

# Safety Data Sheet (SDS) International (GHS)

Revision date: 1/20/2022



## SECTION 1: Identification

### Product identifiers:

**Product trade name:** Kalama\* Laevo-Citronellol  
**Company product number:** LCITRONELL  
**Other means of identification:** 32167; Citronellol

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

**Uses:** Fragrance ingredient; Industrial applications.  
**Restrictions on use:** None identified

### Details of the supplier:

**Manufacturer/Supplier:** Emerald Kalama Chemical Limited  
Dans Road  
Widnes, Cheshire WA8 0RF  
United Kingdom  
Telephone: +44 (0) 151 423 8000  
Email: product.compliance@emeraldmaterials.com

**For further information about this SDS:** Email: product.compliance@emeraldmaterials.com

### Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA);  
1-300-954-583 (Australia); 000-800-100-4086 (India).

## SECTION 2: Hazard(s) identification

### Classification of the substance or mixture:

Acute Toxicity, Oral, category 5, H303  
Acute Toxicity, Dermal, category 5, H313  
Skin Irritation, category 2, H315  
Skin Sensitizer, category 1, H317  
Eye Irritation, category 2, H319  
Hazardous to the aquatic environment, Acute, category 2, H401

### Label elements:

#### Hazard pictogram(s):



#### Signal word:

Warning

#### Hazard statements:

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.

#### Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/eye protection/face protection.  
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.  
P312 Call a POISON CENTRE/doctor if you feel unwell.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.

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P362+P364 Take off contaminated clothing and wash it before reuse.

P501 Dispose of contents/container in accordance with local, regional and international regulations.

**Supplemental information:** No Additional Information

Classification and hazards statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Regulations in individual countries/regions may determine which classifications and hazard statements are applicable based on adopted hazard classes and categories. Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

**Other hazards:** No Additional Information

See Section 11 for toxicological information.

### SECTION 3: Composition/information on ingredients

**Mixture:**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%</u>
0007540-51-4	L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	55-<65
0000106-22-9	DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol )	35-<45
0000106-24-1	Geraniol	0.1-<1.0
0005392-40-5	Citral	0.1-<1.0

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

### SECTION 4: First-aid measures

**Description of first aid measures:**

**General:** If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

**Eye contact:** Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

**Skin contact:** Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If skin irritation occurs: Get medical advice/attention.

**Inhalation:** If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

**Protection of first aid responders:** Wear proper personal protective clothing and equipment.

**Most important symptoms and effects, both acute and delayed:** Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

**Indication of any immediate medical attention and special treatment needed, if necessary:** Treat symptomatically.

### SECTION 5: Fire-fighting measures

**Extinguishing media:**

**Suitable:** Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

**Unsuitable:** Do not use direct water stream. May spread fire.

**Special hazards arising From the chemical:**

**Unusual fire/explosion hazards:** Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

**Hazardous combustion products:** Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (Hazardous decomposition products) for additional information.

**Special protective equipment and precautions for fire-fighters:** Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

## SECTION 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

**Environmental precautions:** Do not flush liquid into public sewer, water systems or surface waters.

**Methods and materials for containment and cleaning up:** Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

## SECTION 7: Handling and storage

**Precautions for safe handling:** As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

**Conditions for safe storage, including any incompatibilities:** Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning. Empty container contains residual product which may exhibit hazards of product.

## SECTION 8: Exposure controls / personal protection

### Control parameters:

#### Occupational exposure limits (OEL):

<u>Chemical Name</u>	<u>ACGIH - TWA/Ceiling</u>	<u>ACGIH - STEL</u>			
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E			
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E			
Geraniol	N/E	N/E			
Citral	5 ppm TWA (inhalable fraction and vapor) (skin) (dermal sensitizer)	N/E			
<u>Chemical Name</u>	<u>Australia</u>	<u>New Zealand</u>	<u>Philippines</u>	<u>Singapore</u>	
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	N/E	N/E	
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	N/E	N/E	
Geraniol	N/E	N/E	N/E	N/E	
Citral	N/E	N/E	N/E	N/E	
<u>Chemical Name</u>	<u>Japan ISHL</u>	<u>Japan JSOH</u>	<u>Taiwan</u>	<u>Malaysia</u>	
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	N/E	N/E	
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	N/E	N/E	
Geraniol	N/E	N/E	N/E	N/E	
Citral	N/E	N/E	N/E	N/E	

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

### Exposure controls:

**Appropriate engineering controls:** Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.

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

**Eye/face protection:** Safety glasses or goggles required.

**Skin and body protection:** Wear chemical resistant (impervious) gloves. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

**Respiratory protection:** Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

**Further information:** Eyewash fountains and safety showers are recommended in the work area.

## SECTION 9: Physical and chemical properties

<b>Form:</b>	Liquid	<b>pH:</b>	Not Available
<b>Appearance:</b>	Clear, Colorless to light yellow	<b>Relative density:</b>	0.853-0.856
<b>Odor:</b>	Floral. Fruity.	<b>Partition coefficient (n-octanol/water):</b>	3.4-3.7
<b>Odor threshold:</b>	Not Available	<b>% Volatile by weight:</b>	Not Available
<b>Solubility in water:</b>	Negligible	<b>VOC:</b>	Not Available

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<b>Evaporation rate:</b>	Not Available	<b>Boiling point °C:</b>	224 °C
<b>Vapor pressure:</b>	<0.1 kPa (<1 mm Hg) @ 20°C	<b>Boiling point °F:</b>	435 °F
<b>Vapor density:</b>	Not Available	<b>Flash point:</b>	>93.3 °C (>200 °F) Closed Cup
<b>Viscosity:</b>	Not Available	<b>Auto-ignition temperature:</b>	240 °C (464 °F)
<b>Melting point/Freezing point:</b>	Not Available	<b>Flammability (solid, gas):</b>	Not Applicable (liquid)
<b>Oxidizing properties:</b>	Not oxidizing	<b>Flammability or explosive limits:</b>	LFL/LEL: Not Available UFL/UEL: Not Available
<b>Explosive properties:</b>	Not explosive		
<b>Decomposition temperature:</b>	Not Available		

**Other information:** Amounts specified are typical and do not represent a specification.

## SECTION 10: Stability and reactivity

**Reactivity:** None known.

**Chemical stability:** This product is stable.

**Possibility of hazardous reactions:** Hazardous polymerization will not occur.

**Conditions to avoid:** Excessive heat and ignition sources.

**Incompatible materials:** Avoid strong acids, bases, and oxidizing agents.

**Hazardous decomposition products:** Carbon dioxide, carbon monoxide and hydrocarbons.

## SECTION 11: Toxicological information

**Information on likely routes of exposure:**

**General:** Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

**Eyes:** Causes serious eye irritation.

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

**Inhalation:** High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes.

**Ingestion:** May be harmful if swallowed. Ingestion may cause irritation.

**Acute toxicity information:** May be harmful in contact with skin - Category 5. May be harmful if swallowed - Category 5. ATEmix (oral): >3000 - <5000 mg/kg. ATEmix (dermal): >2000 - 5000 mg/kg.

<b>Chemical Name</b>	<b>Inhalation LC50</b>	<b>Species</b>	<b>Oral LD50</b>	<b>Species</b>	<b>Dermal LD50</b>	<b>Species</b>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	3450 mg/kg (similar materials)	Rat/ adult	2650 mg/kg (similar materials)	Rabbit/ adult
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	N/E	N/E	3450 mg/kg	Rat/ adult	2650 mg/kg	Rabbit/ adult
Geraniol	N/E	N/E	3600 mg/kg	Rat/ adult	>5000 mg/kg	Rabbit/ adult
Citral	N/E	N/E	6800 mg/kg	Rat/ adult	2250 mg/kg	Rabbit/ adult

**Skin corrosion/irritation:** Causes skin irritation - Category 2.

<b>Chemical Name</b>	<b>Skin irritation</b>	<b>Species</b>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Irritant (OECD 431)	In-Vitro, Read-across
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Irritant	Rabbit/ adult
Geraniol	Irritant (OECD 404)	Rabbit/ adult
Citral	Irritant	Rabbit/ adult

**Serious eye damage/irritation:** Causes serious eye irritation - Category 2 (2A).

<b>Chemical Name</b>	<b>Eye irritation</b>	<b>Species</b>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Irritant (OECD 405)	Rabbit, Read-across
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Moderate irritant	Rabbit/ adult
Geraniol	Severe irritant	Rabbit/ adult
Citral	Irritant	

<u>Chemical Name</u>	<u>Eye irritation</u>	<u>Species</u>
		Rabbit/ adult

**Respiratory or skin sensitization:** Skin sensitization - Category 1.

<u>Chemical Name</u>	<u>Skin sensitisation</u>	<u>Species</u>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Sensitizer	Mouse/Local lymph node assay (similar materials)
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Sensitizer	Mouse/Local lymph node assay
Geraniol	Sensitizer	Local Lymph Node Assay (OECD 429)
Citral	Sensitizer	Weight of evidence

**Carcinogenicity:** Not classified (no relevant information found). CITRONELLOL - READ-ACROSS (Geranyl acetate & Citronellyl acetate): NOAEL (carcinogenicity), rat: >2000 mg/kg bw/day.

**Germ cell mutagenicity:** Not classified (based on available data, the classification criteria are not met). L-CITRONELLOL - READ-ACROSS (DL-CITRONELLOL): Ames tests, with and without activation: negative. Mutagenicity was negative in in-vivo genotoxicity assays. DL-CITRONELLOL: Ames tests, with and without activation: negative. Mutagenicity was negative in in-vivo genotoxicity assays.

**Reproductive toxicity:** Not classified (based on available data, the classification criteria are not met). L-CITRONELLOL - READ-ACROSS: Reproductive toxicity: oral, rat (reaction mass of geraniol and nerol) - NOAEL (no-observed adverse-effect-level) of 1000 mg/kg bw/day; dermal, rat (Geraniol) - NOAEL of 300 mg/kg bw/day. Developmental toxicity: oral, rat (reaction mass of geraniol and nerol) - NOAEL of 100 mg/kg bw/day (maternal toxicity), 300 mg/kg bw/day (prenatal development toxicity); dermal, rat (Geraniol)-NOAEL of 300 mg/kg bw/day. DL-CITRONELLOL: Reproductive toxicity - READ-ACROSS: oral, rat (reaction mass of geraniol and nerol) - NOAEL (no-observed adverse-effect-level) of 1000 mg/kg bw/day; dermal, rat (Geraniol) - NOAEL of 300 mg/kg bw/day. Developmental toxicity: oral, rat - NOAEL of >= 750 mg/kg bw/day.

**Specific target organ toxicity (STOT) - single exposure:** Not classified (based on available data, the classification criteria are not met).

**Specific target organ toxicity (STOT) - repeated exposure:** Not classified (based on available data, the classification criteria are not met). L-CITRONELLOL - READ-ACROSS (weight of evidence): Repeated dose oral toxicity studies showed NOAEL (No-Observed-Adverse-Effect-Level), oral: 1000 mg/kg bw/day (mouse); 2000 mg/kg bw/day (rat). DL-CITRONELLOL - READ-ACROSS (geraniol): Repeated dose oral toxicity studies showed a NOAEL (No-Observed-Adverse-Effect-Level), oral, rat - >550 mg/kg bw/day.

**Aspiration hazard:** Not classified (no relevant information found).

**Other toxicity information:** No additional information available.

**SECTION 12: Ecological information****Ecotoxicity:**

<u>Chemical Name</u>	<u>Species</u>	<u>Acute</u>	<u>Acute</u>	<u>Chronic</u>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Fish	LC50 14.66 mg/L (96 hours)	N/E	N/E
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Invertebrates	EC50 17.48 mg/L (48 hours)	N/E	N/E
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Algae	EC50 2.4 mg/L (72 hours) (similar materials)	N/E	EC20 1.1 mg/L(72 hours) (similar materials)
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Micro-organisms	EC10 580 mg/L (30 minutes)		
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Fish	LC50 14.66 mg/L (96 hours)	N/E	N/E
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Invertebrates	EC50 17.48 mg/L (48 hours)	N/E	N/E
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Algae	EC50 2.4 mg/L (72 hours)	N/E	EC20 1.1 mg/L(72 hours)
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Micro-organisms	EC10 580 mg/L (30 minutes)		
Geraniol	Fish	LC50 22 mg/L (96 hours) (similar materials)	N/E	N/E
Geraniol	Invertebrates	EC50 10.8 mg/L (48 hours) (similar materials)	N/E	N/E
Geraniol	Algae	EC50 13.1 mg/L (72 hours) (similar materials)	N/E	EC10 3.77 mg/L(72 hours) (similar materials)
Geraniol	Micro-organisms	EC50 70 mg/L (30 minutes)		
Citral	Fish	LC50 6.78 mg/L (96 hours)	N/E	N/E
Citral	Invertebrates	EC50 6.8 mg/L (48 hours)	N/E	N/E
Citral	Algae	EC50 104 mg/L (72 hours)	N/E	N/E

**Persistence and degradability:**

<u>Chemical Name</u>	<u>Biodegradation</u>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Readily biodegradable (OECD 301F, read-across)
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Readily biodegradable (OECD 301F)

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**Chemical Name**

Geraniol  
Citral

**Biodegradation**

Readily biodegradable (OECD 301A)  
Readily biodegradable

**Bioaccumulative potential:**

**Chemical Name**

L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)  
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol )  
Geraniol  
Citral

**Bioconcentration Factor (BCF)**

N/E  
82.59 L/kg (calculated)  
N/E  
N/E

**Log Kow**

3.66 @ 40°C (OECD 117)  
3.41 @ 25°C  
2.6 (OECD 117)  
2.76-2.9

**Mobility in soil:**

**Chemical Name**

L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)  
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol )  
Geraniol  
Citral

**Mobility in soil (Koc/Kow)**

N/E  
N/E  
N/E  
N/E

**Other adverse effects:** No additional information available.

**SECTION 13: Disposal considerations**

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

**SECTION 14: Transport information**

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

**UN number:** N/A

**UN proper shipping name:**

Not regulated - See Bill of Lading for Details

**Transport hazard class(es):**

**U.S. DOT hazard class:** N/A

**Canada TDG hazard class:** N/A

**Europe ADR/RID hazard class:** N/A

**IMDG Code (ocean) hazard class:** N/A

**ICAO/IATA (air) hazard class:** N/A

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

**Packing group:** N/A

**Environmental hazards:**

**Marine pollutant:** Not Applicable

**Hazardous substance (USA):** Not Applicable

**Special precautions for user:** Not Applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:**

Not Applicable

## SECTION 15: Regulatory information

**Safety, health and environmental regulations specific for the product in question:**

**Japan regulations:**

**Japan Industrial Safety and Health Law:**

<u>Chemical name</u>	<u>Category</u>
No subject chemicals	

**Japan Fire Service Law:**

<u>Chemical name</u>	<u>Category</u>
L-Citronellol ((-)-3,7-Dimethyloct-6-en-1-ol)	Group 4 - Flammable liquids
DL-Citronellol ((±)-3,7-Dimethyloct-6-en-1-ol)	Group 4 - Flammable liquids
Geraniol	Group 4 - Flammable liquids
Citral	Group 4 - Flammable liquids

**Japan Poisonous and Deleterious Substances:**

<u>Chemical name</u>	<u>Category</u>	<u>Threshold</u>
No subject chemicals		

**Japan Prevention of Marine Pollution and Disaster:**

<u>Chemical name</u>	<u>Category</u>
No subject chemicals	

**Japan Chemical Substances Control Law:**

<u>Chemical name</u>	<u>Category</u>	<u>Notes</u>
No subject chemicals		

**Other regulations:** No Additional Information

**Chemical inventories:**

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Industrial Chemicals (AIIC):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA) (Active):	Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory (or is not on the ACTIVE inventory for U.S. TSCA); 2) no information is available; or 3) the component has not been reviewed. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

**Europe REACH (EC) 1907/2006:** Applicable components are registered, exempt or otherwise compliant. EU REACH is only relevant to substances either manufactured or imported into the EU. Emerald Kalama Chemical has met its obligations under the EU REACH regulation. EU REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing EU REACH obligations, depending on their place in the supply chain. Emerald's compliance with EU REACH does not imply automatic coverage for Downstream Users located in the EU. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

## SECTION 16: Other information

**Legend:**

\* : Trademark owned by Emerald Kalama Chemical, LLC.  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 N/A: Not Applicable  
 N/E: None Established  
 STEL: Short Term Exposure Limit  
 TWA: Time Weighted Average (exposure for 8-hour workday)

**Users Responsibility/Disclaimer of Liability:**

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer:  
 Product Compliance Department  
 Emerald Kalama Chemical, LLC  
 1499 SE Tech Center Place, Suite 300  
 Vancouver, WA 98683

SDS Name: Kalama\* Laevo-Citronellol

United States