



Scientific Documentation

CA185, Camphor, Synthetic, USP

Not appropriate for regulatory submission.
Please visit 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 26.January.2018



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 positioned above the typed name.

Alan Wang, MSQA, ASQ CQA
Director of Technical Services
techservices@spectrumchemical.com

CA185, Camphor, Synthetic, USP

Table of Contents

- Product Specification
- Safety Data Sheet (SDS)
- Manufacturer
- Certification of Quality Management System (QMS)
- Certification of current Good Manufacturing Practices (cGMP)
- Product BSE/TSE Statement
- Product Certificate of Analysis Sample(s)
- General Label Information – Sample Label
- General Lot Numbering System Guidance
- Stability – Shelf Life Guidance

spectrum[®]
CHEMICAL MFG CORP



Specification for Camphor, Synthetic, USP (CA185)

Item Number	CA185
Item	Camphor, Synthetic, USP
CAS Number	76-22-2
Molecular Formula	C ₁₀ H ₁₆ O
Molecular Weight	152.23
MDL Number	
Synonyms	DL-Camphor

Test	Specification	
	Min	Max
MELTING RANGE	174°	179°C
SPECIFIC ROTATION	OPTICALLY INACTI	
APPEARANCE OF SOLUTION		TO PASS TEST
NONVOLATILE RESIDUE		0.05%
HALOGENS		0.035%
ELEMENTAL IMPURITIES	AS REPORTED	
IDENTIFICATION		TO PASS TEST
EXPIRATION DATE		
DATE OF MANUFACTURE		
APPEARANCE		
RESIDUAL SOLVENTS	TO PASS TEST	

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: 4/08/2015

Revision Date: 04/08/2015

Revision Number: G1

Product identifier

Product code: CA185
Product Name: CAMPHOR, SYNTHETIC, USP

Other means of identification

Synonyms: 1,7,7-Trimethylbicyclo(2.2.1)-2-heptanone
1,7,7-Trimethylnorcamphor
2-Bornanone
2-Camphanone
2-Kamfanon
2-Keto-1,7,7-trimethylnorcamphane
Alphanon
Bicyclo(2.2.1)heptan-2-one, 1,7,1-trimethyl-
Bicyclo(2.2.1)heptane-2-one, 1,7,1-trimethyl-
Bornane, 2-oxo-
Camphor
Camphor, natural
Camphor, synthetic
Camphor, synthetic (ACGIH:OSHA)
DL-Camphor
Formosa camphor
Gum camphor
Huile de camphre
Japan camphor
Kampfer (German)
Laurel camphor
Matricaria camphor
Norcamphor, 1,7,7-trimethyl-
Root bark oil
Spirit of camphor
dl-Camphor
CAS #: 76-22-2
RTECS # EX1225000
Cl#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Plasticizer for cellulose esters and ethers.
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 by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Flammable solids	Category 2

Label elements

Warning

Hazard statements

Harmful if swallowed
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
Flammable solids



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

Specific treatment (see .? on this label)

Product code: CA185

Product name: CAMPHOR,
SYNTHETIC, USP

2 / 13

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Camphor (DL) 76-22-2	76-22-2	100	*

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. If skin irritation persists, call a physician.

Eye Contact:

Flush eye 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. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes serious eye irritation. Causes skin irritation. Irritating to respiratory system. Central nervous system effects. Excitement. Convulsions. May cause drowsiness or dizziness. May cause coughing and shortness of breath. Respiratory depression. May cause central nervous system effects. Weak, rapid pulse or rapid heart rate (Tachycardia). Causes digestive (gastrointestinal) tract irritation. Abdominal pain. Vomiting. Nausea. Thirst. Odor of camphor on the breath.

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

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 a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides

Specific hazards: Flammable
Containers may explode when heated
When heated to decomposition it emits toxic fumes

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. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter 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. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Use appropriate tools to put the spilled solid in a suitable 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. Avoid dust formation. Keep away from incompatible materials. Remove all sources of ignition. All equipment used when handling the product must be grounded.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe vapours/dust. Do not ingest. Keep away from heat and sources of ignition. 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 containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Keep away from heat and sources of ignition. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Strong oxidizing agents. Strong reducing agents. Chlorinated solvents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Camphor (DL) 76-22-2	2 mg/m ³ TWA	= 2 mg/m ³ TWA	= 3 ppm STEL	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Camphor (DL) 76-22-2	= 12 mg/m ³ TWA = 2 ppm TWA	= 2 ppm TWA	2 ppm TWA	2 ppm TWAEV 12 mg/m ³ TWAEV 3 ppm STEV 19 mg/m ³ STEV

Australia and Mexico

Components	Australia	Mexico
Camphor (DL) 76-22-2	19 mg/m ³ STEL 2 ppm TWA 12 mg/m ³ TWA	= 12 mg/m ³ TWA = 2 ppm TWA

Appropriate engineering controls**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment**Personal Protective Equipment**

- Eye protection:** Goggles or Safety glasses with side-shields
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Effective dust mask. or. Wear respirator with dust filter.. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , 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. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.	Appearance: Crystalline solid. Crystals. Crystalline block.	Color: White.
Odor: Fragrant. Penetrating.	Taste Slightly bitter, cooling.	Molecular/Formula weight: 152.23 g/mol
Formula: C10-H16-O	Flammability: No information available	Flash point (°C): 66°C
Flashpoint (°C/°F): 66°C/ 150°F	Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): 0.6%
Upper Explosion Limit (%): 3.5%	Autoignition Temperature (°C/°F): 466°C/ 871°F	pH: No information available
Melting point/range(°C/°F): 179°C/ 354.2°F	Boiling point/range(°C/°F): 204°C/ 399.2°F	Decomposition temperature(°C/°F): No information available
Bulk density: No information available	Specific gravity: 0.992	Vapor pressure @ 20°C (kPa): 0.0866
Density (g/cm3): No information available	Evaporation rate: No information available	Vapor density: 5.24
VOC content (g/L): No information available	Odor threshold (ppm): 1.3	Partition coefficient (n-octanol/water): 2.38
Viscosity: No information available	Miscibility: No information available	Solubility: Easily soluble in acetone Very slightly soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents
Reacts with reducing agents
Reactive with chlorinated solvents

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Strong oxidizing agents. Strong reducing agents. Chlorinated solvents.

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

Camphor (DL) - 76-22-2

LD50/oral/rat = No information available

LD50/oral/mouse = 1310 mg/kg Oral LD50 Mouse

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 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 = No information available

LD50/oral/mouse =

Value - Acute Tox Oral = 1310mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

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 = 500mg/m³

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. Moderate skin irritation.

Eye Contact: Causes eye irritation.

Inhalation Irritating to respiratory system. May affect respiration (respiratory depression, emphysema). Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath. Apnea may occur. May cause nausea, vomiting. May affect behavior/central nervous system (excitement). May affect behavior the brain and central nervous system(muscle contraction and spasticity).

Ingestion

Harmful if swallowed. Causes digestive (gastrointestinal) tract irritation. Causes abdominal pain (epigastric distress). It causes irritation or a burning sensation of the mouth and throat . Causes vomiting. May cause nausea. May cause thirst. Odor of camphor from the mouth is readily apparent. In cases where excessive dose of camphor was ingested, disturbances of vision such flickering, darkening, or veiling of vision as well as noises in the ears and deafness have occurred.. May cause mydriasis (dilated pupils). May affect behavior/central nervous system (headache, excitement, vertigo, drowsiness, mental confusion, seizures/convulsions, dizziness, twitching of the facial muscles, muscular spasms, feeling of tension, rigidity, and with severe poisoning, unconsciousness or coma). May affect the cardiovascular system (tachycardia). May affect liver . May affect urinary system (kidneys).

Aspiration hazard

No information available

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

Prolonged or repeated inhalation may cause emphysema. Prolonged or repeated skin contact may cause dermatitis.

Sensitization:

No information available

Mutagenic Effects:

No information available

Carcinogenic effects:

Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Camphor (DL)	Not listed	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity

No data is available

Reproductive Effects:
Developmental Effects:
Teratogenic Effects:

No information available
 No information available
 No information available

Specific Target Organ Toxicity

STOT - single exposure
STOT - repeated exposure
Target Organs:

STOT - single exposure. Respiratory system.
 No information available
 Central nervous system. Kidneys. Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Ecotoxicity effects:**

Aquatic environment.

Camphor (DL) - 76-22-2

Freshwater Fish Species Data:

Pimephales promelas (fathead minnow) - 110 mg/l - 96 h

Camphor (DL) - 76-22-2

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
Camphor (DL)	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG No: 133
Marine Pollutant: No data available
DOT RQ (lbs): No information available

Symbol(s):

TDG (Canada)

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

Product code: CA185

Product name: CAMPHOR,
SYNTHETIC, USP

14. TRANSPORT INFORMATION

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN2717
Proper Shipping Name: Camphor
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 3L
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>Camphor (DL)</i>	Present	Present KE-34423	Present	Present (4)-308 (4)-601	Present	Present	Present 200-945-0

U.S. Regulations

Camphor (DL)

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0334
Pennsylvania RTK: Present
Minnesota - Hazardous Substance List: Present
California Directors List of Hazardous Substances: Present

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:
Camphor (DL)	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>
Camphor (DL)	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
Camphor (DL)	Not Applicable	01/26/199406/30/1998

Canada**WHMIS hazard class:**

B4 Flammable solid

Camphor (DL)

B4

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)
Camphor (DL)	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Camphor (DL)	Not listed	Not listed

EU Classification**R-phrase(s)**

R11 - Highly flammable.

R22 - Harmful if swallowed.

R36/38 - Irritating to eyes and skin.

S -phrase(s)

S 9 - Keep container in a well-ventilated place.

S16 - Keep away from sources of ignition - No smoking.

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

S46 - If swallowed, seek medical advice immediately and show this container or label.

S36/37 - Wear suitable protective clothing and gloves.

Components	Classification	Concentration Limits:	Safety Phrases
Camphor (DL)		No information	

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

Indication of danger:

Flammable

Xn - Harmful.

Xi - Irritant.

**16. OTHER INFORMATION**

16. OTHER INFORMATION

Preparation Date: 4/08/2015
Revision Date: 04/08/2015
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: CA185, Camphor, Synthetic, USP

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

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 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.



May 4, 2016

Re: Camphor, Synthetic, USP-CA185

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

Camphor, Synthetic, USP-CA185

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.

Sincerely,

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

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

Item Number	CA185	Lot Number	1GK0300
Item	Camphor, Synthetic, USP		
CAS Number	76-22-2		
Molecular Formula	C ₁₀ H ₁₆ O	Molecular Weight	152.23

Test	Specification		Result
	min	max	
MELTING RANGE	174°	179°C	174.4 - 176.7°C
SPECIFIC ROTATION	OPTICALLY INACTIVE		OPTICALLY INACTIVE
APPEARANCE OF SOLUTION		TO PASS TEST	PASSES TEST
NONVOLATILE RESIDUE		0.05%	0.03 %
HALOGENS		0.035%	<0.035 %
ELEMENTAL IMPURITIES	AS REPORTED		NO ELEMENTAL IMPURITIES PRESENT
IDENTIFICATION		TO PASS TEST	PASSES TEST
EXPIRATION DATE			30-JUN-2022
DATE OF MANUFACTURE			01-JUL-2017
APPEARANCE			WHITE CRYSTALLINE MASSES
RESIDUAL SOLVENTS	TO PASS TEST		PASSES TEST
CLASS 2 (solvent) / XYLENE			<2170 ppm

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.

Item Number	CA185	Lot Number	2GI0330
Item	Camphor, Synthetic, USP		
CAS Number	76-22-2		
Molecular Formula	C ₁₀ H ₁₆ O	Molecular Weight	152.23

Test	Specification		Result
	min	max	
MELTING RANGE	174°	179°C	174.4 - 176.7 C
SPECIFIC ROTATION	OPTICALLY INACTIVE		OPTICALLY INACTIVE
APPEARANCE OF SOLUTION		TO PASS TEST	PASSES TEST
NONVOLATILE RESIDUE		0.05%	0.03 %
HALOGENS		0.035%	<0.035 %
ELEMENTAL IMPURITIES	AS REPORTED		NO ELEMENTAL IMPURITIES PRESENT
IDENTIFICATION		TO PASS TEST	PASSES TEST
EXPIRATION DATE			30-JUN-2022
DATE OF MANUFACTURE			01-JUL-2017
APPEARANCE			WHITE CRYSTALLINE MASSES
RESIDUAL SOLVENTS	TO PASS TEST		PASSES TEST
CLASS 2 (solvent) / XYLENE			< 2170 ppm

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.

WARNING
 • Flammable solid • Harmful if swallowed • Causes serious eye irritation • Causes skin irritation • May cause respiratory irritation.
 • Keep away from heat, sparks, open flames, hot surfaces
 • No smoking • Ground container and receiving equipment
 • Use explosion-proof equipment • Do not eat, drink or smoke when using this product • Wear protective gloves, eye protection, face protection • Avoid breathing dust • Use only outdoors or in a well-ventilated area • Wash face, hands and any exposed skin thoroughly after handling.
FIRST AID: Call a POISON CENTER or physician if you feel unwell. 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. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Rinse mouth.
 * IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO₂ to extinguish.

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

DOT: UN2717, Camphor, synthetic, 4.1, PG III

Chemical Emergency: (800)424-9300

www.SpectrumChemical.com

Melting Range..... 174°-179°C
 Specific Rotation..... Optically inactive
 Appearance of Solution.....To pass test
MAXIMUM LIMITS
 Nonvolatile Residue 0.05%
 Halogens..... 0.035%
 Residual SolventsTo pass test

KEEP FROM CHILDREN

Exp. Date: 03-31-2025

R 9/E3GHS A Lot No. 062233

- | | | |
|---|--|---|
| A Bar Code | F Size/Quantity | K Empirical Formula, Formula Weight and Technical Specifications Panel |
| B GHS Hazard Pictograms | G Chemical Abstracts Service (CAS) Registry Number | L Expiration Information |
| C Warning, Safety Data and Precautionary Information | H Caution Information | M Lot Number |
| D Product Catalog Number | I DOT Shipping Information | N Kosher Certified by Kosher Supervision of America (KSA). |
| E Item Name, Form, Grade | J Toll-Free 24-Hour Chemical Emergency Telephone Number | |
| O 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 928th 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 706th 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 if we may be of further assistance.

Sincerely,



Michael Dang
Manager, GMP Compliance



Stability – Shelf Life Guidance

Product Covered: CA185, Camphor, Synthetic, USP

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

The product, CA185, Camphor, Synthetic, USP, is assigned a 60 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