

## SAFETY DATA SHEET

(GHS, Appendix 4)

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

#### 1.1. Product identifier

Product name : Citronellal

EC N° : 203-376-6

CAS N° : 106-23-0

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

Industrial-grade aromatic raw material, not intended for retail sale

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

Registered company name : Aromatics Original Material Co., Ltd.

Address : 3/8 1st floor Bangwaek Rd, Bangpai, Bangkae, Bangkok 10160 Thailand.

### SECTION 2 : HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

##### GHS compliant.

Flammable liquid, Category 4 (Flam. Liq. 4, H227).

Acute oral toxicity, Category 5 (Acute Tox. 5, H303).

Acute dermal toxicity, Category 5 (Acute Tox. 5, H313).

Skin irritation, Category 2 (Skin Irrit. 2, H315).

Eye irritation, Category 2A (Eye Irrit. 2A, H319).

Skin sensitisation, Category 1 (Skin Sens. 1, H317).

Hazardous to the aquatic environment - Acute hazard, Category 2 (Aquatic Acute 2, H401).

#### 2.2. Label elements

##### GHS compliant.

Hazard pictograms :



GHS07

Signal Word :

WARNING

Product identifiers (list of classified components) :

CAS 106-23-0

CITRONELLAL

Hazard statements :

H227

Combustible liquid.

H303 + H313	May be harmful if swallowed or in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H401	Toxic to aquatic life.
Precautionary statements - Prevention :	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/ ...
Precautionary statements - Response :	
P302 + P352	IF ON SKIN: Wash with plenty of 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.
P312	Call a POISON CENTER/doctor/... if you feel unwell.
Precautionary statements - Storage :	
P403 + P235	Store in a well-ventilated place. Keep cool.
Precautionary statements - Disposal :	
P501	Dispose of contents/container in accordance with local regulation.

### 2.3. Other hazards

## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

#### Composition :

Identification	Classification GHS	Note	%
CAS: 106-23-0 EC: 203-376-6 REACH: 01-2119474900-37-0000 CITRONELLAL	GHS07 Wng Flam. Liq. 4, H227 Acute Tox. 5, H303 Acute Tox. 5, H313 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Irrit. 2, H319 Aquatic Acute 2, H401		100%

## SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.  
NEVER induce swallowing by an unconscious person.

### 4.1. Description of first aid measures

#### In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.  
If there is any redness, pain or visual impairment, consult an ophthalmologist.

#### In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.  
Remove any soiled or splashed clothing immediately.  
Watch out for any remaining product between skin and clothing, watches, shoes, etc.  
In the event of an allergic reaction, seek medical attention.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

**In the event of swallowing :**

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.

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

No data available.

**SECTION 5 : FIREFIGHTING MEASURES**

Flammable.

Combustible liquid.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

**5.1. Extinguishing media**

Keep packages near the fire cool, to prevent pressurised containers from bursting.

**Suitable methods of extinction**

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive

Prevent the effluent of fire-fighting measures from entering drains or waterways.

**Unsuitable methods of extinction**

In the event of a fire, do not use :

- water jet

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

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)

**5.3. Advice for firefighters**

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Consult the safety measures listed under headings 7 and 8.

**For non first aid worker**

Avoid any contact with the skin and eyes.

**For first aid worker**

First aid workers will be equipped with suitable personal protective equipment (See section 8).

**6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures  
Use drums to dispose of collected waste in compliance with current regulations (see section 13).

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

Clean preferably with a detergent, do not use solvents.

### 6.4. Reference to other sections

No data available.

## SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this substance.

### 7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Remove contaminated clothing and protective equipment before entering eating areas.

#### Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

#### Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid skin and eye contact with this substance.

Packages which have been opened must be reclosed carefully and stored in an upright position.

#### Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

Never open the packages under pressure.

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

No data available.

#### Storage

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

Keep away from food and drink, including those for animals.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

#### Packaging

Always keep in packaging made of an identical material to the original.

### 7.3. Specific end use(s)

No data available.

## SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

No data available.

### 8.2. Exposure controls

#### Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

#### - Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

#### - Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Butyl Rubber (Isobutylene-isoprene copolymer)

#### - Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

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

No data available.

#### Physical state

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Physical state :	Fluid liquid.
<b>Colour</b>	
Unspecified	
<b>Odour</b>	
Odour threshold :	Not stated.
<b>Melting point</b>	
Melting point/melting range :	Not specified.
<b>Freezing point</b>	
Freezing point / Freezing range :	Not stated.
<b>Boiling point or initial boiling point and boiling range</b>	
Boiling point/boiling range :	Not specified.
<b>Flammability</b>	
Flammability (solid, gas) :	Not stated.
<b>Lower and upper explosion limit</b>	
Explosive properties, lower explosivity limit (%) :	Not stated.
Explosive properties, upper explosivity limit (%) :	Not stated.
<b>Flash point</b>	
Flash Point :	77.00 °C.
	Method for determining the flash point: ASTM D 93-15 (Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester).
<b>Auto-ignition temperature</b>	
Self-ignition temperature :	Not specified.
<b>Decomposition temperature</b>	
Decomposition point/decomposition range :	Not specified.
<b>pH</b>	
pH :	Not relevant.
pH (aqueous solution) :	Not stated.
<b>Kinematic viscosity</b>	
Viscosity :	Not stated.
<b>Solubility</b>	
Water solubility :	Insoluble.
Fat solubility :	Not stated.
<b>Partition coefficient n-octanol/water (log value)</b>	
Partition coefficient: n-octanol/water :	Not stated.
<b>Vapour pressure</b>	
Vapour pressure (50°C) :	Not stated.
<b>Density and/or relative density</b>	

Density : 0,830-0,880@20°C  
Method for determining the density :  
NF ISO 279:1999 (T75-111)

**Relative vapour density**

Vapour density : Not stated.

**9.2. Other information**

Index of refraction : 1,444-1,450@20°C  
Method of determining the refractive index :  
NF ISO 280:1999 (T75-112)

**9.2.1. Information with regard to physical hazard classes**

No data available.

**9.2.2. Other safety characteristics**

No data available.

**SECTION 10 : STABILITY AND REACTIVITY****10.1. Reactivity**

No data available.

**10.2. Chemical stability**

This substance is stable under the recommended handling and storage conditions in section 7.

**10.3. Possibility of hazardous reactions**

When exposed to high temperatures, the substance can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

**10.4. Conditions to avoid**

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- flames and hot surfaces

**10.5. Incompatible materials**

No data available.

**10.6. Hazardous decomposition products**

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)

**SECTION 11 : TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects**

Exposure to vapours from this solvent in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.

May be harmful if swallowed.

May be harmful in contact with skin.

May cause irreversible damage to the skin; namely inflammation of the skin or the formation of erythema and eschar or oedema following exposure up to four hours.

Repeated or prolonged contact with the substance may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.  
Splashes in the eyes may cause irritation and reversible damage  
May cause an allergic reaction by skin contact.

#### 11.1.1. Substances

##### Acute toxicity :

CITRONELLAL (CAS: 106-23-0)

Oral route :

LD50 = 2500 mg/kg bodyweight/day

#### 11.1.2 Complex substance

No toxicological data available for the substances.

#### 11.2. Information on other hazards

##### Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 64-17-5 : IARC Group 1 : The agent is carcinogenic to humans.

### SECTION 12 : ECOLOGICAL INFORMATION

Toxic to aquatic organisms.

The product must not be allowed to run into drains or waterways.

#### 12.1. Toxicity

##### 12.1.2 Complex substance

No aquatic toxicity data available for the substances.

#### 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

No data available.

#### 12.7. Other adverse effects

No data available.

### SECTION 13 : DISPOSAL CONSIDERATIONS

The appropriate waste management of the substance and/or its container must be determined in accordance with local regulations.

#### 13.1. Waste treatment methods

Do not pour into drains or waterways.

##### Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

##### Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

### SECTION 14 : TRANSPORT INFORMATION



Exempt from transport classification and labelling.

**14.1. UN number**

-

**14.2. UN proper shipping name**

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**14.3. Transport hazard class(es)**

-

**14.4. Packing group**

-

**14.5. Environmental hazards**

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**14.6. Special precautions for user**

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**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

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**SECTION 15 : REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

The following regulations have been used:

- Globally Harmonized System of Classification and Labelling of Chemicals (GHS), review no. 8 (2019)

**Container information:**

No data available.

**Particular provisions :**

No data available.

**15.2. Chemical safety assessment**

No data available.

**SECTION 16 : OTHER INFORMATION**

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

**Wordings of the phrases mentioned in section 3 :**

H227	Combustible liquid.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H401	Toxic to aquatic life.

**Abbreviations and acronyms :**

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

STEL : Short-term exposure limit

TWA : Time Weighted Averages

TMP : French Occupational Illness table

TLV : Threshold Limit Value (exposure)

AEV : Average Exposure Value.

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

GHS07 : Exclamation mark

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.