



# Scientific Documentation

FE135, Fennel Oil, 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



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)

21.August.2017

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**spectrum**<sup>®</sup>  
CHEMICAL MFG CORP



## Specification for Fennel Oil, FCC (FE135)

Item Number	FE135
Item	Fennel Oil, FCC
CAS Number	8006-84-6
Molecular Formula	
Molecular Weight	
MDL Number	
Synonyms	Foeniculum Vulgare (Fennel) Oil

Test	Specification	
	Min	Max
ANGULAR ROTATION	+12 to +24	
REFRACTIVE INDEX @ 20°C	1.532	1.543
SOLIDIFICATION POINT	3°C	
SOLUBILITY IN ALCOHOL	TO PASS TEST	
SPECIFIC GRAVITY @ 25°C	0.953	0.973
IDENTIFICATION	TO PASS TEST	
CERTIFIED HALAL		
EXPIRATION DATE		
DATE OF MANUFACTURE		
APPEARANCE		

### ***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: 03/20/2014

Revision Date: 03/20/2015

Revision Number: G1

**Product identifier**

**Product code:** FE135  
**Product Name:** FENNEL OIL, FCC

**Other means of identification**

**Synonyms:**  
Bitter Fenchel  
Bitter Fennel Oil  
Fenchel Oel (German)  
Fenouil Amber  
Fenouil Doux  
Finocchio Amaro (Italian)  
Finocchio Dolce (Italian)  
Florence Fennel  
Heller Fenchel  
Hinojo Amargo  
Hinojo (Spanish)  
Oil of Fennel  
Oils, Fennel  
Oils Foeniculum Vulgare  
Sweet Fennel Oil

**CAS #:** 8006-84-6  
**RTECS #** LJ2550000  
**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 Chemicals and Laboratory Products, Inc.  
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 by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B

**Label elements****Warning****Hazard statements**

May be harmful if swallowed

Causes skin irritation

Causes eye irritation

Combustible liquid

**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

Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Wear protective gloves

Wear eye/face protection

**Precautionary Statements - Response**

Specific treatment (see .? on this label)

In case of fire: Use CO2, 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 ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

**Precautionary Statements - Storage**

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 %	Trade Secret
Fennel Oil 8006-84-6	8006-84-6	100	*

**4. FIRST AID MEASURES**

## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. Consult a physician if necessary.

#### **Eye Contact:**

Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

#### **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**

Severe skin irritation. Severe eye irritation. Harmful if swallowed.

### **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:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### **Unsuitable Extinguishing Media:**

Do not use water jet.

### **Specific hazards arising from the chemical**

#### **Hazardous Combustion Products:**

Carbon monoxide. Carbon dioxide. Organic Compounds

#### **Specific hazards:**

May be ignited by heat, sparks or flames

### **Special Protective Actions for Firefighters**

#### **Specific Methods:**

Water mist may be used to cool closed containers. Do not use straight streams. .

#### **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. All equipment used when handling the product must be grounded.

**Environmental precautions** 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), then place in a suitable chemical waste container.

**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. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

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

#### **Incompatible Materials:**

Strong oxidizing agents. Alkalis. Acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

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

##### **United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Fennel Oil - 8006-84-6	None	None	None	None

##### **Canada**

Components	Alberta	British Columbia	Ontario	Quebec
Fennel Oil - 8006-84-6	None	None	None	None

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

Components	Australia	Mexico
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Fennel Oil 8006-84-6	None	None
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### 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:** Chemical resistant protective suit. Gloves.

**Respiratory protection:** Vapor respirator. 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. Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid	<b>Appearance:</b> No information available	<b>Color:</b> Colorless. Colorless to pale yellow.
<b>Odor:</b> Odor of fennel.	<b>Taste</b> No information available	<b>Molecular/Formula weight:</b> No information available
<b>Formula:</b> No information available	<b>Flash point (°C):</b> 60°C	<b>Flashpoint (°C/°F):</b> 60-62°C
<b>Flash Point Tested according to:</b> Closed cup	<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available
<b>Autoignition Temperature (°C/°F):</b> No information available	<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> No information available
<b>Boiling point/range(°C/°F):</b> 227°C/ 441°F	<b>Decomposition temperature(°C/°F):</b> No information available	<b>Bulk density:</b> No information available
<b>Specific gravity:</b> 0.953-0.973	<b>Density (g/cm<sup>3</sup>):</b> 0.96	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<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> Alcohol	

## 10. STABILITY AND REACTIVITY

### Reactivity

## 10. STABILITY AND REACTIVITY

Reactive with oxidizing agents  
Reactive with alkalis  
Reactive with acids

### Chemical stability

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** In use, may form flammable/explosive vapor-air mixture

**Conditions to avoid:** Heat, flames and sparks.. Avoid excessive heat and light.

**Incompatible Materials:** Strong oxidizing agents. Alkalis. Acids.

**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

#### Component Information

*Fennel Oil - 8006-84-6*

**LD50/oral/rat** = = 3120 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = 3100 mg/kg Oral LD50 Mouse  
**LD50/dermal/rat** = No information available  
**LD50/dermal/rabbit** = 5000 mg/kg Dermal LD50 Rabbit  
**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** = 3120mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = 3100mg/kg

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = 5000mg/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 eye irritation.  
**Inhalation** May be harmful if inhaled. Overexposure may result in serious illness or death.  
**Ingestion** May be harmful if swallowed.  
**Aspiration hazard** No information available

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

**Chronic Toxicity** No information available  
**Sensitization:** No information available  
**Mutagenic Effects:** No information available  
**Carcinogenic effects:** Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Fennel Oil	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**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:** Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment..

**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	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Fennel Oil	None	None	None	None

### 14. TRANSPORT INFORMATION

#### DOT

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** None  
**ERG No:** No information available  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** 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  
**Description:** No information available

#### ADR

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

#### IMO / 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

## 14. TRANSPORT INFORMATION

**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**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  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**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  
**Description:** No information available

### IATA

**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  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Fennel Oil</i>	Present	Present KE-26913	Present	Not present	Present	Present	Not present

### U.S. Regulations

*Fennel Oil*

**FDA - 21 CFR - Total Food Additives** 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	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Fennel Oil	Not Listed	Not Listed	Not Listed	Not Listed

### CERCLA/SARA

Components	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 <i>de minimis</i>
<i>Fennel Oil</i>	None	None	None	None	None

#### U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Fennel Oil</i>	Not Applicable	Not Applicable

#### Canada

##### WHMIS hazard class:

Non-controlled

##### 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	Canada (DSL)	Canada (NDSL)
<i>Fennel Oil</i>	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
<i>Fennel Oil</i>	Not listed	Not listed

#### EU Classification

##### R-phrase(s)

R43 - May cause sensitization by skin contact.

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

##### S -phrase(s)

S24 - Avoid contact with skin.

S37 - Wear suitable gloves.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Components	Classification	Concentration Limits:	Safety Phrases
<i>Fennel Oil</i>		No information	

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

##### Indication of danger:

Xi - Irritant.

N - Dangerous for the environment.



## 16. OTHER INFORMATION

**Preparation Date:** 03/20/2014  
**Revision Date:** 03/20/2015  
**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**



## **Manufacturer**

Product Covered: FE135, Fennel Oil, FCC

Spectrum takes ownership as the manufacturer for the Spectrum product listed above and provides full quality assurance, customer service, and technical product support.

While information concerning the raw material manufacturer of our starting materials is considered proprietary, such information can be made available upon request contingent on demonstration of business volume justification and successful execution of confidential disclosure agreement (CDA).

Requests for disclosure of proprietary raw material manufacturer information may be submitted to the assigned account representative for consideration.

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)

21.August.2017



# 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 21, 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
FE135	Fennel Oil, 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: Fennel Oil, FCC- FE135

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

Fennel Oil, FCC- FE135

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: Fennel Oil, FCC- FE135

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).

Fennel Oil, FCC- FE135

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: Fennel Oil, FCC- FE135

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.

Fennel Oil, FCC- FE135

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	FE135	Lot Number	2EC0009
Item	Fennel Oil, FCC		
CAS Number	8006-84-6		
Molecular Formula		Molecular Weight	

Test	Specification		Result
	min	max	
ANGULAR ROTATION	+12 to +24		=18.88
REFRACTIVE INDEX @ 20°C	1.532- 1.543		1.5372
SOLIDIFICATION POINT	3 C		7.5 C
SOLUBILITY IN ALCOHOL	TO PASS TEST		PASSES TEST
SPECIFIC GRAVITY @ 25°C	0.953- 0.973		0.9542
IDENTIFICATION	TO PASS TEST		PASSES TEST
EXPIRATION DATE			17-FEB-2017
DATE OF MANUFACTURE			18-FEB-2015
APPEARANCE			COLORLESS LIQUID

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ

Certificate Of Analysis Results Certified by



Ibad Tirmizi  
Director of Quality  
Spectrum Chemical Mfg. Corp.



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.

**SPECTRUM**<sup>®</sup>

**FE135** **100 ML**

**Fennel Oil**

F.C.C.

CAS 8006-84-6

**WARNING**

- Combustible liquid • Causes skin and eye irritation • May be harmful if swallowed.
- Keep away from flames and hot surfaces • No smoking • Wear protective gloves • Wash face, hands and any exposed skin thoroughly after handling.

**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: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO<sub>2</sub> to extinguish.

**CAUTION:** For manufacturing, processing or repacking.  
**Read and understand the label and Safety Data Sheet (SDS) prior to use.**

**KEEP FROM CHILDREN**

Chemical Emergency: (800)424-9300  
www.SpectrumChemical.com

The Volatile Oil is obtained by steam distillation from the dried ripe fruit of *Foeniculum vulgare* Miller.  
NOTE: If solid material has separated, carefully warm the sample until it is completely liquefied, and mix it before using.

Angular Rotation .....+12° to +24°  
Refractive Index @ 20°C .....1.532-1.543  
Solidification Point ..... Min. 3°C  
Solubility In Alcohol .....To pass test  
Specific Gravity @ 25°C .....0.953-0.973

LIGHT SENSITIVE: Keep tightly closed in light-resistant containers.

Exp. Date: 03-31-2025

R 6/E3GHS A Lot No. 062233

**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: FE135, Fennel Oil, FCC

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

The product, FE135, Fennel Oil, FCC, is assigned a 24 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