-28



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

### 1.1. Product identifier

**Trade name**

2-Methyl-2-butanol

**CAS number**

75-85-4

**EC number**

200-908-9

**Index No.**

603-007-00-2

**Synonyms**

tert-Amyl alcohol, tert-Pentyl alcohol

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

**Relevant identified uses**

Research and development.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

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

**Supplier**

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,  
DL1 4XX Darlington  
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

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+44 (0) 7769276927

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## 1.4. Emergency telephone number

### Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Flammable liquids, hazard category 2  
 Acute toxicity, oral, hazard category 4  
 Acute toxicity, dermal, hazard category 4  
 Acute toxicity, inhalation, hazard category 4  
 Skin irritation, hazard category 2  
 Serious eye damage, hazard category 1  
 Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation  
 Specific Target Organ Toxicity — Single exposure, hazard category 3 - narcosis

#### Hazard statements

H225, H302 + H312 + H332, H315, H318, H335, H336

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H225 Highly flammable liquid and vapour.  
 H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H335 May cause respiratory irritation.  
 H336 May cause drowsiness or dizziness.

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## Precautionary statements

P261 Avoid breathing vapour.  
 P264 Wash skin thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P330 Rinse mouth.  
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
 P302 + P352 IF ON SKIN: Wash with plenty of water/.  
 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.  
 P332 + P313 If skin irritation occurs: Get medical advice/attention.  
 P405 Store locked up.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.

## 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

| Chemical name                     | CAS No.<br>EC No.<br>REACH No.<br>Index No.              | Concentration | Classification   | H-phrases<br>M factor acute<br>M factor chronic                     | Note |
|-----------------------------------|--|---------------|--|---|------|
| 2-methylbutan-2-ol; tert-pentanol | 75-85-4<br>200-908-9<br>01-2119980965-18<br>603-007-00-2 | 100%          | Flam. Liq. 2,<br>Acute Tox. 4 -<br>oral, Acute Tox. 4<br>- dermal, Acute<br>Tox. 4 - inhala-<br>tion, Skin Irrit. 2,<br>Eye Dam. 1,<br>STOT SE 3 -<br>resp. tract irrit.,<br>STOT SE 3 - nar-<br>cosis | H225, H302 +<br>H312 + H332,<br>H315, H318,<br>H335, H336<br>-<br>- | -    |

## Molecular weight

88.15

## Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

#### Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

#### Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

#### Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

#### Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

#### Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

#### Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. High concentrations of vapours may irritate respiratory system and lead to headache, fatigue, nausea and vomiting. Difficulty in breathing.

#### Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

#### Eye contact

May cause blurred vision and serious eye damage.

#### Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.

#### Unsuitable extinguishing media

No specific fire fighting procedure given.

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

Specific hazards: FLAMMABLE.

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

Pay attention to flashback.

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

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

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## SECTION 6: Accidental release measures

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

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

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

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

### 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Preventive handling precautions

For precautions see section 2.2. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Use spark-proof tools and explosion-proof equipment. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

#### General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

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

Store at room temperature. Store in a dry place. Store in a closed container.  
 Light sensitive.

### 7.3. Specific end use(s)

No specific usage precautions noted.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### DNEL/DMEL

| Product/Substance name<br>(CAS No./EC No.)               | Type | Exposure                          | Value                   | Population | Effects  |
|--|------|-----------------------------------|-------------------------|------------|----------|
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | DNEL | Chronic (long term)<br>Inhalation | 267.8 mg/m <sup>3</sup> | Workers    | Local    |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | DNEL | Chronic (long term)<br>Inhalation | 17.2 mg/m <sup>3</sup>  | Workers    | Systemic |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | DNEL | Chronic (long term)<br>Dermal     | 2.5 mg/kg               | Workers    | Systemic |

#### PNEC/PEC

| Product/Substance name<br>(CAS No./EC No.)               | Type | Environmental compartment | Value      |
|--|------|---------------------------|------------|
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Freshwater                | 0.5 mg/l   |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Sediment (freshwater)     | 2.01 mg/kg |
| 2-methylbutan-2-ol; tert-pentanol                        | PNEC | Marine water              | 0.05 mg/l  |

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| Product/Substance name<br>(CAS No./EC No.)               | Type | Environmental compartment | Value       |
|--|------|---------------------------|-------------|
| (75-85-4/200-908-9)                                      |      |                           |             |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Sediment (marine water)   | 0.201 mg/kg |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Intermittent releases     | 5 mg/l      |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Sewage Treatment Plant    | 10 mg/l     |
| 2-methylbutan-2-ol; tert-pentanol<br>(75-85-4/200-908-9) | PNEC | Soil                      | 0.108 mg/kg |

## 8.2. Exposure controls

### Personal Protective Equipment Symbols



#### Eye / face protection

Wear eye protection.

#### Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.4mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

#### Other skin protection

Wash skin thoroughly after handling.

#### Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

#### Environmental exposure controls

Avoid discharge into drains.

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## SECTION 9: Physical and chemical properties

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

#### Physical state

Liquid

#### Colour

Clear colourless liquid

#### Odour

Characteristic.

#### Melting point / freezing point

-12 °C

#### Boiling point or initial boiling point and boiling range

100 - 103 °C

#### Flammability

No data available

#### Lower and upper explosion limit

No data available

#### Flash point

20.5 °C

#### **Method**

CC (Closed cup).

#### Auto-ignition temperature

No data available

#### Decomposition temperature

No data available

#### pH

6

#### **Method**

(118g/l aq.)

#### Kinematic viscosity

No data available

#### Solubility

No data available

#### Partition coefficient n-octanol/water

No data available

#### Vapour pressure

No data available



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## Density and/or relative density

0.805 g/cm<sup>3</sup>

## Relative vapour density

3.04

## Explosive properties

Not explosive

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Forms explosive mixtures with air on intense heating.

### 10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.  
 Light sensitive.

### 10.3. Possibility of hazardous reactions

Violent reactions possible with:  
 Alkali metals.

Risk of ignition or formation of inflammable gases or vapours with: Strong oxidising agents.

### 10.4. Conditions to avoid

Heat, sparks, flames.

### 10.5. Incompatible materials

There are no known reactivity hazards associated with this product.

### 10.6. Hazardous decomposition products

See section 5.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

| Product / Substance name<br>CAS / EC no. | Dose descriptor             | Value / Dose | Test animals |
|--|-----------------------------|--------------|--------------|
| 2-methylbutan-2-ol; tert-                | Acute Toxicity (Oral LD50): | 1,000mg/kg   | Rat          |

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| Product / Substance name<br>CAS / EC no.                 | Dose descriptor               | Value / Dose | Test animals |
|--|-------------------------------|--------------|--------------|
| pentanol<br>75-85-4 / 200-908-9                          |                               |              |              |
| 2-methylbutan-2-ol; tert-pentanol<br>75-85-4 / 200-908-9 | Acute Toxicity (Dermal LD50): | 1,720mg/kg   | Rabbit       |

**Aspiration hazard**

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

**11.2. Information on other hazards**

No data available

**SECTION 12: Ecological information****12.1. Toxicity****Acute fish toxicity**

| Product / Substance name<br>CAS / EC no.                 | Measurement type | Value / Result | Duration of exposure | Species                      |
|--|------------------|----------------|----------------------|------------------------------|
| 2-methylbutan-2-ol; tert-pentanol<br>75-85-4 / 200-908-9 | LC50             | 2,430mg/l      | 48 hours             | Leuciscus idus (Golden orfe) |

**Acute algae toxicity**

| Product / Substance name<br>CAS / EC no.                 | Measurement type | Value / Result | Duration of exposure | Species                               |
|--|------------------|----------------|----------------------|---------------------------------------|
| 2-methylbutan-2-ol; tert-pentanol<br>75-85-4 / 200-908-9 | EC50             | > 500mg/l      | 72 hours             | Desmodesmus subspicatus (green algae) |

**Acute crustacean toxicity**

| Product / Substance name<br>CAS / EC no.                 | Measurement type | Value / Result | Duration of exposure | Species       |
|--|------------------|----------------|----------------------|---------------|
| 2-methylbutan-2-ol; tert-pentanol<br>75-85-4 / 200-908-9 | EC50             | 540mg/l        | 48 hours             | Daphnia magna |

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## 12.2. Persistence and degradability

No data available

## 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

This product does not contain any known or suspected endocrine disruptors.

## 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local regulations.

## SECTION 14: Transport information

### 14.1. UN number

1105

### 14.2. UN proper shipping name

#### ADR / RID / ADN proper shipping name

PENTANOLS

#### IMDG proper shipping name

PENTANOLS

#### IATA proper shipping name

Pentanol

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## 14.3. Transport hazard class(es)

### Label

ADR/RID/ADN



3

IMDG



3

IATA



3

### ADR / RID Class

3

### ADR / RID Classification code

F1

### ADR / RID hazard identification number

33

### IMDG Class

3

### IATA Class

3

### ADN Class

3

### ADN Class Code

F1

## 14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

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## 14.5. Environmental hazards

### IMDG EmS

F-E, S-D

## 14.6. Special precautions for user

Tunnel restriction code: D/E

Transport category: 2

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

IBC Instruction: IBC02

## SECTION 15: Regulatory information

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

#### EU regulations

This SDS is not mandated under REACH Regulation (EC) No 1907/2006 and is provided for information only.

#### National regulations

No data available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

### Phrase meaning

Flam. Liq. 2 - Flammable liquids, hazard category 2

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Acute Tox. 4 - dermal - Acute toxicity, dermal, hazard category 4

Acute Tox. 4 - inhalation - Acute toxicity, inhalation, hazard category 4

Skin Irrit. 2 - Skin irritation, hazard category 2

Eye Dam. 1 - Serious eye damage, hazard category 1

STOT SE 3 - resp. tract irrit. - Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation

STOT SE 3 - narcosis - Specific Target Organ Toxicity — Single exposure, hazard category 3 - narcosis

H225 Highly flammable liquid and vapour.

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.