

## SAFETY DATA SHEET

Preparation Date: 03/12/2019

Revision date 03/12/2019

Revision Number: G1

### 1. IDENTIFICATION

#### Product identifier

**Product code:** C2233  
**Product Name:** CITRAL

#### Other means of identification

**Synonyms:** 3,7-Dimethyl-2,6-octadienal  
**CAS #:** 5392-40-5  
**RTECS #** RG5075000  
**CI#:** Not available

#### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>  
**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Tom Tyner (USA - West Coast)  
**Contact Person:** Ibad Tirmiz (USA - East Coast)

### 2. HAZARDS IDENTIFICATION

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Skin sensitization	Category 1

#### Label elements

##### **Warning**

##### **Hazard statements**

Causes skin irritation  
 May cause an allergic skin reaction



**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful if swallowed  
May be harmful in contact with skin  
Toxic to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing must not be allowed out of the workplace

**Precautionary Statements - Response**

IF ON SKIN: Wash with plenty of water  
Take off contaminated clothing and wash it before reuse  
If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight-%
Citral	5392-40-5	100

**4. FIRST AID MEASURES**

**First aid measures**

**General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops.

**Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention if irritation occurs.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

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

**Symptoms** Causes skin irritation  
Somnolence  
May cause coughing and shortness of breath

May cause an allergic skin reaction  
Headache  
Nausea  
Vomiting

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

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray, mist, or foam.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

**Specific hazards** May be combustible at high temperatures. May be ignited by heat, sparks or flames.

**Special Protective Actions for Firefighters**

**Specific Methods:** No information available

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**6. ACCIDENTAL RELEASE MEASURES**

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

**Personal Precautions:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE**

## Precautions for safe handling

### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

## Conditions for safe storage, including any incompatibilities

### **Technical Measures/Storage Conditions:**

Keep refrigerated. Store at 2-8 deg. C. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials.

### **Incompatible Materials:**

Strong oxidizing agents  
Strong acids  
Strong bases  
Alkalis

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### Control parameters

#### **National occupational exposure limits**

##### **United States**

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Citral	5392-40-5	None	None	5 ppm TWA inhalable fraction and vapor	None

##### **Canada**

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Citral	5392-40-5	None	None	None	None

##### **Australia and Mexico**

Component	CAS No	Australia	Mexico
Citral	5392-40-5	None	5 ppm TWA

### Appropriate engineering controls

#### **Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

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

#### **Personal Protective Equipment**

**Eye protection:** Goggles or Safety glasses with side-shields.

**Skin and body protection:** Chemical resistant apron  
Long sleeved clothing  
Gloves

**Respiratory protection:** Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product When using, do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid	<b>Appearance:</b> No information available.	<b>Color:</b> Colorless to pale yellow.
<b>Odor:</b> Lemon-like. Citrus-like.	<b>Taste</b> No information available.	<b>Formula</b> C10H16O
<b>Molecular/Formula weight (g/mole):</b> 152.24	<b>Flammability (solid, gas)</b> no data available	<b>Flashpoint (°C/°F):</b> 91-101°C/ 195.8-213.8°F
<b>Flash Point Tested according to:</b> Closed cup	<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Lower Explosion Limit (%):</b> 4.3
<b>Upper Explosion Limit (%):</b> 9.9	<b>Melting point/range(°C/°F):</b> < -10°C/ <14°F	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Boiling point/range(°C/°F):</b> 226-229°C/ 438.8-444.2°F	<b>Bulk density:</b> No information available	<b>Density (g/cm3):</b> No information available
<b>Specific gravity:</b> 0.8869-0.897	<b>pH</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> < 0.1
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 5	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Viscosity:</b> No information available
<b>Miscibility:</b> No information available	<b>Solubility:</b> Very slightly soluble in water Soluble in Benzyl benzoate Soluble in Diethyl phthalate Soluble in Glycerol Soluble in Propylene glycol Soluble in mineral oil Soluble in fixed oils	

## 10. STABILITY AND REACTIVITY

**Reactivity**  
No information available

**Chemical stability**

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat, flames and sparks. Incompatible materials.

**Incompatible Materials:** Strong oxidizing agents  
Strong acids  
Strong bases  
Alkalis

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide.

**Other Information**

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Skin. Eyes. Inhalation. Ingestion.

### Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document  
**Component Information**

Citral	
CAS No	5392-40-5

**LD50/oral/rat** = 4960 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = 6 gm/kg Oral LD50 Mouse  
**LD50/dermal/rabbit** = 2250 mg/kg Dermal LD50 Rabbit  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = No information available

### **Product Information**

**LD50/oral/rat** =  
**Value - Acute Tox** = 4960 mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = 6 gm/kg

**LD50/dermal/rabbit**  
**Value - Acute Tox** = 2250 mg/kg

**LD50/dermal/rat**  
**VALUE - Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available

VALUE-Gas = No information available  
 VALUE-Dust/Mist = No information available

**LC50/Inhalation/mouse**

VALUE-Vapor = No information available  
 VALUE - Gas = No information available  
 VALUE - Dust/Mist = No information available

**Symptoms**

**Skin Contact:** Causes skin irritation. May cause allergic skin reaction. May be harmful in contact with skin.

**Eye Contact:** May cause eye irritation.

**Inhalation** May cause irritation of respiratory tract. Symptoms may include coughing and shortness of breath.

**Ingestion** May cause digestive (gastrointestinal) tract irritation. May be harmful if swallowed. May affect behavior/central nervous system (somnolence). May cause headache. Ingestion may cause nausea, vomiting.

**Aspiration hazard** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may affect the blood.

**Sensitization:** May cause sensitization by skin contact.

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Citral	5392-40-5	Not listed	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

STOT - single exposure No information available.  
 STOT - repeated exposure No information available.  
 Target Organs: No information available.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity effects:** Aquatic environment.

*Citral - 5392-40-5*

**Algae/aquatic plants** EC50: =16mg/L (72h, *Desmodesmus subspicatus*) EC50: =19mg/L (96h, *Desmodesmus subspicatus*)

**Fish** LC50: 4.6 - 10mg/L (96h, *Leuciscus idus*)

**Crustacea** EC50: =7mg/L (48h, *Daphnia magna*)

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility in soil** No information available

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

**Waste from residues / unused products:**  
 Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**  
 Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Citral	5392-40-5	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** Not Regulated

**Proper Shipping Name:** No information available

**Hazard Class** No information available

**Subsidiary Class** No information available

**Packing group:** No information available

**Emergency Response Guide Number** No information available

**Marine Pollutant** No data available

**DOT RQ (lbs):** No information available

**Special Provisions** No Information available

**Symbol(s):** No information available

**Description:** No information available

### TDG (Canada)

**UN-No:** Not Regulated

**Proper Shipping Name:** No information available



**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No Information available  
**Description:** No information available

**ADR**

**UN Number** Not regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Packing group** No information available  
**Subsidiary Risk:** No information available

**IMDG**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No information available

**RID**

**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available

**ICAO (air)**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available

**IATA**

**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available  
**Precautionary Statements - Response** IF exposed or concerned  
**Special Provisions** No information available

<b>15. REGULATORY INFORMATION</b>
-----------------------------------

**International Inventories**

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia AICS	EINECS-No.
<i>Citral</i>	5392-40-5	Present ACTIV E	Present KE-11579	Present	Present (2)-515	Present	Present	Present 226-394-6

**U.S. Regulations**

*Citral*  
 FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 182.60

**FDA - 21 CFR - Total Food Additives 182.60  
- List Sourced from EAFUS**

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Citral	5392-40-5	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Citral	5392-40-5	None	None	None	None	None

**U.S. TSCA**

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Citral	5392-40-5	Not Applicable	Not Applicable

**Canada**

**WHMIS 2015 - GHS Classifications**

WHMIS 2015 Hazard Classification Information:

Component  
Citral  
5392-40-5 ( 100 )

WHMIS 2015 Hazard Classification  
Skin corrosion/irritation - Category 2: H315 Causes skin irritation.;  
Serious Eye Damage/Eye Irritation - Category 2A: H319 Causes serious eye irritation.;  
Skin sensitizers - Category 1B: H317 May cause allergic skin reaction.

**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

**DSL/NDSL**

Component	CAS No	Canada (DSL)	Canada (NDSL)
Citral	5392-40-5	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Citral	5392-40-5	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Citral	5392-40-5	Not listed

**EU Classification**

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Citral	5392-40-5	Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation.; Skin sensitizers - Skin Sens. 1: H317 May cause allergic skin reaction.605-019-00-3

EU - CLP (1272/2008)

**R-phrase(s)**

R38 - Irritating to skin

R43 - May cause sensitization by skin contact

**S -phrase(s)**

S28 - After contact with skin, wash immediately with plenty of water

S24/25 - Avoid contact with skin and eyes

S36/37 - Wear suitable protective clothing and gloves

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Citral	5392-40-5	Xi; R38 R43	No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Xi - Irritant

**Xi**



**16. OTHER INFORMATION**

Preparation Date: 03/12/2019  
 Revision date 03/12/2019  
 Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against

infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**