

ALFAAA17064

## Cycloheptatriene

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

**产品说明:** 环庚三烯  
**Product Description:** Cycloheptatriene

**Cat No. :** A17064  
**CAS No** 544-25-2

**Supplier** Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
Shore Road, Heysham  
Lancashire, LA3 2XY,  
United Kingdom  
Office Tel: +44 (0) 1524 850506  
Office Fax: +44 (0) 1524 850608

**Emergency Telephone Number** For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**: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**  
Liquid

**Appearance**  
No information available

**Odor**  
No information available

**Emergency Overview**

Highly flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Harmful to aquatic life with long lasting effects. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

#### Classification of the substance or mixture

|  |            |
|--|------------|
| Flammable liquids.                                 | Category 2 |
| Aspiration Toxicity                                | Category 1 |
| Acute Oral Toxicity                                | Category 3 |
| Acute Dermal Toxicity                              | Category 3 |
| Skin Corrosion/Irritation                          | Category 2 |
| Serious Eye Damage/Eye Irritation                  | Category 2 |
| Specific target organ toxicity - (single exposure) | Category 3 |
| Chronic aquatic toxicity                           | Category 3 |

#### Label Elements

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**Signal Word****Danger****Hazard Statements**

H225 - Highly flammable liquid and vapor  
 H412 - Harmful to aquatic life with long lasting effects  
 H304 - May be fatal if swallowed and enters airways  
 H315 - Causes skin irritation  
 H319 - Causes serious eye irritation  
 H335 - May cause respiratory irritation  
 H301 + H311 - Toxic if swallowed or in contact with skin

**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  
 P242 - Use non-sparking tools  
 P243 - Take action to prevent static discharges  
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P271 - Use only outdoors or in a well-ventilated area  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor  
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
 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  
 P312 - Call a POISON CENTER or doctor if you feel unwell  
 P330 - Rinse mouth  
 P331 - Do NOT induce vomiting  
 P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
 P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
 P405 - Store locked up

**Disposal**

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

**Physical and Chemical Hazards**

Vapors may cause flash fire or explosion. Highly flammable.

**Health Hazards**

Toxic if swallowed. Toxic in contact with skin. Aspiration hazard if swallowed - can enter lungs and cause damage. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

**Environmental hazards**

Harmful to aquatic life with long lasting effects. Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility. Spillage unlikely to penetrate soil. The product is insoluble and floats on water. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

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

| Component | CAS No | Weight % |
|-----------|--------|----------|
|-----------|--------|----------|

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|                  |          |       |
|------------------|----------|-------|
| Cycloheptatriene | 544-25-2 | <=100 |
|------------------|----------|-------|

### SECTION 4. FIRST AID MEASURES

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Risk of serious damage to the lungs (by aspiration).

**Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.

**Most important symptoms and effects**

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

**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 mist may be used to cool closed containers.

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

No information available.

**Specific Hazards Arising from the Chemical**

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**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. Thermal decomposition can lead to release of irritating gases and vapors.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions**

**Cycloheptatriene**

Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Refer to protective measures listed in Sections 8 and 13.

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

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Storage**

Keep refrigerated. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

**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. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

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

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. 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 recommendations | -               | EN 374      | (minimum requirement) |
| Neoprene       |                                   |                 |             |                       |
| 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.

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Remove gloves with care avoiding skin contamination.

|                                   |   |
|-----------------------------------|---|
| <b>Skin and body protection</b>   | Long sleeved clothing   |
| <b>Respiratory Protection</b>     | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.<br>To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly   |
| <b>Large scale/emergency use</b>  | Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced<br><b>Recommended Filter type:</b> conforming to EN14387 Organic gases and vapours filter Type A Brown  |
| <b>Small scale/Laboratory use</b> | 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.<br><b>Recommended half mask:-</b> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141<br>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

|  |                          |   |
|--|--------------------------|---|
| <b>Appearance</b>                              |                          |   |
| <b>Physical State</b>                          | Liquid                   |   |
| <b>Odor</b>                                    | No information available |   |
| <b>Odor Threshold</b>                          | No data available        |   |
| <b>pH</b>                                      | No information available |   |
| <b>Melting Point/Range</b>                     | -80 °C / -112 °F         |   |
| <b>Softening Point</b>                         | No data available        |   |
| <b>Boiling Point/Range</b>                     | 117 °C / 242.6 °F        |   |
| <b>Flash Point</b>                             | 5 °C / 41 °F             | <b>Method -</b> No information available    |
| <b>Evaporation Rate</b>                        | No data available        |   |
| <b>Flammability (solid,gas)</b>                | Not applicable           | Liquid                                      |
| <b>Explosion Limits</b>                        | No data available        |   |
| <b>Vapor Pressure</b>                          | No data available        |   |
| <b>Vapor Density</b>                           | No data available        | (Air = 1.0)                                 |
| <b>Specific Gravity / Density</b>              | 0.95 g/cm <sup>3</sup>   | @ 20 °C                                     |
| <b>Bulk Density</b>                            | Not applicable           | Liquid                                      |
| <b>Water Solubility</b>                        | Immiscible               |   |
| <b>Solubility in other solvents</b>            | No information available |   |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |   |
| <b>Autoignition Temperature</b>                | No data available        |   |
| <b>Decomposition Temperature</b>               | No data available        |   |
| <b>Viscosity</b>                               | No data available        |   |
| <b>Explosive Properties</b>                    |                          | Vapors may form explosive mixtures with air |
| <b>Oxidizing Properties</b>                    | No information available |   |
| <b>Refractive index</b>                        | 1.5211                   |   |

### SECTION 10. STABILITY AND REACTIVITY

**Stability** Stable under normal conditions.

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|                                 |   |
|---------------------------------|---|
| <b>Hazardous Reactions</b>      | None under normal processing.                                     |
| <b>Hazardous Polymerization</b> | No information available.   |
| <b>Conditions to Avoid</b>      | Keep away from open flames, hot surfaces and sources of ignition. |
| <b>Materials to avoid</b>       | No information available.   |

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

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Product Information

**(a) acute toxicity;**

| Component        | LD50 Oral               | LD50 Dermal | LC50 Inhalation |
|------------------|-------------------------|-------------|-----------------|
| Cycloheptatriene | LD50 = 57 mg/kg ( Rat ) |             |                 |

**(b) skin corrosion/irritation;** Category 2

**(c) serious eye damage/irritation;** Category 2

**(d) respiratory or skin sensitization;**

|                    |                   |
|--------------------|-------------------|
| <b>Respiratory</b> | No data available |
| <b>Skin</b>        | No data available |

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;** No data available

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** Category 3

|                                |                    |
|--------------------------------|--------------------|
| <b>Results / Target organs</b> | Respiratory system |
|--------------------------------|--------------------|

**(i) STOT-repeated exposure;** No data available

|                      |                           |
|----------------------|---------------------------|
| <b>Target Organs</b> | No information available. |
|----------------------|---------------------------|

**(j) aspiration hazard;** Category 1

**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

### 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.

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|  |  |
|--|--|
| <b>Persistence and Degradability</b>   |  |
| <b>Persistence</b>                     | Immiscible with water, Persistence is unlikely, based on information available.  |
| <b>Bioaccumulative Potential</b>       | May have some potential to bioaccumulate   |
| <b>Mobility in soil</b>                | Spillage unlikely to penetrate soil The product is insoluble and floats on water The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces Is not likely mobile in the environment due its low water solubility Will likely be mobile in the environment due to its volatility |
| <b>Endocrine Disruptor Information</b> | This product does not contain any known or suspected endocrine disruptors  |
| <b>Persistent Organic Pollutant</b>    | This product does not contain any known or suspected substance   |
| <b>Ozone Depletion Potential</b>       | This product does not contain any known or suspected substance   |

### SECTION 13. DISPOSAL CONSIDERATIONS

|  |  |
|--|--|
| <b>Waste from Residues/Unused Products</b> | 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.   |
| <b>Contaminated Packaging</b>              | Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition. |
| <b>Other Information</b>                   | Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.                                  |

### SECTION 14. TRANSPORT INFORMATION

#### Road and Rail Transport

|                                |                  |
|--------------------------------|------------------|
| <b>UN-No</b>                   | UN2603           |
| <b>Proper Shipping Name</b>    | CYCLOHEPTATRIENE |
| <b>Hazard Class</b>            | 3                |
| <b>Subsidiary Hazard Class</b> | 6.1              |
| <b>Packing Group</b>           | II               |

#### IMDG/IMO

|                                |                  |
|--------------------------------|------------------|
| <b>UN-No</b>                   | UN2603           |
| <b>Proper Shipping Name</b>    | CYCLOHEPTATRIENE |
| <b>Hazard Class</b>            | 3                |
| <b>Subsidiary Hazard Class</b> | 6.1              |
| <b>Packing Group</b>           | II               |

#### IATA

|                                |                  |
|--------------------------------|------------------|
| <b>UN-No</b>                   | UN2603           |
| <b>Proper Shipping Name</b>    | CYCLOHEPTATRIENE |
| <b>Hazard Class</b>            | 3                |
| <b>Subsidiary Hazard Class</b> | 6.1              |
| <b>Packing Group</b>           | II               |

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <b>Special Precautions for User</b> | No special precautions required |
|-------------------------------------|---------------------------------|

### SECTION 15. REGULATORY INFORMATION

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### 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 |
|------------------|---|---|------|-------|-----------|------|-----|-------|------|------|------|------|
| Cycloheptatriene | X   | X                                       | X    | -     | 208-866-3 | -    | -   | X     | X    | X    | X    | -    |

### National Regulations

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 03-May-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

**BCF** - Bioconcentration factor

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

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

**ATE** - Acute Toxicity Estimate

**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



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### Disclaimer

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

**End of Safety Data Sheet**