



# Scientific Documentation

L1200, Lemon Oil, California Type, Cold-pressed, FCC

Not appropriate for regulatory submission. Please visit [www.spectrumchemical.com](http://www.spectrumchemical.com) or contact Tech Services for the most up-to-date information contained in this information package.

## **Spectrum Chemical Mfg Corp**

769 Jersey Avenue  
New Brunswick, NJ 08901  
Phone 732.214.1300

Ver4.03 28.August.2017



Dear Customer,

Thank you for your interest in Spectrum's quality products and services.

Spectrum has been proudly serving the scientific community for over 45 years. It is our mission to manufacture and distribute fine chemicals and laboratory products with Quality and delivery you can count on every time.

To accomplish our mission, Spectrum utilizes our sourcing leverage and supplier qualification expertise in offering one of the industry's most comprehensive line of fine chemical products under one brand, in packaging configurations designed to meet your research and production requirements. Our product grades include: USP, NF, BP, EP, JP, FCC, ACS, KSA, Reagent grade, as well as DEA controlled substances. We operate facilities in the United States on the East Coast, West Coast, as well as in Shanghai, China in order to provide the best logistical support for our customers.

At Spectrum, Quality is priority number one. Suppliers with the best qualifications are preferred and we employ full-functioning in-house analytical laboratories at each of our facilities. Our facilities and systems are USFDA registered and ISO certified. We frequently host customer audits and cherish opportunities for improvements. Quality is engrained into our culture. Quality is priority number one.

In the following pages, we have designed and prepared documented scientific information to aid you in your initial qualification or your continual use of our products. Please do not hesitate to contact us if further information or the most up-to-date documentation is desired from any of the covered areas.

We appreciate your business and we look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Wang", is written over a light gray rectangular background.

Alan Wang, MSQA, ASQ CQA  
Director of Technical Services  
[techservices@spectrumchemical.com](mailto:techservices@spectrumchemical.com)

**L1200**, Lemon Oil, California Type, Cold-pressed, FCC

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CHEMICAL MFG CORP



## Specification for Lemon Oil, California Type, Cold-pressed, FCC (L1200)

Item Number	L1200
Item	Lemon Oil, California Type, Cold-pressed, FCC
CAS Number	8008-56-8
Molecular Formula	
Molecular Weight	
MDL Number	
Synonyms	Oleum Limonis ; Citrus Medica Limonum (Lemon) Peel Oil

Test	Specification	
	Min	Max
ASSAY (ALDEHYDES AS CITRAL)	2.2 - 3.8 %	
ANGULAR ROTATION	+57 to +65.6	
REFRACTIVE INDEX @ 20°C	1.473 - 1.476	
SOLUBILITY IN ALCOHOL		TO PASS TEST
SPECIFIC GRAVITY @ 25°C	0.849 - 0.855	
UV ABSORBANCE @ 315 +/- 3 nm	0.2 A.U.	
IDENTIFICATION		TO PASS TEST
EXPIRATION DATE		

### ***Spectrum Chemical Mfg Corp***

**Corporate Headquarters:**  
769 Jersey Ave.  
New Brunswick, NJ 08901  
732.214.1300

**West Coast Facility:**  
14422 S. San Pedro St.  
Gardena, CA 90248  
310.516.8000



# SAFETY DATA SHEET

Preparation Date: 8/24/2017

Revision Date: 8/24/2017

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

**Product code:** L1200  
**Product Name:** LEMON OIL, CALIFORNIA TYPE, COLDPRESSED, FCC

### Other means of identification

**Synonyms:** Oil of Lemon  
**CAS #:** 8008-56-8  
**RTECS #** OG8300000  
**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:** Martin LaBenz (West Coast)

**Contact Person:** Ibad Tirmiz (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous according to 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
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Aspiration toxicity	Category 1
Flammable liquids	Category 3

### Label elements

#### **Warning**

#### **Hazard statements**

Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction  
May be fatal if swallowed and enters airways  
Flammable liquid and vapor

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**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful if swallowed

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing must not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/.../equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Wear eye/face protection  
Wear protective gloves

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
Lemon Oil, California type, cold pressed	8008-56-8	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 skin irritation persists, call a physician.

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

**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. Consult a physician if necessary.

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

**Symptoms** Causes serious eye irritation. Causes skin irritation. Aspiration hazard if swallowed - can enter the lungs and cause damage. May cause an allergic skin reaction.

**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:** Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** Do not use a solid (straight) water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** No information available.

**Specific hazards:** Flammable. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**Special Protective Actions for Firefighters**

**Specific Methods:** For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

**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. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. All equipment used when handling the product must be grounded. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

**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. Use only non-sparking tools. 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. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

#### **Safe Handling Advice**

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

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

Keep container tightly closed. Keep in a well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Protect from light. Sensitive to light. Store in light-resistant containers. Store in a segregated and approved area. Store away from incompatible materials.

#### **Incompatible Materials:**

No information available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

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

##### **United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Lemon Oil, California type, cold pressed	8008-56-8	None	None	None	None

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## Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Lemon Oil, California type, cold pressed	8008-56-8	None	None	None	None

## Australia and Mexico

Components	CAS-No.	Australia	Mexico
Lemon Oil, California type, cold pressed	8008-56-8	None	None

## 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

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

### Physical state:

Liquid

### Appearance:

Clear.

### Color:

Yellow. Light green.

### Odor:

Lemon-like. reminiscent of lemon peel. No information available.

### Taste

No information available.

### Formula:

No information available

### Molecular/Formula weight:

No information available

### Flammability:

Flammable

### Flashpoint (°C/°F):

50 °C/122 °F

### Flash Point Tested according to:

Closed cup

### Autoignition Temperature (°C/°F):

No information available

### Lower Explosion Limit (%):

No information available

### Upper Explosion Limit (%):

No information available

### Melting point/range(°C/°F):

No information available

### Decomposition temperature(°C/°F):

No information available

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**Boiling point/range(°C/°F):**

No information available

**Bulk density:**

No information available

**Density (g/cm3):**

No information available

**Specific gravity:**

0.849-0.856

**pH:**

No information available

**Vapor pressure @ 20°C (kPa):**

No information available

**Evaporation rate:**

No information available

**Vapor density:**

No information available

**VOC content (g/L):**

No information available

**Odor threshold (ppm):**

No information available

**Partition coefficient****(n-octanol/water):**

No information available

**Viscosity:**

No information available

**Miscibility:**

No information available

**Solubility:**

Insoluble in water

**10. STABILITY AND REACTIVITY****Reactivity**

No information available

**Chemical stability****Stability:**

Sensitive to light. Exposure to light accelerates decomposition. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur**Conditions to avoid:**

Heat. Ignition sources. Exposure to light.

**Incompatible Materials:**

No information available

**Hazardous decomposition products:**

No information available.

**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:**

Eyes. Ingestion. Inhalation. Skin.

**Acute Toxicity****Component Information**

Lemon Oil, California type, cold pressed

CAS-No.

8008-56-8

LD50/oral/rat = 2840 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = &gt;5000 mg/kg

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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 Oral = 2840 mg/kg

LD50/oral/mouse =  
 Value - Acute Tox Oral = No information available

LD50/dermal/rabbit  
 VALUE-Acute Tox Dermal = > 5000 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.  
**Eye Contact:** Causes serious eye irritation. Moderately irritating to the eyes.  
**Inhalation** May cause irritation of respiratory tract.  
**Ingestion** Aspiration hazard if swallowed. Aspiration into the lungs can cause chemical pneumonitis. Aspiration may lead to pulmonary edema.  
**Aspiration hazard** May be fatal if swallowed and enters airways.

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

**Chronic Toxicity** Repeated or prolonged skin contact may cause skin sensitization. Skin: Sensitizer. May cause allergic skin reaction (allergic contact dermatitis).  
**Sensitization:** May cause sensitization by skin contact.  
**Mutagenic Effects:** No information available  
**Carcinogenic effects:** Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances

Lemon Oil, California type, cold pressed	8008-56-8	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
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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:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility:** 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

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Lemon Oil, California type, cold pressed	8008-56-8	None	None	None	None

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavoring, liquid  
**Hazard Class:** 3

**Product code:** L1200

**Product name:** LEMON OIL,  
CALIFORNIA TYPE, COLDPRESSED,  
FCC

**Subsidiary Class** No information available  
**Packing group:** III  
**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:** UN1197,Extracts, flavoring, liquid ,3,PG III

**TDG (Canada)**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No Information available  
**Description:** UN1197,EXTRACTS, FLAVOURING, LIQUID,3,PG III

**ADR**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Description:** UN1197 Extracts, flavouring, liquid,3,III

**IMO / IMDG**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No information available  
**EMS:** F-E

**RID**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** UN1197 Extracts, flavouring, liquid,3,III

**ICAO**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** UN1197,Extracts, flavouring, liquid,3,PG III

**IATA**

**UN-No:** UN1197  
**Proper Shipping Name:** Extracts, flavouring, liquid  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** III

**Product code:** L1200

**Product name:** LEMON OIL,  
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FCC

**ERG Code:** 3L  
**Special Provisions** No information available  
**Description:** UN1197, Extracts, flavouring, liquid, 3, PG III

**15. REGULATORY INFORMATION**

**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Lemon Oil, California type, cold pressed</i>	8008-56-8	Present	Present KE-27013	Present	Not present	Present	Present	Not present

**U.S. Regulations**

*Lemon Oil, California type, cold pressed*

**FDA - 21 CFR - Total Food Additives** 146.114 146.120 161.190 172.230 173.240 182.20

**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)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Lemon Oil, California type, cold pressed</i>	8008-56-8	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	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
<i>Lemon Oil, California type, cold pressed</i>	8008-56-8	None	None	None	None	None

**U.S. TSCA**

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Lemon Oil, California type, cold pressed</i>	8008-56-8	Not Applicable	Not Applicable

**Canada**

**WHIMIS 2015 - GHS Classifications**

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

**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

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**WHMIS 1988 Hazard Class**

B3 Combustible liquid

D2B Toxic materials

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Lemon Oil, California type, cold pressed	8008-56-8	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Lemon Oil, California type, cold pressed	8008-56-8	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Lemon Oil, California type, cold pressed	8008-56-8	Not listed

**EU Classification****EU GHS - SV - CLP 1272/2008**

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Lemon Oil, California type, cold pressed	8008-56-8	No information

**EU - CLP (1272/2008)****R-phrase(s)**

R10 - Flammable.

R36/38 - Irritating to eyes and skin.

**S -phrase(s)**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Lemon Oil, California type, cold pressed	8008-56-8		No information	

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

**Indication of danger:**

Flammable

Xi - Irritant.

**Xi****16. OTHER INFORMATION**

**Preparation Date:** 8/24/2017

**Product code:** L1200

**Product name:** LEMON OIL,  
CALIFORNIA TYPE, COLDPRESSED,  
FCC

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**Revision Date:**  
**Prepared by:**

8/24/2017  
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**



# CERTIFICATE OF REGISTRATION

This is to certify that the quality management system of:

## Spectrum Chemicals and Laboratory Products, Inc.

Main Site: 14422 South San Pedro Street, Gardena, California, 90248,  
USA,

Additional sites: 13915 South Main Street, Los Angeles, California,  
90061, USA

769 Jersey Avenue, New Brunswick, New Jersey, 08901, USA

755 Jersey Avenue, New Brunswick, New Jersey, 08901, USA

777 Jersey Avenue, New Brunswick, New Jersey, 08901, USA

400 N. Oracle, Suite 221, Tucson, Arizona, 85704, USA, USA

has been assessed and registered by Intertek as conforming to the  
requirements of:

## ISO 9001:2015

The quality management system is applicable to:

Main Site: The manufacture and distribution of specialty fine  
chemicals, solutions, equipment, supplies and products for the  
laboratory, pharmaceutical, food, healthcare, cosmetic, fragrance,  
biotechnology, environmental and process industries.

**Certificate Number:**

94-316m-03

**Initial Certification Date:**

27 December 1994

**Certificate Issue Date:**

31 July 2017

**Certificate Expiry Date:**

28 January 2019



A handwritten signature in black ink, appearing to read 'Calin Moldovean', written over a horizontal line.

**Authorized Signature**

**Calin Moldovean**

President Business Assurance

Intertek Testing Services NA, Inc. dba Intertek  
900 Chelmsford Street, Lowell, MA, USA



# APPENDIX TO CERTIFICATE OF REGISTRATION

This appendix identifies the locations by the management system of

## Spectrum Chemicals and Laboratory Products, Inc.

755 and 769 Jersey Avenue: The manufacture and distribution of specialty fine chemicals, solutions, equipment, supplies and products for the laboratory, pharmaceutical, food, healthcare, cosmetic, fragrance, biotechnology, environmental and process industries.

777 Jersey Avenue: The manufacture and distribution of specialty fine chemicals, solutions, equipment, supplies and products for Compounding Pharmacies.

7400 N. Oracle: The manufacture and distribution of specialty fine chemicals, solutions, equipment, supplies and products for the laboratory, pharmaceutical, food, healthcare, cosmetic, fragrance, biotechnology, environmental and process industries.



# Certificate of Registration

# Intertek

This is to certify that the quality management system of

## Spectrum China Ltd.

**Building A20, No. 3802, Shengang Road, Songjiang District, Shanghai, China**

has been assessed and registered by Intertek as conforming to the requirements of

## ISO 9001: 2008

The quality management system is applicable to:

*Provision of service of purchase, testing and sales for chemical products, repacking of non-hazardous chemical products.*

Organization Code: 77762704-8  
Certificate Number: 111310001-01  
Certificate Issue Date: 17 November 2015  
Certificate Expiry Date: 14 September 2018



014

A handwritten signature in black ink, appearing to read "Calin Moldovean".

Authorised Signature: Calin Moldovean – President, Business Assurance  
Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom  
Intertek Certification Limited is a UKAS accredited body under schedule of accreditation no. 014.

In the issuance of this certificate, Intertek assumes no liability to any party other than to the client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at [certificate.validation@intertek.com](mailto:certificate.validation@intertek.com) or by scanning the code to the right with a smartphone.  
The annual validity of the certificate can also be checked through the website <http://www.cnca.gov.cn> of CNCA in China.



The certificate remains the property of Intertek, to whom it must be returned upon request.

July 13, 2017

**Certification of Compliance with current Good Manufacturing Practices**

Dear Valued Customer:

Spectrum Chemical Mfg Corp certifies that our USP, NF, FCC, EP, BP, JP and food grade products are produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Spectrum is an FDA registered and inspected Drug Establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum-Gardena, CA:	<u>2020632</u>
Spectrum-New Brunswick, NJ:	<u>2246824</u>
Spectrum-Shanghai, China:	<u>3006174778</u>

Thank you for your interest in Spectrum products. If we may be of further assistance, please feel free to contact the Quality Assurance department at 310-516-8000 or via email at [qualityassurance@spectrumchemical.com](mailto:qualityassurance@spectrumchemical.com)

Sincerely,



Oralia Chavez  
Quality Assurance Specialist

August 28, 2017

**Certification of Compliance with current Good Manufacturing Practices**

Dear Valued Customer:

Spectrum Chemical Mfg Corp certifies that the following product(s) is produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Catalog Number	Product Name
L1200	Lemon Oil, California Type, Cold-pressed, FCC

Spectrum is an FDA registered and inspected Drug Establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum-Gardena, CA: 2020632  
Spectrum-New Brunswick, NJ: 2246824  
Spectrum-Shanghai, China: 3006174778

Thank you for your interest in Spectrum products. If we may be of further assistance, please feel free to contact the Quality Assurance department at 310-516-8000 or via email at [qualityassurance@spectrumchemical.com](mailto:qualityassurance@spectrumchemical.com)

Sincerely,



Oralia Chavez  
Quality Assurance Specialist



Aug 16, 2017

Re: Lemon Oil, California Type, Cold-pressed, FCC- L1200

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding Bovine Spongiform Encephalopathy (BSE). Please be assured that the chemical

Lemon Oil, California Type, Cold-pressed, FCC- L1200

is BSE/TSE free.

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at [techservices@spectrumchemical.com](mailto:techservices@spectrumchemical.com).

Sincerely,

Darlene Dagdag-Lyudmirskiy  
Technical Services  
Spectrum Chemical Mfg. Corp.

This document has been produced electronically and is valid without a signature



Aug 17, 2017

Re: Lemon Oil, California Type, Cold-pressed, FCC- L1200

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding the presence of allergens in raw materials. Please be assured that the following chemical does not contain (Milk; Egg; Fish; Shellfish; Tree nuts; Mollusks; Wheat; Peanuts; Soy; Cereals containing Gluten).

Lemon Oil, California Type, Cold-pressed, FCC- L1200

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at [techservices@spectrumchemical.com](mailto:techservices@spectrumchemical.com).

Sincerely,

Darlene Dagdag-Lyudmirskiy  
Technical Services  
Spectrum Chemical Mfg. Corp.

This document has been produced electronically and is valid without a signature



Aug 17, 2017

Re: Lemon Oil, California Type, Cold-pressed, FCC- L1200

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfg. Corp. understand the concern regarding Aflatoxins in raw materials. To the best of our knowledge, the product listed below is not contaminated with Aflatoxins. Aflatoxins are not used in production. The following product does not come in contact with Aflatoxins at any stage of production.

Lemon Oil, California Type, Cold-pressed, FCC- L1200

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at [techservices@spectrumchemical.com](mailto:techservices@spectrumchemical.com).

Sincerely,

Darlene Dagdag-Lyudmirskiy  
Technical Services  
Spectrum Chemical Mfg. Corp.

This document has been produced electronically and is valid without a signature



Item Number	L1200	Lot Number	1GH0896
Item	Lemon Oil, California Type, Cold-pressed, FCC		
CAS Number	8008-56-8		
Molecular Formula		Molecular Weight	

Test	Specification		Result
	min	max	
ASSAY (ALDEHYDES AS CITRAL)	2.2 - 3.8 %		3.25 %
ANGULAR ROTATION	+57 to +65.6		+64.4°
REFRACTIVE INDEX @ 20°C	1.473 - 1.476		1.4744
SOLUBILITY IN ALCOHOL		TO PASS TEST	PASSES TEST
SPECIFIC GRAVITY @ 25°C	0.849 - 0.855		0.8497
UV ABSORBANCE @ 315 +/- 3 nm	0.2 A.U.		1.1128
IDENTIFICATION		TO PASS TEST	PASSES TEST
EXPIRATION DATE			04-AUG-2018
DATE OF MANUFACTURE			04-AUG-2017
APPEARANCE			CLEAR COLORLESS LIQUID

Spectrum Chemical Mfg Corp  
 14422 South San Pedro Street  
 Gardena 90248 CA

Certificate of Analysis Results Certified By:




Adan Hernandez  
 Quality Control Manager  
 Spectrum Chemicals & Laboratory Products

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and MSDS/SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personal only. The customer must ensure to provide its users adequate hazardous material training and appropriate protective gears before handling our chemicals.

## Label Information

The Spectrum label presents technical and safety information in an easily understood format. Our technical specialists stay abreast of the latest requirements of the Globally Harmonized System for Classification and Labelling of Chemicals (GHS), as well as the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA) and other government regulatory agencies in order to ensure compliance, accuracy and concise hazard communication.

**A** **DANGER**  
 • Flammable liquid and vapor • May be fatal if swallowed and enters airways • Causes serious eye irritation • Causes skin irritation • May cause an allergic skin reaction • May be harmful if swallowed.  
 • Keep away from heat, sparks, open flames, hot surfaces  
 • No smoking • Ground container and receiving equipment  
 • Use explosion-proof equipment • Use only non-sparking tools • Take precautionary measures against static discharge  
 • Wear protective gloves, eye protection, face protection • Avoid breathing mist or vapors • Wash face, hands and any exposed skin thoroughly after handling • Contaminated work clothing must not be allowed out of the workplace.  
**FIRST AID:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. DO NOT induce vomiting. IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO<sub>2</sub> to extinguish.

**B** **SPECTRUM**  
**L1200** **F** **500 ML**  
**E** **Lemon Oil**  
 California Type, Cold-pressed  
 F.C.C.  
**G** **CAS 8008-56-8**  
**H** **CAUTION:** For manufacturing, processing or repacking.  
**Read and understand the label and Safety Data Sheet (SDS) prior to use.**  
**I** DOT: UN1197, Extract, flavoring, liquid (lemon oil), 3, PG III  
**J** **Chemical Emergency: (800)424-9300**  
 www.SpectrumChemical.com  
**K** The volatile oil obtained by expression, without the aid of heat, from the fresh peel of the fruit of *Citrus limon* L. Burmann filius (Fam. *Rutaceae*).  
 Assay [Aldehydes as Citral; (C<sub>10</sub>H<sub>16</sub>O)] ..... 2.2-3.8%  
 Angular Rotation ..... +57° to +65.6°  
 Refractive Index @ 20°C ..... 1.473-1.476  
 Solubility in Alcohol ..... To pass test  
 Specific Gravity @ 25°C ..... 0.849-0.855  
 UV Absorbance @ 315 ± 3 nm ..... Min. 0.2 A.U.  
**L** Exp. Date: 03-31-2025  
**M** **Lot No. 062233**  
**N** **FLUSHED WITH NITROGEN**  
**O** **KEEP FROM CHILDREN**  
**R 7/E6GHS** **A**

**SPECTRUM CHEMICAL MFG. CORP.** **Gardena, CA 90248 • New Brunswick, NJ 08901**

- |   |  |   |
|---|--|---|
| <b>A</b> Bar Code   | <b>F</b> Size/Quantity   | <b>K</b> Empirical Formula, Formula Weight and Technical Specifications Panel |
| <b>B</b> GHS Hazard Pictograms                              | <b>G</b> Chemical Abstracts Service (CAS) Registry Number      | <b>L</b> Expiration Information   |
| <b>C</b> Warning, Safety Data and Precautionary Information | <b>H</b> Caution Information                                   | <b>M</b> Lot Number   |
| <b>D</b> Product Catalog Number                             | <b>I</b> DOT Shipping Information                              | <b>N</b> Kosher Certified by Kosher Supervision of America (KSA).             |
| <b>E</b> Item Name, Form, Grade                             | <b>J</b> Toll-Free 24-Hour Chemical Emergency Telephone Number |   |
| <b>O</b> Storage Color Band                                 |  |   |

This color-coded band indicates the hazard most likely to be posed by that material under storage conditions. The criteria used to assign band colors have been established by the Storage Code working group of the Society for Chemical Hazard Communication (SCHC). It is recommended that like colors be stored together, unless otherwise stated, based on the color codes indicated to the right. However, it is the responsibility of the customer to check with their local fire department for possible conflicts with our recommendations when storing hazardous chemicals.

- YELLOW:** Oxidizer
- RED:** Flammable
- GREEN:** General Storage
- BLUE:** Health Hazard
- WHITE:** Corrosive

### Spectrum Chemical Mfg Corp

**Corporate Headquarters:**

769 Jersey Ave.  
New Brunswick, NJ 08901

732.214.1300

**West Coast Facility:**

14422 S. San Pedro St.  
Gardena, CA 90248

310.516.8000

January 26, 2016

**RE: Lot Numbering System**

Dear Valued Customer:

This letter is to inform you of Spectrum Chemicals and Laboratory Products' Lot Numbering System. The system is based on an alpha-numerical sequence which provides the month, year and location of production.

The lot numbering system utilized until 2010 is a sequence of **six characters**, two letters followed by four numbers. The first letter represents the year, for example, Y denotes 2009 and Z denotes 2010. The second letter represents the month and site, for example, A-L denotes January through December at Spectrum's Gardena, CA facility, while M-X denotes January through December at the New Brunswick, NJ facility. The following four numbers are sequentially assigned.

**Example:** ZI0928 = The 928<sup>th</sup> material produced in California in September 2010

The lot numbering system utilized for 2011 and forward, is a sequence of **seven characters**. The first character, a number, represents the production facility:

- 1 = Gardena, CA Facility
- 2 = New Brunswick, NJ Facility
- 3 = China Facility

The second character, a letter, represents the year. For example, A denotes 2011 and B denotes 2012. The third character, a letter, represents the month, with A denoting January and L denoting December. The following four numbers are sequentially assigned.

**Example:** 2AA0706 = The 706<sup>th</sup> material produced in New Jersey in January 2011

Thank you for your interest with Spectrum products. Please feel free to contact us at 310-516-8000 or via email at [qualityassurance@spectrumchemical.com](mailto:qualityassurance@spectrumchemical.com) if we may be of further assistance.

Sincerely,



Michael Dang  
Manager, GMP Compliance



## Stability – Shelf Life Guidance

Product Covered: L1200, Lemon Oil, California Type, Cold-pressed, FCC

Spectrum Chemical's manufacturing partner has assigned the following shelf life guidance for the product listed above.

The product, L1200, Lemon Oil, California Type, Cold-pressed, FCC, is assigned a 12 months shelf life from date of manufacturing. The quality and integrity of the chemical depends on the handling and storage conditions. Please refer to the Safety Data Sheet for proper storage and handling procedures.

Adan R. Hernandez  
Quality Control Manager

A handwritten signature in black ink, appearing to read "Adan R. Hernandez".

Corporate Headquarters  
769 Jersey Avenue  
New Brunswick, NJ 08901-3605