Material Safety Data Sheet
FisherBrand Hemo-De -Clear

ACC# 45338

Section 1 - Chemical Product and Company Identification

MSDS Name: FisherBrand Hemo-De -Clear
Catalog Numbers: 15182507A, 15182507C, 15182507E
Synonyms: Carvene; (+)-4-Isopropenyl-1-methylcyclohexene; (+)-R-Limonene; (R)-1-Methyl-4-(1-methylethenyl)cyclohexene; D-(+)-Limonene; d-Limonene; d-p-Mentha-1,8-diene; optically active terpene.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
5989-27-5	d-Limonene	>98.0	227-813-5
25013-16-5	Butylated hydroxyanisole	<0.24	246-563-8
119-13-1	delta-Tocopherol	0.03	204-299-0

Hazard Symbols: XI N
Risk Phrases: 10 38 43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear almost colorless. Flash Point: 48 deg C. **Flammable liquid and vapor.** **Warning!** May cause respiratory tract irritation. May cause allergic skin reaction. Causes eye and skin irritation.
Target Organs: Skin.

Potential Health Effects

Eye: Causes eye irritation.
Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis.
Ingestion: May cause digestive tract disturbances.
Inhalation: May cause respiratory tract irritation.
Chronic: In 2-year gavage studies, there was clear evidence of carcinogenic activity of d-limonene for male rats, as shown by increased incidences of tubular cell hyperplasia, adenomas, and adenocarcinomas of the kidney. There was NO evidence of carcinogenic activity of d-limonene for female rats, for male mice, or for female mice.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin: In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical aid if symptoms occur. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.
Extinguishing Media: Use water fog, dry chemical, carbon dioxide or alcohol type foam.
Flash Point: 48 deg C (118.40 deg F)
Autoignition Temperature: 255 deg C (491.00 deg F)
Explosion Limits, Lower:.70 vol %
Upper: 6.10 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Forms smooth, slippery surfaces on floors, posing an accident risk. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Separate from oxidizing materials. Partially filled containers should be blanketed with nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
d-Limonene	none listed	none listed	none listed
Butylated hydroxyanisole	none listed	none listed	none listed
delta-Tocopherol	none listed	none listed	none listed

OSHA Vacated PELs: d-Limonene: No OSHA Vacated PELs are listed for this chemical. Butylated hydroxyanisole: No OSHA Vacated PELs are listed for this chemical. delta-Tocopherol: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear almost colorless
Odor: citrus-like odor
pH: Not available.
Vapor Pressure: 1.98 mm Hg @ 25 deg C
Vapor Density: 4.7 (Air=1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 175-176 deg C @ 760mmHg
Freezing/Melting Point:-74 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:.8400g/cm3
Molecular Formula:C10H16
Molecular Weight:136.24

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, prolonged exposure to air.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 5989-27-5: GW6360000
CAS# 25013-16-5: SL1945000
CAS# 119-13-1 unlisted.
LD50/LC50:
CAS# 5989-27-5:

Draize test, rabbit, skin: 10%/24H Mild;
Oral, mouse: LD50 = 5600 mg/kg;
Oral, rat: LD50 = 4400 mg/kg;
Skin, rabbit: LD50 = >5 gm/kg;

CAS# 25013-16-5:
Oral, mouse: LD50 = 1100 mg/kg;
Oral, rabbit: LD50 = 2100 mg/kg;
Oral, rat: LD50 = 2 gm/kg;

CAS# 119-13-1:

Carcinogenicity:
CAS# 5989-27-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 25013-16-5:
California: carcinogen, initial date 1/1/90
NTP: Suspect carcinogen
IARC: Group 2B carcinogen CAS# 119-13-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: Not known to be teratogenic.
Reproductive Effects: See actual entry in RTECS for complete information.
Neurotoxicity: No information available.
Mutagenicity: d-Limonene was not mutagenic in 4 strains of S. typhimurium, did not significantly increase the number of Tft-resistant cells in the mouse L5178Y/TK+/- assay, and did not induce chromosomal aberrations or SCEs in cultured CHO cells.
Other Studies: Oral TDLo dog: 180 gm/kg/26W intermittent caused changes in bladder weight.

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: May bioconcentrate in aquatic organisms and fish. Has low mobility in soil and may rapidly volatilize in the atmosphere. Limonene can be readily degraded in soil.
Physical: No information available.
Other: Dipentene, which is inactive limonene, is a marine pollutant.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	DIPENTENE				Dipentene
Hazard Class:	3				3
UN Number:	UN2052				UN2052
Packing Group:	III				III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 5989-27-5 is listed on the TSCA inventory.
CAS# 25013-16-5 is listed on the TSCA inventory.
CAS# 119-13-1 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 5989-27-5: acute, flammable.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material

does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 5989-27-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 25013-16-5 can be found on the following state right to know lists: California, Minnesota, Massachusetts.
CAS# 119-13-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
WARNING: This product contains Butylated hydroxyanisole, a chemical known to the state of California to cause cancer. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XI N
Risk Phrases:
R 10 Flammable.
R 38 Irritating to skin.
R 43 May cause sensitization by skin contact.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S 24 Avoid contact with skin.
S 37 Wear suitable gloves.
S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)
CAS# 5989-27-5: No information available.
CAS# 25013-16-5: No information available.
CAS# 119-13-1: No information available.
Canada - DSL/NDSL
CAS# 5989-27-5 is listed on Canada's DSL List.
CAS# 25013-16-5 is listed on Canada's DSL List.
CAS# 119-13-1 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of B3, D2B.
Canadian Ingredient Disclosure List
CAS# 5989-27-5 is listed on the Canadian Ingredient Disclosure List.
CAS# 25013-16-5 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997
Revision #6 Date: 3/13/2003