

ALFAAL01491

## Norcamphor

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

|                               |  |
|-------------------------------|--|
| 产品说明:<br>Product Description: | 降樟脑, 98+%<br>Norcamphor  |
| Cat No. :                     | L01491   |
| Synonyms                      | 2-Norbornanone; Bicyclo[2.2.1]heptan-2-one   |
| CAS No                        | 497-38-1   |
| Molecular Formula             | C7 H10 O   |
| Supplier                      | Avocado Research Chemicals Ltd.<br>(Part of Thermo Fisher Scientific)<br>Shore Road, Heysham<br>Lancashire, LA3 2XY,<br>United Kingdom<br>Office Tel: +44 (0) 1524 850506<br>Office Fax: +44 (0) 1524 850608   |
| Emergency Telephone Number    | For information <b>US</b> call: 001-800-227-6701 / <b>Europe</b> call: +32 14 57 52 11<br>Emergency Number <b>US</b> :001-201-796-7100 / <b>Europe</b> : +32 14 57 52 99<br><b>CHEMTREC</b> Tel. No. <b>US</b> :001-800-424-9300 / <b>Europe</b> :001-703-527-3887 |
| E-mail address                | begel.sdsdesk@thermofisher.com   |
| Recommended Use               | Laboratory chemicals.  |
| Uses advised against          | No Information available   |

### SECTION 2. HAZARD IDENTIFICATION

|  |                     |                  |
|--|---------------------|------------------|
| Physical State<br>Solid                | Appearance<br>White | Odor<br>Odorless |
| Emergency Overview<br>Flammable solid. |                     |                  |

#### Classification of the substance or mixture

|                   |            |
|-------------------|------------|
| Flammable solids. | Category 2 |
|-------------------|------------|

#### Label Elements



Signal Word

Warning

Hazard Statements

H228 - Flammable solid

**Precautionary Statements****Prevention**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P240 - Ground and bond container and receiving equipment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

P403 - Store in a well-ventilated place

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

Combustible material.

**Health Hazards**

The product contains no substances which at their given concentration are considered to be hazardous to health.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil. The product evaporates slowly.

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

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component                  | CAS No   | Weight % |
|----------------------------|----------|----------|
| Bicyclo[2.2.1]heptan-2-one | 497-38-1 | >95      |

**SECTION 4. FIRST AID MEASURES****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

**Inhalation**

Remove from exposure, lie down. Remove to fresh air.

**Ingestion**

Clean mouth with water. Get medical attention.

**Most important symptoms and effects**

No information available.

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Flammable. Combustible material.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation.

**Environmental Precautions**

See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Sweep up and shovel into suitable containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Avoid contact with skin and eyes. Do not breathe dust. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools.

**Storage**

Keep in a dry place. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters****Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust MDHS70 General methods for sampling airborne gases and vapours

**Exposure Controls****Engineering Measures**

Use explosion-proof electrical/ventilating/lighting equipment. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

**Personal protective equipment****Eye Protection**

Goggles (European standard - EN 166)

**Hand Protection**

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Nitrile rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Neoprene       | recommendations   |                 |             |                       |
| Natural rubber |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

**Recommended Filter type:** Particulates filter conforming to EN 143**Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

White

**Physical State**

Solid

**Odor**

Odorless

**Odor Threshold**

No data available

**pH**

No information available

**Melting Point/Range**

88 - 91 °C / 190.4 - 195.8 °F

**Softening Point**

No data available

**Boiling Point/Range**

168 - 172 °C / 334.4 - 341.6 °F @ 760 mmHg

**Flash Point**

33 °C / 91.4 °F

**Method -** No information available**Evaporation Rate**

Not applicable

Solid

**Flammability (solid,gas)**

No information available

**Explosion Limits**

No data available

**Vapor Pressure**

No data available

**Vapor Density**

Not applicable

Solid

**Specific Gravity / Density**

No data available

**Bulk Density**

No data available

**Water Solubility**

Insoluble

**Solubility in other solvents**

No information available

**Partition Coefficient (n-octanol/water)****Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

Not applicable

Solid

|                             |                          |
|-----------------------------|--------------------------|
| <b>Explosive Properties</b> | No information available |
| <b>Oxidizing Properties</b> | No information available |

|                          |          |
|--------------------------|----------|
| <b>Molecular Formula</b> | C7 H10 O |
| <b>Molecular Weight</b>  | 110.16   |

**SECTION 10. STABILITY AND REACTIVITY**

|                                 |  |
|---------------------------------|--|
| <b>Stability</b>                | Stable under normal conditions.  |
| <b>Hazardous Reactions</b>      | No information available.  |
| <b>Hazardous Polymerization</b> | Hazardous polymerization does not occur.   |
| <b>Conditions to Avoid</b>      | Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. |
| <b>Materials to avoid</b>       | Strong oxidizing agents.   |

**Hazardous Decomposition Products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**SECTION 11. TOXICOLOGICAL INFORMATION**

|   |   |
|---|---|
| <b>Product Information</b>                    | No acute toxicity information is available for this product   |
| <b>(a) acute toxicity;</b>                    |   |
| <b>(b) skin corrosion/irritation;</b>         | No data available   |
| <b>(c) serious eye damage/irritation;</b>     | No data available   |
| <b>(d) respiratory or skin sensitization;</b> |   |
| <b>Respiratory</b>                            | No data available   |
| <b>Skin</b>                                   | No data available   |
| <b>(e) germ cell mutagenicity;</b>            | No data available   |
| <b>(f) carcinogenicity;</b>                   | No data available   |
|   | There are no known carcinogenic chemicals in this product   |
| <b>(g) reproductive toxicity;</b>             | No data available   |
| <b>(h) STOT-single exposure;</b>              | No data available   |
| <b>(i) STOT-repeated exposure;</b>            | No data available   |
| <b>Target Organs</b>                          | No information available.   |
| <b>(j) aspiration hazard;</b>                 | Not applicable  |
|   | Solid   |
| <b>Other Adverse Effects</b>                  | The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information |

Symptoms / effects, both acute and delayed No information available

**SECTION 12. ECOLOGICAL INFORMATION**

|  |   |
|--|---|
| Ecotoxicity effects  | Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.   |
| Persistence and Degradability<br>Persistence   | Insoluble in water, May persist, based on information available.  |
| Bioaccumulative Potential  | May have some potential to bioaccumulate  |
| Mobility in soil   | Spillage unlikely to penetrate soil The product evaporates slowly Is not likely mobile in the environment due its low water solubility Spillage unlikely to penetrate soil                                    |
| Endocrine Disruptor Information<br>Persistent Organic Pollutant<br>Ozone Depletion Potential | This product does not contain any known or suspected endocrine disruptors<br>This product does not contain any known or suspected substance<br>This product does not contain any known or suspected substance |

**SECTION 13. DISPOSAL CONSIDERATIONS**

|                                     |  |
|-------------------------------------|--|
| Waste from Residues/Unused Products | Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. |
| Contaminated Packaging              | Dispose of this container to hazardous or special waste collection point.  |
| Other Information                   | Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.  |

**SECTION 14. TRANSPORT INFORMATION****Road and Rail Transport**

|                         |                                  |
|-------------------------|----------------------------------|
| UN-No                   | UN1325                           |
| Proper Shipping Name    | Flammable solid, organic, n.o.s. |
| Technical Shipping Name | Bicyclo[2.2.1]heptan-2-one       |
| Hazard Class            | 4.1                              |
| Packing Group           | II                               |

**IMDG/IMO**

|                         |                                  |
|-------------------------|----------------------------------|
| UN-No                   | UN1325                           |
| Proper Shipping Name    | Flammable solid, organic, n.o.s. |
| Technical Shipping Name | Bicyclo[2.2.1]heptan-2-one       |
| Hazard Class            | 4.1                              |
| Packing Group           | II                               |

**IATA**

|                         |                                  |
|-------------------------|----------------------------------|
| UN-No                   | UN1325                           |
| Proper Shipping Name    | Flammable solid, organic, n.o.s. |
| Technical Shipping Name | Bicyclo[2.2.1]heptan-2-one       |

**Hazard Class** 4.1  
**Packing Group** II

**Special Precautions for User** No special precautions required

## SECTION 15. REGULATORY INFORMATION

### International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

| Component                  | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | TCSI | IECSC | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL |
|----------------------------|---|---|------|-------|-----------|------|-----|-------|------|------|------|------|
| Bicyclo[2.2.1]heptan-2-one | -   | -                                       | X    | -     | 207-846-1 | X    | -   | -     | -    |      | X    | -    |

### National Regulations

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 22-Apr-2024  
**Revision Summary** New emergency telephone response service provider.

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

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BCF - Bioconcentration factor

VOC - (Volatile Organic Compound)

**Key literature references and sources for data**<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

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**End of Safety Data Sheet**