

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

**Perihalan Produk:** Citral, cis + trans  
**Product Description:** Citral, cis + trans  
**Cat No. :** A16169  
**Synonyms** Geranial; 3,7-Dimethyl-2,6-octadienal; Neral  
**CAS No** 5392-40-5  
**Molecular Formula** C10 H16 O

**Relevant identified uses of the substance or mixture and uses advised against**

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

**Company** Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**Supplier**

**E-mail address** Enquiry.my@thermofisher.com

**Emergency Telephone Number** Tel: +03-5525 7888  
 CHEMTREC Malaysia 1-800-815-308 (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) +(60)-327884561 (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

|                                   |                   |
|-----------------------------------|-------------------|
| Skin Corrosion/Irritation         | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation | Category 2 (H319) |
| Skin Sensitization                | Category 1 (H317) |

**Label Elements**

**Signal Word**
**Warning**

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## Hazard Statements

H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation

## Precautionary Statements

### Prevention

P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

### Response

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention  
P337 + P313 - If eye irritation persists: Get medical advice/attention  
P362 + P364 - Take off contaminated clothing and wash it before reuse

### Storage

P403 - Store in a well-ventilated place

### Disposal

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

## Other Hazards

Toxicity to Soil Dwelling Organisms  
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 % |
|-----------|-----------|----------|
| Citral    | 5392-40-5 | > 95     |

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

#### General Advice

If symptoms persist, call a physician.

#### 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 plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

#### Ingestion

Clean mouth with water and drink afterwards plenty of water.

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

#### 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.

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

May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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

### Notes to Physician

Treat symptomatically. Symptoms may be delayed.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

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

No information available.

### Special hazards arising from the substance or mixture

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

### Hazardous Combustion Products

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

### Advice for fire-fighters

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, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment as required.

### Environmental precautions

Do not flush into surface water or sanitary sewer system.

### Methods and Material for Containment and Cleaning Up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation.

### Conditions for Safe Storage, Including any Incompatibilities

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Keep container tightly closed in a dry and well-ventilated place.

## Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

| Component | Malaysia | ACGIH TLV          | OSHA PEL |
|-----------|----------|--------------------|----------|
| Citral    |          | TWA: 5 ppm<br>Skin |          |

### Exposure Controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. 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

#### Hand Protection

Protective gloves

#### Skin and body protection

Long sleeved clothing

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 compatability, 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.

#### Respiratory Protection

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

#### Recommended Filter type:

Organic gases and vapours filter Type A Brown conforming to EN14387

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

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

Prevent product from entering drains Do not allow material to contaminate ground water system

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### Appearance

Yellow

#### Physical State

Liquid

#### Odor

Fresh

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|   |                          |  |
|---|--------------------------|--|
| Odor Threshold                          | No data available        |  |
| pH                                      | No information available |  |
| Melting Point/Range                     | < -10 °C / < 14 °F       |  |
| Softening Point                         | No data available        |  |
| Boiling Point/Range                     | 229 °C / 444.2 °F        | @ 760 mmHg                               |
| Flash Point                             | 101 °C / 213.8 °F        | <b>Method</b> - No information available |
| Evaporation Rate                        | No data available        |  |
| Flammability (solid,gas)                | Not applicable           | Liquid                                   |
| Explosion Limits                        | No data available        |  |
| Vapor Pressure                          | 0.2 mmHg @ 200 °C        |  |
| Vapor Density                           | 5                        | (Air = 1.0)                              |
| Specific Gravity / Density              | 0.889                    |  |
| Bulk Density                            | Not applicable           | Liquid                                   |
| Water Solubility                        | practically insoluble    |  |
| Solubility in other solvents            | No information available |  |
| Partition Coefficient (n-octanol/water) |                          |  |
| Component                               | <b>log Pow</b>           |  |
| Citral                                  | 2.76                     |  |
| Autoignition Temperature                | No data available        |  |
| Decomposition Temperature               | No data available        |  |
| Viscosity                               | No data available        |  |
| Explosive Properties                    | No information available |  |
| Oxidizing Properties                    | No information available |  |
| Molecular Formula                       | C10 H16 O                |  |
| Molecular Weight                        | 152.24                   |  |

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

### Chemical Stability

No information available.

### Possibility of Hazardous Reactions

|                          |                               |
|--------------------------|-------------------------------|
| Hazardous Polymerization | No information available.     |
| Hazardous Reactions      | None under normal processing. |

### Conditions to Avoid

Incompatible products.

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## Incompatible Materials

Strong acids. Strong bases. Oxidizing agent.

## Hazardous Decomposition Products

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

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

**Product Information** No acute toxicity information is available for this product

**(a) acute toxicity;**

**Oral**

Based on available data, the classification criteria are not met

**Dermal**

Based on available data, the classification criteria are not met

**Inhalation**

Based on available data, the classification criteria are not met

| Component | LD50 Oral                 | LD50 Dermal                  | LC50 Inhalation |
|-----------|---------------------------|------------------------------|-----------------|
| Citral    | LD50 = 4960 mg/kg ( Rat ) | LD50 = 2250 mg/kg ( Rabbit ) | -               |

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

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

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

**Respiratory**

No data available

**Skin**

Category 1

May cause sensitization by skin contact

**(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;** No data available

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

**Target Organs**

No information available.

**(j) aspiration hazard;** No data available

**Symptoms / effects, both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.  
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity effects** The product contains following substances which are hazardous for the environment. Contains a substance which is: Toxic to aquatic organisms.

| Component | Freshwater Fish | Water Flea                             | Freshwater Algae   | Microtox                |
|-----------|-----------------|--|--|-------------------------|
| Citral    |                 | EC50: = 7 mg/L, 48h<br>(Daphnia magna) | EC50: = 19 mg/L, 96h<br>(Desmodesmus subspicatus)<br>EC50: = 16 mg/L, 72h<br>(Desmodesmus subspicatus) | EC50 = 2100 mg/L 30 min |

**Persistence and degradability**  
**Persistence** Persistence is unlikely.  
**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative potential** Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|-----------|---------|-------------------------------|
| Citral    | 2.76    | No data available             |

**Mobility in soil** The product is water soluble, and may spread in water systems. Spillage unlikely to penetrate soil. The product is insoluble and floats on water. . Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment due its low water solubility. Highly mobile in soils.

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Other adverse effects** No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**  
**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** Do not flush to sewer 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

**IMDG/IMO** Not regulated

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**Road and Rail Transport** Not regulated

**IATA** Not regulated

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

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories** X = listed

| Component | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | IECSC | AICS | KECL     |
|-----------|-----------|------|-----|-------|------|------|-------|------|----------|
| Citral    | 226-394-6 | X    | X   | X     | X    | X    | X     | X    | KE-11579 |

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### 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

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

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

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

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

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

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

**BCF** - Bioconcentration factor

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

**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

**Prepared By**  
**Revision Date**

Health, Safety and Environmental Department  
24-Mar-2025

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Revision Summary

Not applicable.

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## 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**