

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.5

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : 2-Methylisoborneol

Product Number : 743364

Brand : Aldrich

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 2371-42-8

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

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### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Flammable solids, (Category 1) H228: Flammable solid.

Skin irritation, (Category 2) H315: Causes skin irritation.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008**

Pictogram

Signal Word Danger

|                                |                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------|
| Hazard Statements              |                                                                                                |
| H228                           | Flammable solid.                                                                               |
| H315                           | Causes skin irritation.                                                                        |
| Precautionary Statements       |                                                                                                |
| P210                           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P240                           | Ground and bond container and receiving equipment.                                             |
| P241                           | Use explosion-proof electrical/ ventilating/ lighting/ equipment.                              |
| P264                           | Wash skin thoroughly after handling.                                                           |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                  |
| P302 + P352                    | IF ON SKIN: Wash with plenty of water.                                                         |
| Supplemental Hazard Statements | none                                                                                           |

### Reduced Labeling (<= 125 ml)

Pictogram

|                                |        |
|--------------------------------|--------|
| Signal Word                    | Danger |
| Hazard Statements              | none   |
| Precautionary Statements       | none   |
| Supplemental Hazard Statements | 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.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : exo-1,2,7,7-Tetramethylbicyclo[2.2.1]heptan-2-ol

Formula : C<sub>11</sub>H<sub>20</sub>O

Molecular weight : 168,28 g/mol

CAS-No. : 2371-42-8

| Component                                               | Classification                          | Concentration |
|---------------------------------------------------------|-----------------------------------------|---------------|
| <b>exo-1,2,7,7-Tetramethylbicyclo[2.2.1]heptan-2-ol</b> |                                         |               |
| CAS-No. 2371-42-8                                       | Flam. Sol. 1; Skin Irrit. 2; H228, H315 | <= 100 %      |

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

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

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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.

#### 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. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

### 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

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) 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.

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

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

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

Advice for non-emergency personnel: Avoid inhalation of dusts. 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **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 protection against fire and explosion**

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

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.  
For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed. Keep away from heat and sources of ignition.

#### **Storage class**

Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

### **8.2 Exposure controls**

#### **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: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

### **Body Protection**

Flame retardant antistatic protective clothing.

### **Respiratory protection**

required when dusts 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.

Recommended Filter type: Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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## **SECTION 9: Physical and chemical properties**

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

- |                                                 |                                                                    |
|-------------------------------------------------|--------------------------------------------------------------------|
| a) Physical state                               | solid                                                              |
| b) Color                                        | white, off-white                                                   |
| c) Odor                                         | No data available                                                  |
| d) Melting point/freezing point                 | Melting point: 168 °C                                              |
| e) Initial boiling point and boiling range      | No data available                                                  |
| f) Flammability (solid, gas)                    | The substance or mixture is a flammable solid with the category 1. |
| g) Upper/lower flammability or explosive limits | No data available                                                  |
| h) Flash point                                  | Not applicable                                                     |
| i) Autoignition                                 | No data available                                                  |

|    |                                        |                                                                                  |
|----|----------------------------------------|----------------------------------------------------------------------------------|
|    | temperature                            |                                                                                  |
| j) | Decomposition temperature              | No data available                                                                |
| k) | pH                                     | No data available                                                                |
| l) | Viscosity                              | Viscosity, kinematic: No data available<br>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                                | No data available                                                                |
|    | Relative density                       | No data available                                                                |
| q) | Relative vapor density                 | No data available                                                                |
| r) | Particle characteristics               | No data available                                                                |
| s) | Explosive properties                   | No data available                                                                |
| t) | Oxidizing properties                   | No data available                                                                |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 5.200 mg/kg

Remarks: (RTECS)

The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

Inhalation: No data available

LD50 Dermal - Rabbit - > 5.000 mg/kg

Remarks: (RTECS)

The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

#### Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Irritating to skin. - 42 min

(OECD Test Guideline 439)

Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

#### Serious eye damage/eye irritation

Eyes - Chicken eye

Result: No eye irritation - 10 s

(OECD Test Guideline 438)

Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

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: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Gavage

Method: OECD Test Guideline 474

Result: negative

Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information****Endocrine disrupting properties****Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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) - 67,8 mg/l - 96 h<br>Remarks: (ECHA)<br>The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol                                                                                                                                                                                                                                   |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 14,85 mg/l - 48 h (OECD Test Guideline 202)<br>Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol                                                                                                                                                                                                                                  |
| Toxicity to algae                                   | static test ErC50 - Pseudokirchneriella subcapitata - 11,69 mg/l - 72 h (OECD Test Guideline 201)<br>Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol<br><br>static test NOEC - Pseudokirchneriella subcapitata - 3,37 mg/l - 72 h (OECD Test Guideline 201)<br>Remarks: The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol |
| Toxicity to bacteria                                | static test NOEC - activated sludge - 100 mg/l - 28 Days<br>Remarks: (ECHA)<br>The value is given in analogy to the following substances: Exo-1,7,7-trimethylbicyclo[2.2.1]heptan-2-ol                                                                                                                                                                                                                                                           |

**12.2 Persistence and degradability**

|                  |                                                                                                                                                                              |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 28 d<br>Result: 79,8 % - Readily biodegradable.<br>(OECD Test Guideline 301F)<br>Remarks: The value is given in analogy to the following substances: |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**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 Endocrine disrupting properties****Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7 Other adverse effects**

No data available

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**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

No data available

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: 1325

IMDG: 1325

IATA: 1325

**14.2 UN proper shipping name**

ADR/RID: FLAMMABLE SOLID, ORGANIC, N.O.S. (exo-1,2,7,7-Tetramethylbicyclo[2.2.1]heptan-2-ol)

IMDG: FLAMMABLE SOLID, ORGANIC, N.O.S. (exo-1,2,7,7-Tetramethylbicyclo[2.2.1]heptan-2-ol)

IATA: Flammable solid, organic, n.o.s. (exo-1,2,7,7-Tetramethylbicyclo[2.2.1]heptan-2-ol)

**14.3 Transport hazard class(es)**

ADR/RID: 4.1

IMDG: 4.1

IATA: 4.1

**14.4 Packaging group**

ADR/RID: II

IMDG: II

IATA: II

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

Tunnel restriction code : (E)  
Further information : No data available

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

Not applicable for product as supplied.

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### **SECTION 15: Regulatory information**

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

##### **Other regulations**

Take note of Dir 94/33/EC on the protection of young people at work.

#### **15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

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### **SECTION 16: Other information**

#### **Full text of H-Statements**

|      |                         |
|------|-------------------------|
| H228 | Flammable solid.        |
| H315 | Causes skin irritation. |

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## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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